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THE MACROLEPIDOPTERA OF THE WORLD

A SYSTEMATIC DESCRIPTION OF THE
HITHERTO KNOWN MACROLEPIDOPTERA

IN COLLABORATION WITH WELL-KNOWN SPECIALISTS

EDITED BY

DR. ADALBERT SEITZ, PROFESSOR



DIVISION I: FAUNA PALAEARCTICA VOL. 1—4

DIVISION II: FAUNA EXOTICA VOL. 5—16

VOL. 5

ALFRED KERNEN VERLAG STUTTGART

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THE AMERICAN RHOPALOCERA

WITH 203 PLATES

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Preface.

The first era of the „Macrolepidoptera of the World; comprising the palearctic fauna, could yet be completed in the year 1914. It is only to-day that the second large division containing the exotic day-butterflies is coming to a close. On 458 plates the whole day-butterflies of the Indo-Australian, American, and Ethiopian ranges were figured, unless they were dispensable or unavailable.

The present fifth volume which I herewith place before the public, comprehends the *Rhopalocera* and *Grypocera* of the whole of America with a delimitation as has been tried to substantiate on p. 3 (of the Introduction). To those who do not consider this delimitation to be sufficient for faunistic reasons — which doubts are not unjustified — it may be pointed out that, in order to finance such expensive enterprises as was the production of the Macrolepidoptera, practical theoretical considerations have sometimes to yield to practical ones. The restriction of the interest or at least of the collections of many intending purchasers upon especially American forms appeared to the editor to be so far-spread that he thought to owe particular consideration to the nations of that part of the globe promising the greatest number of subscribers for the relative volumes.

This consideration appeared to the author to be the more necessary since just of late the work had been considerably subsidized by America. Beside many letters from Brazil, Argentina, Colombia, and Paraguay to the editor and the authors of the corresponding groups of lepidoptera, that were often mentioned in the text, we are particularly indebted to the United States and Mexico for their active support. Especially Mr. ROBERTO MUELLER and Prof. CARLOS HOFFMANN in Mexico (City), Mr. W. SCHAUS and H. G. DYAR in Washington, by their unselfish collaboration enabled us to fill up a great number of hitherto prevailing gaps and to eliminate former errors. By the kindness of some more eminent specialists of the American fauna, such as BARNES, BENJAMIN, BOLL, SNYDER etc. — whose names had been gratefully noted already in the first part of the work — we were able to supply figures of specimens which would have never been possible but for the kind control of the owners of such rarities or even unique specimens.

The mentioning of the names of all who assisted the editor in his gigantic work both by word and deed is probably neither intended by them nor is it to the interest of the work; but we consider it to be our duty to express at this place our sincere thanks for their endeavours.

The immense material to which we had to seek access for the sake of elaborating most satisfactorily the American lepidoptera was only partly available on the European Continent. The faunae of Canada and of the United States were the most represented in European, particularly German, Museums. This is especially the place where the above-mentioned assistance of the entomologists of the United States set in; and besides the literature on the North American fauna is already so copious that by its aid an approximate survey particularly of the American day-butterflies could be obtained. By means of an abundant use of the works of ABBOT and SMITH, SCUDDER, the two EDWARDS, HOLLAND, WRIGHT and others with partly excellent figures, and by the aforesaid kind assistance of North American collectors, we believe to have supplied a compilation sufficient for the short draft to which such an extensive work has to be confined.

As to Mexico, the above-mentioned help of Mr. R. MUELLER and Mr. C. HOFFMANN enabled us to study novelties and rarities about which others would scarcely have informed us. Prof. Dr. M. DRAUDT at Darmstadt, whose collection of Mexican lepidoptera is probably unexcelled in Europe, has on the base of this material personally elaborated the *Lycaenidae* and *Grypocera* and thereby rendered a particularly great service to the exploration of this rather defective field, and he was able to supply nearly all the figures of more than a hundred newly described American day-butterflies.

Central America which, by the renowned „Biologia“ of SALVIN and GODMAN and later on by W. SCHAUS' publications, is better known than most of the South American tropical countries, could frequently

be elaborated according to the material of A. H. FASSL and the abundant collection yielded by RIBBE from the Chiriqui having been most kindly made accessible to us by the firm of Dr. STAUDINGER and BANG-HAAS. But with respect to this faunistic region — apart from Costa Rica perhaps — we can state that numerous districts have been insufficiently explored, and already the near future may supply us with a more compendious enlargement of our knowledge.

About Colombia and the districts of the Amazon and its tributaries the collections of A. H. FASSL give us ample information. Some plates, such as the *Agrias* on pl. 113 B, have almost entirely been made according to novelties from FASSL's Collection, which he collected in the unhealthy forests of Tropical South America and which cost him his life, for he recently succumbed to the pernicious climate. We feel particularly pleased that he left a permanent memorial in the Additions just to this fifth volume.

From Brazil and the western part of South America there existed likewise rich collections. CARLEPP's plentiful returns from Peru supplied particularly abundant material. In Bolivia it was likewise FASSL who collected very thoroughly though not very long and who put his rich material at our disposal. For the adjacent parts of Argentina, the returns by JOSÉ STEINBACH yielded many good objects, whilst to the south of that country and in Uruguay the editor himself was able to make many observations. The same is the case with Brazil, where the editor collected considerable material especially in Bahia and from where the greatest part of the biological notes originate which were interspersed in the text. Of great value were the consignments from these South American districts by Mr. ZIKAN and Mr. ARP in Brazil.

Moreover, both the compilers and the editor, for the sake of their studies, endeavoured to make use of the special collections as well as of the large Museums. We here once more beg to express our gratitude also to their directors or owners, as far as this had not already been done in the preface to the volumes of the first part. By their kindness COURVOISIER's Collection of the Lycaenids could be viewed, and Mr. ABEL in Leipzig had the kindness to send us some of his Hesperids for comparison. If I mention here that for instance LORD ROTHSCHILD allowed me to study 2500 Erycinids of the Tring Museum, it is easily understood of what great importance such aid was in composing the different chapters.

If the conclusion of this volume has been delayed for an entire decade, nobody will wonder at it who remembers that just the native land of the work was the centre of those terrible convulsions to which the world was exposed during that period. It is, on the contrary, astonishing and above all due to the subscribers' forbearance that a scientific work such as the present one was able to outlast all these heavy blows without being harmed otherwise.

I cannot edit this volume without emphatically thanking the compilers of the different lepidopteral families as well as the publisher for the immense sacrifice which the continuation of this work required just in such hard times. It was the latter's ardent desire to reward, in close collaboration with the editor, the subscribers' great patience to which they had been exposed by the disastrous events of the last ten years, and to reach such a juncture, when the volume of the American day-butterflies could be put before the public and those of the Indian and African faunae are on the point of being concluded.

As to the way how the work was compiled, we may refer to the prefaces of the volumes of the palaearctic part. Nothing has changed in the editor's position towards the so-called international nomenclatural rules. They must be rejected in the zoological world as a universally decisive code of laws, and entomology is not entitled to have an exclusive position therein. This, however, does not preclude that the greatest part of these rules, particularly those representing merely a precise wording of customs used long ago and having nowhere been refused, are useful and have therefore also been applied throughout the „Macrolepidoptera“. They have probably only been rejected as a decisive code in as much as they did not only accomplish their main object of creating a nomenclatural stability, but even often upset it, since constant unearthings and fresh interpretations of old names produced new conflicts with the whole literature on this subject. As our work is intended to be only a manual, we have tried to guard it against this defect which is mostly due to the principle of priority having been too rigidly interpreted, but otherwise we in no way restrained the author in applying the customary nomenclatural laws.

It seems that many entomologists thought the „Macrolepidoptera“ to offer the chance of putting the treatment of lepidopterology on a scientific basis. The editor, however, could not chime in with this view for ideal and practical reasons. Every specialist usually considers those methods and maxims by means of which he gained his most important results to be the most valuable to science. It appears, however, to be impossible to attain in this way the uniformity of the total work aspired at by the editor. Nearly every chapter

would then have been subject to another principle of the mode of compilation. And besides every revolution must be substantiated, and thereby the extensive program of the work would have been rendered disharmonious, unhandy, and its contents would not have been enduring, but at any rate rather antipathetic to most of those using it, 95 percent of whom are no learned specialists. The editor therefore tried to prevent the authors from specialistic digressions however valuable they might be in monographies.

In the 5th volume, like in the volumes of the preceding part, a cursory inspection already shows that the text is chiefly thought to be a complement to the plates. Beside biological remarks it mostly contains hints to more subtle marks of distinction from closely allied species. Wherever the species were easily recognizable from the figures without any danger of errors, as in especially variegated and conspicuously marked genera (*Perisama*, *Catagramma*, *Anaea*, etc.), the text could be confined to but few words on synonymy and patria; on the contrary, certain complicatedly marked Lycaenids or Hesperids often necessitated a somewhat minute description. At any rate the latter has been possible without exceeding very much the number of 1000 pages and 200 plates being the maximum number for the handiness of a volume.

In the text on the whole 15 000 names were explained and illustrated by about 9000 figures on the plates. No sensible man will demand or only expect all the figures to be faultless or even works of art. If, however, the later plates of this volume should exhibit more defects than the first, this is due to the immense difficulties due to the war and revolution.

But we beg the readers to make allowance also for that part of the volume that appeared before the war, just as the reviewers had done for the first part. First and foremost the work is to serve as an orientation, for the quick recognition and estimation of materials, returns from explorations, collections, centuria, single specimens captured etc. For this purpose the figures must be well recognizable and life-like, but they need not be highly artistic. In those cases where copies were only to be obtained from old, technically incomplete works, we have therefore not expressly refused the responsibility for the correctness of our figure. Those who know the old works — and for monographies on single groups only such works will be taken into account — will at first sight find out which figures were made according to HEWITSON, CRAMER, or HÜBNER, so that it appeared to be superfluous to supply long lists about the origin of each original or copy.

We only remark in general that nearly all the figures of the *Papilio* and *Erycinidae* were made according to specimens of the Tring Museum, the *Pieridae* and many *Nymphalidae* according to those from J. RÖBER's collection at Dresden, the *Morphidae*, *Brassolidae*, *Prepona*, *Ageronia* all from the Coll. FRUHSTORFER, the Lycaenids according to those of the collections of FASSL, STAUDINGER-BANG-HAAS, and of the editor. The Mexican forms are mostly copies by Dr. DRAUDT, whilst many Satyrids originate from the collections of STAUDINGER and WEYMER, now in Berlin.

Of particular importance I consider to be the statement that a great many Hesperid figures were taken from the work by CARL PLÖTZ. Though this work, a great part of which is at present in the editor's possession (until its sale), has never been published in the volumes containing the plates (of which there exist about 20), yet, without the inspection of these plates, the numerous publications edited by PLÖTZ cannot possibly be correctly determined. We therefore had some hundreds of the species — mostly Hesperids — appearing to us to be doubtful copied from the 5th, 9th, and 13th volumes, and by the comparison of these original figures it has been possible to remove many an error and doubt from science. Although PLÖTZ' work was never for sale in the book-trade, yet at least part of it has been available to nearly all the active lepidopterologists; HEWITSON, GODMAN, MABILLE etc. have frequently referred to this work. Many figures, particularly those of the Hesperids on more than 1500 plates (the 6 volumes of part XX), have been copied and published by SWINHOE, MABILLE etc. Thus we have also cited PLÖTZ' work as an indispensable text-book and not newly denominated those species that are at once recognizable from the unique figures, but taken them over as sufficiently marked and distributed by copies.

As to the t e x t - v o l u m e we must remark that the editor is only responsible for the German edition. He had no influence upon the two other editions. The French edition, as far as it has been published after 1914, is at any rate entirely unknown to me; I have never seen a single copy. A real completeness could of course only be aspired until the time when the destructive effect of the World's War had not yet interrupted the scientific connexion amongst the nations. The further completion must be reserved to the supplementary numbers and to the time when the torn threads of scientific intercourse amongst the nations will be reknitted.

Unfortunately we could neither in this volume avoid annoying differences between the denominations in the text and on the plates. Technical reasons prevent us from starting simultaneously the description and illustration often based on the same specimen, and thus it was sometimes only after the accomplishment of

the plates that the figured specimens proved to deserve better another, mostly new name which could yet be done in the text, whilst the plates had already been published. We therefore beg to accept this drawback as the consequence of the continuous progress of our knowledge.

Thus the fifth volume, like its predecessors, is sent forth with the sole task of serving as a text-book to all the representatives and friends of lepidopterology. Just as little as the author intended with the volumes of the first part, he strived to create a sumptuous work with as many surprises as possible, with improved systems and unexpected novelties. A systematically and uniformly arranged elaboration of the American day-butterflies, organized into a complete set, with a short description of the habits and stages of development, but with as much consideration of the variations, faunae and synonymy as possible, that is the main task of the work, and if it should be recognized from its contents with how great a devotedness the authors as well as the editor and publisher have bestowed their fullest attention to this design, this acknowledgment will be their best reward.

Darmstadt, May 1924.

Dr. Adalbert Seitz.

===== VOLUME V: =====

THE MACROLEPIDOPTERA
of the
AMERICAN FAUNISTIC REGION



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Introduction.

The giant continent of America, which extends from the eternal snows of the arctic polar region further south than any other continent, is better adapted than any other to the production of an inexhaustible wealth of the most varied animal forms. Open almost everywhere to the moisture-laden east winds from the Atlantic, it admits the fertilising rains far into the interior, and thus develops an extensive and finely branched network of watercourses, which, in conjunction with the varying conditions of climate and warmth in the successive zones, call into being a fauna of quite unique variety.

Originating from the circumpolar arctic fauna, the entire fauna from southern Canada to Texas acquires a character approaching that of Europe and central Asia. Not only that the dominant animal forms in temperate North America belong, for the most part, to groups which also play a principal rôle in the temperate zone of the Old World, the geographical distribution shows also here the most striking analogies. Among the Lepidoptera, *Argynnis*, *Melitaea*, *Vanessa*, *Apatura*, Arctiids and Catocalas figure prominently in both, and as a single outstanding difference, the preponderance of the Hesperids in America, as against the prevalence of Satyrids in the Old World, is manifest even on superficial consideration. But the sum total of the forms to be observed in the northern temperate zone is almost equal in both hemispheres, while one half of the eastern temperate lands — corresponding roughly to the whole of the western — contains about the same number of Lepidoptera as that, namely about 6500 forms.

This is changed as soon as we reach the tropical zone in America. Quite suddenly all resemblance to the fauna of the Old World vanishes. The singular and highly characteristic *Morpho*, *Ithomia*, *Melinæa* and *Heliconius*, *Castnia* and *Glaucopis*, *Pericopis* and *Cyrtopoda*, the wonderful forms of neotropical Erycinids the tailed Hesperids, etc., have no counterparts in the Old World. They give to the South American fauna such a distinct individuality, even compared with that of the cooler parts of North America (north of Mexico), that the lepidopterous fauna of South America may well be designated the most characteristic of the world. What its principal peculiarities are, has already been pointed out in the introduction to this work, and will be further considered below.

That in spite of all this we have decided not to separate the North from the South American fauna, as has hitherto been done in zoogeography, under the terms Neotropical and Nearctic, is due to the fact that a basis for any sharp delimitation is wanting here, as it is between the Indian and Australian faunistic regions. Just as the limits there drawn by WALLACE are arbitrary, so also in America the otherwise applicable principle of faunistic division fails us. Let us, for example, compare the conditions in America with those of the much more compact continent of Africa: south of the Sahara there is no species of *Euchloë*, no *Aporia*, no *Procris*, no true *Zygæna*, no *Vanessa*, no *Pararge*, no *Ocnogyna*, in short all the species are absent which in North Africa are the commonest, not to say the most obtrusive representatives of the butterfly world. On the other hand the north has no *Euphaedra*, no *Cymothoe* or *Euryphene*, all the groups of *Papilio* and Pierids which are distributed throughout the rest of Africa are wanting, we seek in vain for *Amazilia*, which is so characteristic of the whole of tropical Africa, and so on.

In America there is no such insuperable barrier as is formed by the great Sahara desert of Africa, with its absence of vegetation. Thus we find the otherwise purely South American Neotropids pushing northwards into California, the genus *Heliconius* into Florida, while *Argynnis*, *Colias*, *Catocala*, etc., extend their range southwards on the heights of the Andes; in a word, the two faunas so encroach upon one another that we prefer to draw no boundary at all rather than an artificial one; and we do this so much the more willingly because these theoretical considerations fit in with a series of practical ones.

Among the characteristics of the lepidopterous fauna of America, which are most prominent in South America, we would mention its **richness in species**. It used to be said that the double continent of America alone contained about as many species as all the rest of the world. This comparison was applicable so long as we had not learned to distinguish all the numerous local forms of certain Malayan

and Indo-Chinese butterflies, which result in the appearance of a single species, on all those larger and smaller islands of the Malay Archipelago, in a dress similar, yet with constant differences according to the locality. But since the species of the Old World have been split up into such a large number of races or local varieties, or subspecies, rainy- and dry-season forms, mountain forms and those of the lowlands, the more compact South America, being for the most part more regularly tempered, without pronounced rainy season, has lost very much of its preeminence.

Now when one takes into consideration that any butterfly, of whatever species, would be able to fly from Canada as far as to Cape Horn without meeting with any direct, insurmountable obstacle — neither such a sharply defined desert as separates Northern from Central and Southern Africa, nor a sea, as between Australia and India — it is not easy to understand how it is that we find Castnias, Neotropids, Hesperids or Catagrammas in almost every district of America in distinct forms, mostly unconnected with one another by transitions. In this is manifest a creative energy of unusual richness, such as occurs in no other country to the same extent.

The **lavish endowment** of its species with brilliant and conspicuous colours is the second principal characteristic of the American fauna. In India and tropical Africa there are also plenty of gay species, which fact we do not leave out of account; but while the Old World everywhere produces, side by side with the gay and richly ornamented forms, multitudes of others which are tawny, white or neutral brown in colour, many of the open places in the South American woods are alive with the little gold- and silver-marked Syntomids or the azure blue giant butterflies. None of the Old World species can vie with *Argopteron aureipennis* in its pure golden under surface, or show such rich adornment of silver as *Dione moneta*, or such brilliant blue ground colour as *Morpho cypris*. And even those colours which have not the metallic or silky gloss are nevertheless extremely elegant and pleasing in their arrangement. Very frequently they consist of bright red, orange or blue-green bands or longitudinal spots on a deep black ground, resulting in more quiet richness and fulness of colour than a stiffer, more overloaded scheme of markings. Such crude contrasts of colour as occur in the *Papilio agamemnon* group, in *Neurosigma* and in *Catphissus*, are rare in America. A deeply coloured, though almost always only unicolorous band suffices to make *Epicalia*, *Chlorippe* and *Prepona*, *Callicore* and *Adelpha* the most beautiful forms which a refined taste could imagine.

The phenomenon of mimicry, which was fully discussed in the introduction to the first part of this work, appears in America in an altogether special and characteristically modified manner. There are many localities in South America, often quite circumscribed in extent, in which almost all the lepidopterous species that occur in any numbers have one and the same wing-pattern indifferently, whether they be butterflies or moths, whether stoutly-built Swallowtails or weak Pierids or shy Nymphalids. In Colombia one may see flying about a single flowering shrub a number of butterflies all coloured and marked alike, but belonging to four entirely different groups. They are all black with an oblique scarlet band on the forewings. The first is a Pierid (*Perote leucodrosyne*), the second a Heliconius (*Heliconius melpomene*), the third a Swallowtail (*Papilio euterpius*) and the fourth (*Adelpha isis*) a species of Nymphalid allied to *Limenitis*. In certain districts of Southern Brazil a yellow band on the forewing and dentated longitudinal stripes on a brownish yellow ground provide the general scheme, which is followed by Pierids (*Perhybris*, *Dismorphia*), Danaids (*Lycorca*), Heliconians (*Heliconius narcæa*) and even some moths (*Chetone*). I have elsewhere spoken of a tendency of certain districts to produce uniformity in their inhabitants, and although kindred phenomena are not wanting in India, or particularly in Africa, they are far less conspicuous there than in America.

Just as the present mammalian fauna of South America is wanting in gigantic forms, so too its Lepidoptera are for the most part of only medium size. Only in *Caligo*, *Morpho*, some Sphingids and the giant Noctuid *Thysania agrippina* do we find great dimensions attained; there are no actual parallels to the huge *Attacus*, or to *Ornithoptera* with its great uncouth females. And as in size, so also in shape there is not the same tendency towards grotesque, unintelligible forms as one is struck by in many genera of the Old World, such as *Leptocircus*, *Sericinus*, *Drurya antimachus*, etc. Beyond the development of tails in normally untailed families (*Nymphalidae*, *Erycinidae*, *Hesperiidae*) there is little that is very strange in the aspect of the American Lepidoptera.

In addition to these peculiarities of the American fauna, there are some others which are not so difficult to explain. In a large number of districts, especially in South America, there are no regular wet and dry seasons. In the neighbourhood of Rio de Janeiro sudden changes are possible on almost any day of the year, and the rainless periods are variable both in their duration and in the time of their arrival. Thus the conditions there — as we have already briefly mentioned — do not lend themselves in the same pronounced way to the development of **seasonal dimorphism** as in many localities of the Old World, where the conditions of weather are perfectly regular, the rains and the heat of the sun being confined to certain months.

Polymorphism also does not seem, in another respect, to be developed to the same degree as in the Old World; namely, in its local conditions. Although in *Papilio lysithous*, for example, we observe the same conditions which obtain in many Indian species, namely that in different districts it mimics the different

Aristolochia-Papilios which occur there — e. g. in South Brazil as *P. pomponius*, mimicking *P. perrebus*, in Rio de Janeiro in the form *lysithous*, copying *P. agavus* — yet without doubt such cases are wanting in America as that of the Indian *P. menmon*, in which some 30 different forms of female belong to one almost constant male form.

The strict **localisation** of Lepidoptera in America is easily explained by the peculiarities of the conditions of vegetation. Like the Old World steppes, the prairies of North America and the Pampas of South America are not adapted to produce a great abundance of forms or even a moderate number of showy and elegant species. Hence we find *Morpho*, the larger Nymphalids, *Castaia*, etc., disappear rather suddenly from the district as soon as we leave the great Southern and Central American forest region. Hence, also, the West Indies, which are either poor in forests or altogether devoid of them, are far behind the neighbouring mainland in respect of their lepidopterous fauna, while conversely the East Indian Archipelago is especially rich in species.

It greatly surprises those who visit different parts of the American continent to notice the great **resemblance between northern and southern districts** which are separated by vast tracts of land differing entirely from both. The Argentine pampas produce species altogether analogous to those of the United States, often even the same species, while they are absent from the whole of the Neotropical forest region which intervenes. Almost at the same latitude where the last *Morpho* leaves us, whether northward or southward, we find *Colias*, *Pyrameis carye* and *Deiopeia* flying. *Euptoieta claudia* occurs both in the United States and in Uruguay in hardly distinguishable forms, while in the intervening tropical South America it is entirely absent, being supplanted by the very different *Eupt. hegesia*. Nothing analogous is known in the Eastern Hemisphere: the numerous Acraeas of South Africa vanish in the tropical zone and do not reappear north of the Sahara; *Argynnis*, which in America appears again in Chili and Argentina after missing the tropics, vanishes finally in the East on reaching the tropical region; neither South Africa nor Australia possesses any species of the Nymphalid group, which is so plentifully represented in the North. On the contrary the well-represented *Precis*, *Amauris*, etc., of South Africa do not reappear in North Africa or in Europe, and of other characteristic genera of the Old World, such as *Teracolus* and *Charaxes*, scarcely one species in a hundred extends from one temperate zone across the tropics to the other.

The rôle which the individual families play in the American fauna will be easily seen from the special part; attention need only be called here to a few points which result from a comparison of the fauna of the New World with that of the Old.

The **Papilios** of temperate North America surpass those of the corresponding latitudes of the Old World. San Francisco, St. Louis or Washington has two or three times as many species of *Papilio* as Spain, Algiers or Asia Minor, while on the other hand *Parnassius*, rich as it is in forms in the Old World, has only a few somewhat scattered, subordinate forms in the New.

The **Pierids** are pretty equally represented on both sides of the Atlantic, especially since some have been transplanted during the last century.

The **Danaids** show an extremely close parallelism. With only a single species crossing the 40th degree of N. latitude, their number so increases in the tropics as to become dominant, and the number of very closely related forms would be almost equally the same in the Western Hemisphere as in the Eastern if we reckoned the Neotropids, about to be mentioned.

But the **Satyrids** are considerably less prominent in the temperate zone of the New World than in that of the Old. In the tropics, where the Satyrids wane and tend to give place to other groups, the contrast becomes less.

Preeminent among American forms are the **Ithomiidae**, related to Danaids, and which have been designated Neotropids, from their characteristic occurrence in the Neotropical region. Even the earliest naturalists who made any adequate observations in South America, such as BATES and WALLACE, were astonished at the enormous number of individuals, as well as the multitude of species which occurred together in small and circumscribed localities; BATES even wondered how the species, often deceptively similar to one another, managed to find out their right mates for copulation. HAASE, on morphological grounds, compares with this group, so rich in species, the genus *Hamadryas* of the Old World, which is equally poor in forms; from the biological standpoint it is better compared with *Euploea*.

The **Nymphalids**, as one of the most universal groups, occupy a prominent position in both hemispheres. It is hard to say on which continent their preponderance over certain other families of Rhopalocera is the most conspicuous. It is the Nymphalids which include most of the forms that are common to both hemispheres. *Vanessa antiopa*, *Pyrameis cardui* and *atalanta*, *Polygonia c-album*, *Argynnis tricularis*, *freiya*, *frigga*, *chariclea*, etc., connect the American fauna with the eastern and to a certain extent form a bridge.

The **Erycinids** of the Old World do not come anywhere near the wealth and variety of forms to which this family attains in America. To little over 100 species of the Eastern Hemisphere there are above 1000 in the Western, and at the same time the former are comparatively uniform structurally while the latter show manifold differences. America not only produces a number of original forms in this family, but

it is also rich in examples of mimicry, in which Erycinids copy members of the Nymphalids, Ithomiids and even protected Heterocera. Thus *Themone pais* mimics a *Mechanitis*, *Themone poecila* a *Phyciodes*, *Ithomeis* and *Compsotheria* copy Neotropids, *Lypropteryx olivia* resembles in flight a *Calodesma* of quite the same colouring, and the little *Syrmatia*, with their quick, buzzing flight, bear, as they dash past one, more resemblance to flies than to butterflies.

The **Lycaenids** show, in the northern Nearctic region, many forms belonging to the genus *Lycaena* or nearly related thereto; but as one proceeds further south *Thecla*-like forms increase, much as in the Old World. These Neotropical forms greatly exceed in size and brilliance the Indian *Arhopala*.

The most interesting American group is unquestionably the **Hesperids**, which in many South American localities occur in such a wealth of forms and individuals as to surpass, in variety and abundance, all the rest of the Lepidoptera. The long-tongued species appear to be the sole fertilising agents for some plants, and the picture of the white-flowered bushes thickly covered with black *Eantis* abides vividly in the memory of everyone who has collected in South America.

Among the Heterocera the Zygaenids are far less prevalent than the **Syntomids**, which are extremely well represented and often lavishly adorned with metallic colours. Here a wide field is opened for mimicry. The moths which are still commonly designated "Glaucopids" appear in the most wonderful garb, some copying the predacious Hemiptera, others beetles, but the largest number Hymenoptera. The strongest Hymenoptera in the world, the species of *Pepsis*, which wound bird-spiders with their sting and carry them off as food for their offspring, are copied by a very large number of Syntomid species. Under the name of "Marimbondo" this wasp is dreaded in America both by men and animals, on account of its terrible sting, so that in fact no better model could be found for protective resemblance. Entire genera of Syntomids, such as *Macrocneme*, almost exclusively copy these giant wasps.

The **Castniids** present, in some measure, a transition from the moths to the Hesperids. The true Castniids, such as the genera *Castnia*, *Gazera*, etc., are absolutely confined to America and indeed to its tropical and subtropical parts. We see in them moths with entirely the habits of butterflies, which not only feed, like many day-fliers, at flowers which grow in the sun, but also station themselves on points of vantage at the extremities of the foliage where they drive off their enemies, play with their own kind, and lay wait for the passing females.

The **Arctiids** of North America present many similar forms to those of the Old World, several genera and some species, such as *Arctia caja*, *Parasemia plantaginis*, *Phragmatobia fuliginosa*, being common to both hemispheres, without belonging to the holarctic polar fauna. The specifically American forms do not make their appearance in numbers till further south, where they appear of an entirely different build and colour; as *Ecpantheria* and *Halesidota*, which are specially developed in Central America, and the curious *Palustris*, whose larva is aquatic. But although the most singular forms of "tiger-moths" live in the tropics, the gayest and most beautifully marked are found in temperate North America, such as *Apantesis*, *Platyrepia*, *Haploa*, etc.

The **Lithosiids**, which in America, as in the Old World, are represented mostly by small forms, are often, especially in tropical America, brightly coloured and of diurnal habits. In North America itself scarcely 50 forms occur, they seem to reach the height of their development in the warm valleys of the Andes, just as in the East the slopes of the Himalayas have been shown to be particularly favourable to their production. No species are known which are common to both hemispheres; indeed hardly any genera, if we follow HAMPTON (as against KIRBY and DYAR) in removing *Utetheisa* from the family *Lithosiidae*.

The **Liparids** of America, in so far as we accept the present composition of this family, are considerably less prevalent than those of the eastern world. *Ocnieria dispar*, the "gypsy-moth", is an introduced species, whereas *Orgyia antiqua*, which is widely distributed in the west of the Old World, and reaches far north, is to be regarded as indigenous. We assume this to be so, although the species is common at some of the European ports (particularly Hamburg) and the larva is fond of spinning up on bales of merchandise, where the sluggish female also lays its eggs, so that every year large numbers are probably dispersed to the four winds. In the genus *Gynaeophora* the Liparids of America possess the species *G. groenlandica* and *rossii*, which reach the farthest north of all the Heterocera -- perhaps of all Lepidoptera.

The **Limacodids**, a family of universal distribution, are very plentifully represented in South and Central America, and develop elegantly marked, though small forms, many of them with a silky or metallic gloss on the wings. From temperate America about 50 forms are known, which is about $\frac{1}{10}$ of the total of known species. From the whole of America perhaps three times as many are known, or over $\frac{1}{3}$ of the total of known forms. It is remarkable that the northern part of America produces a far larger number of forms than that of the Palaearctic Region, which in many districts is very poor in Limacodids; thus in the whole of Europe only two species occur, i. e. less than $\frac{1}{2}$ per cent. of the known species.

The **Psychids** as still constituted at present, do not form a homogeneous family. The case-making of the larvae and the degeneracy of the female are due to convergence, though they have repeatedly been taken to indicate relationship. In America the Psychids play only a small rôle; only 15 per cent. of the

200 known forms inhabit the western continent, and only about a dozen of these occur in temperate North America.

It might appear singular that a family whose females are each and all immovable should have such an enormous range as the Psychids, which are represented in the remotest islands, such as New Zealand, Teneriffe, etc., and often by characteristic species. But it must not be forgotten that their larvae are extremely active and endowed with great powers of resistance, and many, if not all the species are parthenogenetic, i. e. capable of propagating without previous copulation. Nothing would be more erroneous than to infer the existence of a submerged continent from the occurrence of the Psychids on both coasts of the Atlantic. Their transplantation from America to the Old World and vice versa could very easily be effected by drift-wood. I have fished out from the Plata River floating boughs on which a number of cases of *Oiketicus platensis* were spun up, some containing sound larvae, others living pupae. It appears that the larva is capable of making its case watertight. I found large Psychid cases on the coast of North-Shore in the harbour of Sydney, Australia, which were spun up on the rocks, and over which every wave washed at flood-tide; they contained uninjured larvae. Thus their transplantation by means of drift-wood is not at all improbable; indeed they are not even threatened by many special dangers for their long and troublesome voyage. Psychid larvae can fast for a very long time, and when this is no longer possible to them, any food is accepted. The larvae of *Amicta febricta*, which I took in numbers in North Africa from a dry desert-plant, were fed up to the pupal stage in Europe on pear-peel; and inasmuch as a single female Psychid is sufficient to increase the range of a species, the greater wonder is that no species of this family is cosmopolitan, indeed that there is none which is possessed by America in common with the Palaearctic fauna.

The **Lasiocampids** as a whole are not yet sufficiently well known to allow of our forming a definite judgment as to their distribution. Without doubt America has over one-third of the 800—1000 existing forms. With the very large number of species which are already known from South America, it must be assumed that a more thorough exploration of the interior of Brazil will bring to light many more. As at present constituted, the group is not even homogeneous, so that many alterations are to be expected when the Neotropical forms, in particular, are fully worked out. As the family is now constituted, America possesses numerous exceptionally interesting forms. The larvae of the genus *Megalopyge*, remarkable for their peculiar tufts of hairs, are dreaded in America on account of the inflammation which these hairs cause. In one lady who came under my treatment they had produced swellings on the arm and breast, with several days' fever, so that their effects even exceed in intensity those of the hairs of *Thaumatopeoa*. Sometimes there is an unusually pronounced sexual dimorphism in this family, as in *Heliconisa pagenstecheri*, whose female was long known as *Dirphia costora*. In the New World, as in the Old, some of the Lasiocampids are of economic importance.

The **Saturnids**, of which there are somewhat over 400 species in all, are almost equally divided between the New World and the Old. In this magnificent group the relative richness of America is shown by its attaining, in the number of its Saturnids, to a total equalling those of the great continents of Asia and Africa combined. Against six for the whole of Europe, some 40 forms inhabit temperate North America. The Ceratocampids, too, which are related to the Saturnids, and of which there are about 50 forms, belong to America alone; whilst the Brahmaeids of the east possess hardly more than a dozen forms. On the other hand America is somewhat behind the Old World in respect of the true Bombycids.

The American **Sphingids**, in comparison with those of the Old World, show a proportion of 3 : 5, 370 out of about 1000 known forms occurring in the New World. The exhaustive work of ROTHSCHILD and JORDAN has thrown a very full light on the distribution of this family. America is particularly rich in gigantic hawk-moths, such as *Pachylia*, *Cocytius*, *Pholus*, *Pseudosphinx*, etc. One would expect, from the extensive powers of flight of most Sphingids, that quite a number of representatives of this group would be common to both hemispheres, which, however, is not the case; only quite a few species, such as *Celerio lineata* and *gallii*, appear in both without any very material differences.

In the **Notodontids** we have another heterogeneous group, in the composition of which alterations will certainly be made — at least by its splitting up into several groups — when it is worked out morphologically with a regard for the finer anatomical details.*) It is therefore of little value to fix the number which belong to the Western Hemisphere, out of the 600 odd species at present placed in the Notodontids. They form by far the greater part; the genera *Rosema*, with grass-green forewings, *Nystalea*, with its noctuid habits, the North American *Datana*, *Heterocampa*, etc., are rich in species which play an important part in the western continent on account of their richness in individuals.

In the **Noctuids**, conditions are much the same as in the Old World, especially as described in dealing with the Palaearctic Noctuids (vol. III, p. 11): in the south more diurnal species, in the north duller coloured genera (*Mamestra*, *Acronicta*, *Agrotis*, *Hadenia*, etc.) which sleep by day; but in the north, in addition, a wide distribution of the Catocalids, lightly sleeping night-fliers which are specially adapted for

*) AS PACKARD has done for the North American species.

their resting posture, but have preserved their bright colour on the underside as well as on the hindwing, which is concealed beneath the grey forewing. In the tropics of America the Noctuids recede in point of numbers, as only a few groups, such as *Hyblaea*, *Laphygma*, *Prodenia*, etc., appear in large number at times; however, the western tropical species frequently develop gigantic forms, such as *Erebus* and before all *Thysania agrippina*, which has the largest expanse of wings of all the known Lepidoptera.

The **Geometrids** show a very uniform distribution throughout the world. Their relatively weak flight makes them insecure on islands, and is a hindrance and menace to their propagation in the smaller storm-beaten islets. This general rule holds also for America, and so does the other rule, that the generally duller and darker colours of the temperate climate give place to brighter and often beautifully marked colouring in the warmer regions. As many species extend far northwards, there is a possibility of communication between the two hemispheres in respect of their Geometrid fauna; and although there are far fewer Geometrids than Noctuids common to the two, yet several species, such as *Eugonia magnaria (alniaria)*, *Hydria undulata*, *Anagoga pulveraria*, etc., occur in both without any essential differences.

Among the larger Geometrids, the genera *Azelina*, *Clysia*, *Oxydia*, *Prochoerodes* and *Sabulodes* are particularly prominent in America. In their habitus they borrow a good deal from the forms of other groups which inhabit the same region, but without showing any mimetic tendency. As in the Eastern Hemisphere, metallic colours are only developed exceptionally in the American Geometrids (*Ophthalmophora*); on the other hand we are confronted with true American schemes of colour and markings in the brightly coloured bands on a black ground which occur in *Scordylia*, *Nelo*, *Sangala*, etc.

The above is in broad outline a comparative picture of the American fauna and that of the Old World. It ought to be mentioned that some groups, such as the *Cymbidae*, are not represented at all in America; others, such as the Nyctemerids, only by a few forms, which might probably be better referred to some other group. It is very strange that the nearest representative of the tropical American genus *Urania* belongs to South-East Africa; cases like this belong to the at present still very numerous geographical puzzles.

BUTTERFLIES



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Diurna, Butterflies.

With the exception of the Neotropical Brassolids, all the American butterflies are day-loving insects. Even the dark-coloured Satyrid genera and the colourless *Haetera* and *Ithomia* fly by day, though in the dusky shade of the woods. What was said in the Introduction as to the colouring and the scheme of marking of the Lepidoptera of the New World, is applicable in a special degree to the colours of the frequently gorgeous butterfly-wings. In spite of the very considerable abundance of true Rhopalocera, they do not in America preponderate over the second group of Diurna, the Grypocera, to such an extent as in the Old World.

A. Rhopalocera, true Butterflies.

The differences from the Grypocera are given in vol. I, p. 7. The distribution of the Rhopalocera in America extends from Greenland to Cape Horn. In the islands lying to the south of this there do not appear to be any butterflies. These attain in the American genus *Morpho*, allied to the Satyrids, a high degree of development; among the Nymphalids we find in *Agrias* evidently modern forms, and among the Ithomiids the most pronounced examples of Mimicry.

Division I: Papilionina.

The Papilionina do not in America attain the same dimensions as in the Old World, for example in the Indo-Australian *Ornithoptera*. The largest American Papilionid is *Pap. homerus*, an island species. The genus *Parnassius*, rather prominent in the north of the Eastern Hemisphere, is much less so in America. The Pierids are similar to those of the Old World in their habits, and extend, like these, far into the north polar region. (SEITZ.)

Family I: Papilionidae, Swallowtails.

Palpi short, lying close to the head, occasionally long and projecting (*Teinopalpus*, North-India). Antennae of three types according to the structure of the segments: the fine sensory hairs beneath and laterally almost equally distributed over the proximal part of each segment, or there is a cavity on each side covered with sensory hairs (reminding one of the Nymphalids), or there is only one row of such cavities present (reminding one of the Pierids); the upperside scaled or naked. Mesothorax very strongly built, the sternum completely fused with the episternum, the suture (as in the Pierids) outwardly quite wanting. Fore legs fully developed; fore tibia with spur on the underside; claw simple, very rarely cleft as in the Pierids*); paronychium and pulvillus wanting. Cell of both wings closed; in the forewing the second discocellular (between the 1. and 2. radial) the longest, the 2. radial arising from the lower angle of the cell, the 3. discocellular standing in or almost in the prolongation of the median, hence four veins arising from the hindside of the cell, upper submedian vein often present as a short transverse vein arising from the median near the base, 3. submedian vein short, free, running into the hindmargin; hindwing with pre-costal vein, and one submedian vein. — Egg round or flattened, without prominent sculpturing. — Larva before the first moult with rows of bristle-bearing tubercles, which in the later stages disappear, or are

*) In one species of *Leptocircus*.

replaced by fleshy processes or hard spines; on the neck a fleshy, reversible fork of a red or yellow colour, secreting a scent, and being stretched out in defence (the osmaterium); lives free, but some species bend down the edge of a leaf so that a sort of tunnel is formed in which the larva conceals itself; some larvae are gregarious. — Pupa fastened at the anal extremity and by a thread encircling the thorax and wing-cases, or lying in a loose cocoon on the earth or just under its surface; three moveable abdominal segments.

The family is cosmopolitan, but only a few forms cross the polar circle. Except Africa, where the *Aristolochia-Papilios* are wanting (only Madagascar has one species), the tropics are characterised by their richness in that group and the Kite-Swallowtails, whilst the temperate zone of both hemispheres possesses in *Parnassius* a type which is not met with in the true tropics; *Baronia brevicornis*, indigenous to Guerro, West Mexico, is the most southerly form recalling *Parnassius*.

Whilst in the Old World there are quite a number of genera besides the large comprehensive genus *Papilio*, all the American forms belong to only four genera: *Papilio*, *Euryades*, *Parnassius* and *Baronia*.

1. Genus: **Papilio**, Swallowtails.

Forewing always with median spur (1. submedian), at least one of the discocellulars placed longitudinally; hindwing with precostal cell. All the species have the pupa attached by a girth. The so-called genus *Papilio* falls into 3 divisions, which are sharply separated from one another in the larva, pupa and imago. This natural classification was founded by HORSFIELD in 1856, but not recognised by later authors (ERICH HAASE excepted). The forms of the first group, the *Aristolochia-Papilios*, so tenacious of life, have a strong smell, and are often mimicked by species of the other two divisions, and in consequence of this similarity the models and mimics have been erroneously regarded by some authors as closely allied.

A. *Aristolochia-Papilios*.

Antenna without scales, underneath on both sides with a cavity on each segment. The outer ventral row of spines of the tarsi not separated from the dorsal spines by a spineless longitudinal depression. — Larvae on *Aristolochia*, rarely on allied plants; densely covered with very short hairs, velvety, only the head, the prothoracic plate and the legs being shiny; each segment with a belt of fleshy tubercles, which bear hairs, but no strong spines; the anterior tubercles often prolonged. — Dorsum of the pupa incurved, wing-case strongly expanding sideways; on each side of the abdomen dorsally a row of humps or lobes, which often form an almost unbroken ridge. — Tropical insects, represented in North America by 2 species (*P. philenor* and *polydamus*).

The American *Aristolochia-Papilios* are divided into 2 sharply characterised subdivisions.

Section A.

Body with red spots. Cavities of the antenna very distinct; precostal cell distally widened, cell of the hindwing more or less pointed. — Here belong most of the forms. They are almost all woodland species; some are only found in the shade of the forest. The butterflies are taken in open spaces in the woods, on their outskirts, and on the banks of rivers, where they frequent flowers, or imbibe moisture from the damp sand. The ♂♂ are generally good fliers, while the ♀♀ are mostly slow and heavy on the wing. Some species inhabit marshes, others occur only in dry, sandy places in the woods.

Ascanius-Group.

The species of the *ascanius*-group, with which we begin, have a spatulate tail. The two sexes are similar. The ♂ has on the hindwing a hindmarginal fold, covered with white wool.

columbus.

P. columbus H.-Sch. (= *gundlachianus* Fldr.; *grotei* Blake) (1a). The brightest coloured American *Papilio*, which may be recognised by the brilliant blue bands on the forewing. — The dark ash-grey larva is striped longitudinally, the head and thoracic legs are black; the black longitudinal stripes in part margined with white; the anterior and posterior segments bear long pointed tubercles which are partly white. — Flies in Cuba, and occurs not infrequently in the mountainous eastern part of the island, especially near the coast, where it is met with on flowers, and sometimes also drinking at pools.

ascanius.

P. ascanius Cr. (1a). A broad white band traverses both wings; on the hindwing it is more or less red. — The larva is light brown, and bears pointed tubercles on all the segments. The imago, which hitherto has only been observed in the province of Rio de Janeiro, flies in the neighbourhood of Rio over marshes, where it can only be followed with difficulty and often by wading in the water; the species of *Aristolochia* on which the larva feeds only grows in such situations. According to Mr. J. ARR the species is by no means scarce at Rio de Janeiro in these swamps, but only in exceptional cases goes far from them; and it is on account of this inaccessibility of its haunts that good specimens are not common in collections. Larva October to April.

P. agavus *Drury* (1b). The red anal spot of the hindwing very large, Z-shaped. The abbreviated *agavus*, white band of the hindwing is somewhat variable. Although the species is quite common even in gardens in the neighbourhood of Rio, especially in damp, shady places, we are still ignorant of its early stages. The insect frequents flowers, and is easy to catch. — Minas Geraës southwards to Rio Grande do Sul, westwards to Paraguay and the adjoining parts of Argentina: not extending to the foot of the Andes.

P. proneus *Hbn.* (= *phryneus* *Luc.*) (1b). Both wings with narrow white band, the red sub-*proneus*, marginal spots of the hindwing straight or slightly curved: anal spot not V-shaped. — Minas Geraës to Parana; near Rio only in the Organ Mountains.

P. chamissonia. Both wings with white band, that on the hindwing abbreviated: cell-spot of the hindwing not extending further towards the base than to the 2. median; red anal spot V-shaped. — The larva is brownish black, with an oblique white band, extending laterally from the 6. segment to the tubercle on the 7. The pupal stage lasts three weeks. The butterfly is very common and is one of the earliest spring species (August). From August to April there are at least three generations. — **diodorus** *Hoppl.* *diodorus*, (= *campeiro* *Foett.*) (1b) has entirely white fringes. The breadth of the white band is variable. Minas Geraës: in the interior from São Paulo: Goyaz: Bahia. — The form **chamissonia** (= *ascalus* *Godt.*, *chamissonia*, *echedorus* *Boisd.*, *eurydorus* *Luc.*), described by ESCHSCHOLTZ, occurs near Petropolis, in São Paulo, Parana and S. Catharina. Near Rio itself the species is absent. In this form the fringes are partly black, at least at the extremities of the veins. The specimens with a broad white band on the hindwing may be designated as ab. **bunichus** *Hbn.*: these are especially common in São Paulo and in the Organ Mountains. *bunichus*.

P. perrhebus. Wings entirely without bands. The larva lives on *Aristolochia ciliata*, and bears on all its segments tubercles which are partly white and partly yellow: an oblique band on the 6. and 7. segment is yellow. We know two geographical forms of this species. — In Brazil, from São Paulo to Rio Grande do Sul, in Paraguay, and in the neighbouring parts of Argentina, occurs a dark form, in which the head, the palpi, and the submarginal spots on the upper surface of the hindwing are distinctly red; this is **perrhebus** *Boisd.* (1a). — The form from Buenos Aires, the province of Entre Rios, and Uruguay, is **damocrates** *Guen.* It is much paler: the head and palpi are black, and the submarginal spots on the upper surface of the hindwing are not bright red. The species is especially common near rivers. *perrhebus*, *damocrates*.

P. phalaecus *Hew.* (1b). The only *Aristolochia*-Papilio with a spatulate tail which has hitherto been found in tropical America between Costa Rica and Paraguay. The body is very hairy. The white band, which traverses both wings, is intersected by black veins. — Eastern Ecuador. *phalaecus*.

P. photinus *Doubl.* (1d). Upper surface with blue gloss, especially in the ♂. Wings without bands: hindwing with two rows of red spots. — Mexico to Costa Rica: a common species. *photinus*.

P. alopis *Godm. & Salv.* Spots on the hindwing smaller than in *P. photinus*, at least partly white, those of the inner row very small, partially wanting. — West Mexico: Nicaragua. *alopis*.

P. dares *Hew.* (1d). Only one ♀ known, which is in the British Museum (coll. HEWITSON). Tail short; forewing with a small white spot on the disk; hindwing with two rows of red spots, which are larger than in *photinus*. — Nicaragua. *dares*.

P. montezuma *Westw.* (1a). Forewing without band. Hindwing with a row of red submarginal spots. — Mexico to Nicaragua: one of the commonest species. *montezuma*.

Aeneas-Group.

The following forms, which have white marginal spots, we unite as the *aeneas*-group. The species are partly hard to differentiate, especially as the two sexes are often very unlike. Very little is known about the earlier stages. Many of the species inhabit marshy woods, where the larvae live on *Aristolochia*. In consequence of the inaccessibility of these forests, quite a number of forms are still very rare in collections, and there are certainly still some species which have hitherto escaped the net. Scent-organ of the ♂ mostly with white wool, more rarely with black scales.

P. hahneli *Stgr.* (1c). One of the most remarkable of the American *Papilios*, and doubtless the best discovery of the successful collector after whom the species is named. Tailed. Forewing with three yellow-grey bands or patches; hindwing with area of the same colour, occupying the greater part of the wing. — Massauary, near Maués, Amazon River. Collecting in the neighbourhood of the Amazon, from Pará to the foot of the Andes, seems to be more difficult nowadays than formerly. It is true the steamboat takes the collector from place to place, but in the neighbourhood of the larger settlements there is no longer much for him to seek, and living has become extraordinarily expensive. And it is difficult to find a place near the forest fit to live in and secure against flagrant robbery, and the collector is very

dependent upon chance in this respect. — *P. hahneli* has not been again discovered; but so many Amazon species are represented in collections by only a few specimens that it must be assumed that the real haunts of this insect are not yet known.

triopas. **P. triopas.** Forewing with two bands. Hindwing small, recalling the Old World *Troides* (= Ornithoptera). The form from the Lower Amazon and Dutch and French Guiana is the commoner in collections; this is **triopas** *Godt.* (1c). — The form from British Guiana, which is called **mithras** *Grose-Smith*, has smaller and paler spots. — A woodland species like its allies. The ♀ flies slowly near the ground, whilst the ♂ has a swifter flight and generally remains at a considerable height.

chabrias. **P. chabrias** *Hew.* (1c). The forewing in both sexes has a row of submarginal spots, which however are often wanting in the ♀. The central area of the hindwing is situated somewhat further towards the margin than in *P. triopas*, consequently the cell-spot is smaller. — Upper Amazon, from Ega to Ecuador and Peru. Neither this nor the preceding species has so far been found in the large district between Obidos and Ega.

coelus. **P. coelus** *Boisd.* (♂ = *vercingetorix* *Oberth.*) (1d). Forewing with a white spot, obsolete at the margins, which fills up the extremity of the cell, and extends on to the disc. Hindwing with red band on the disc, in the ♂ composed of four spots, in the ♀ of six. — French Guiana, the ♂ in OBERTHÜR's Collection, one ♀ in the Paris Museum.

quadratus. **P. quadratus.** Forewing long; hindwing in both sexes with a band consisting of yellowish white spots on the disc close to the cell, and on the under surface in addition with a red spot at the hind angle. — In the name-typical form **quadratus** *Stgr.* (2b), of which only one ♂ is known, the forewing has a yellowish white spot before the 2. median. The specimen was taken near Manicoré on the Rio Madeira. — In **spoliatus** *Stgr.* neither sex has a spot on the forewing. Upper Amazon; rather rare, near Iquitos, Pebas, S. Paulo de Olivença and other places.

pizarro. **P. pizarro** *Stgr.* Abdomen in the ♂ quite black; in the ♀ with a red spot before the apex on the underside. Forewing without spots, also none in the fringes. Hindwing with whitish yellow area, which in the ♂ consists of three or four spots, in the ♀ of three to six. — Upper Amazon.

steinbachi. **P. steinbachi** *Rothsch.* (2a). This fine species has recently been discovered by J. STEINBACH in the eastern part of Bolivia. Forewing in both sexes with a large white spot before hindmargin; hindwing with a red band. Santa Cruz de la Sierra, between the end of February and June; also received from Mapiri.

klagesi. **P. klagesi** *Ehrm.* (2a). The ♂ of this peculiar little *Papilio* is not known; only four ♀♀ have been found. The hinder angle of the cell on the forewing is quite rounded; neither the fore- nor the hindwing has distinct fringe-spots. Forewing with a white band before the hindmargin; hindwing with a band composed of red spots. Abdomen entirely black, even at the tip. — Suapure, on the Caura, Orinoco, taken by S. M. KLAGES and his brother in February and March, 1899. Perhaps the species belongs to the *lysander*-group.

aeneas. **P. aeneas.** Palpi black, as in the preceding species. Abdomen in the ♀ with a small red spot beneath before the tip. Sexes very different. ♂ with green spot on the forewing; hindwing with red non-opalescent central area, not extending further towards the base than to the middle of the cell. In the ♀ the forewing is either entirely black, or bears one or more white obsolete spots on the margins. Guiana; Upper Orinoco; Amazon from Pará upwards; eastern slopes of the Andes of Peru and Bolivia. Several geographical forms. A woodland species, about whose earlier stages nothing is known. — **aeneas** *L.* (= *gargasus* *Hbn.*; *aeneides* *Esp.*; *bochus* *Luc.*) (2b) inhabits the three Guianas. The green spot of the ♂ is removed from the cell, and is usually wider before than behind the submedian vein. The ♀ occurs in two forms: ♀-f. **specularis** *R. & J.* has on the forewing a large white spot before the 1. median, and usually several smaller ones, of which one is in the cell. In the second form, ♀-f. **dido** *R. & J.*, the forewing has no white spots. — **marcius** *Hbn.* (2b) is the subspecies from the Lower Amazon. The ♂ is similar to that of *aeneas*, but the last red spot but one on the under surface is larger. We know only one form of the ♀; in this the white spot of the forewing usually extends to the 2. median, and the median red spots of the hindwing are close together. — **linus** *R. & J.* from the Middle Amazon (Santarem, Obidos, Massauary) was unknown to Bates. The red spots on the underside of the hindwing of the ♂ are paler than in the last subspecies, and stand closer together and nearer to the cell. In the ♀ the red spots are united into an uninterrupted band. — **damis** *R. & J.* inhabits East Peru. The green spot of the ♂ is larger than in the preceding forms, and the spots on the under surface of the hindwing are reddish white. The ♀ occurs in two forms: ♀-f. **pyromelas** *R. & J.* (2b) has entirely black forewing; the red spots of the hindwing are confluent, forming a band. In ♀-f. **eucharis** *R. & J.* the forewing has a large white area with undefined margins. — **locris** *R. & J.* is in the ♂ similar to the last subspecies, but the red spots on the hindwing are larger. The ♀ has always a white area on the forewing; the red spots on the hindwing are separated

from one another, the spot before the 1. median being the largest. Bolivia. — **bolivar** *Hew.* (2a) inhabits *bolivar*. the Upper Amazon and the Orinoco. The red area on the hindwing of the ♂ is small, and is whitish yellow on the under surface. Forewing of the ♀ black, with white spots on the fringes; hindwing with a whitish yellow area.

P. dardanus *Fabr.* (= *tros Fabr.*; *opleus Godt.*) (2c). Tailed. Forewing in the ♂ with a green *dardanus*. spot before the hindmargin; the red area of the hindwing not opalescent. ♀ with a white area on the forewing, with obsolete margins. — An exclusively Brazilian species, which hitherto is only known from the province of Rio de Janeiro.

P. orellana *Hew.* (2c). The most beautiful species of the *aeneas*-group. Forewing in both sexes *orellana*. black, bluish in a side-view, with white spots on the fringes. Hindwing in the ♂ with a very large red area, not opalescent; in the ♀ with a broad red band. — Upper Amazon, from Ega to Iquitos.

P. sesostris. Forewing in the ♂ with very large green area which touches the cell; hindwing either black or with a red spot before the hindmargin. Forewing of the ♀ with at least two white spots; the red band on the hindwing generally broad. Scent-organ of the ♂ with white wool, except at the base, which is black. Mexico to the Amazon, in three subspecies. — The northern form is **zestos** *Gray* (3a). The ♂ *zestos*. has always a red spot on the hindwing. In the ♀ the band on the upper surface of the hindwing is bright red. South Mexico to Costa Rica. — **tarquinius** *Boisd.* occurs from Panama to Ecuador and North Venezuela. *tarquinius*. The upper surface of the hindwing of the ♂ has mostly a red spot as in *zestos*, but the band on the under surface is more obliquely placed. In the ♀ the second white spot on the forewing is somewhat larger than in *zestos*, and the band on the under surface of the hindwing is nearer to the cell. — **sesostris** *Cr.* *sesostris*. (♀ = *tullus Cr.*) (2d) has very rarely a red spot on the upper surface of the hindwing of the ♂, and the spots on the under surface are placed somewhat nearer to the margin. In the ♀ the two white spots on the forewing are widely separated from the cell. Orinoco; Guiana; Pará to Peru; Bolivia; Goyaz.

This species is a strong flier, which appears never to leave the woods.

P. childrenae. The green area of the ♂ is larger than in *P. sesostris*, covering also a part of the cell. The ♀ has a transverse row of spots before the apex of the forewing, as well as two spots on the disc posteriorly. Distributed from Guatemala to Ecuador in two subspecies. — **childrenae** *Gray* (3a) is the *childrenae*. Central American form, which is found from Guatemala to Panama. Forewing of the ♂ with a white spot before the apex. Band on the hindwing of the ♀ bright red. — **oedippus** *Luc.* has in the ♂ no white spot *oedippus*. before the apex of the forewing, or only a very small one. In the ♀ the band on the hindwing is a somewhat yellowish red on the inner side. Colombia and Ecuador.

P. erlaces. Palpi always black. Fringes of both wings spotted with white. Forewing of the ♂ with a gray-green spot before the hindmargin; hindwing with three red, strongly opalescent spots. In the ♀ the margin of the 8. abdominal segment red all round; forewing with large cell-spot and 2 or 3 discal spots. Ecuador to Bolivia. — **lacydes** *Hew.* (♀ = *equestris Oberth.*) (3b) has rarely a white spot on the *lacydes*. forewing of the ♂, the spots on the under surface of the hindwing small, almost entirely white. In the ♀ the cell-spot of the forewing large; band of the hindwing white. In Eastern Ecuador. — **xanthias** *R. & J.* *xanthias*. (3b). Forewing of the ♂ almost always with one or two white spots; spots on the under surface of the hindwing varying from white to red. Cell-spot of the ♀ triangular, second discal spot larger than the first; band on the hindwing pale yellow. North-east Peru, southwards to Huánuco. — **erlaces** *Gray* (3a) is the *erlaces*. most southerly form. It inhabits South-east Peru, Bolivia and North Argentina. Forewing of the ♂ rarely without large white spots; hindwing on the underside with 5—7 red spots. Forewing of the ♀ usually with 3 white spots besides the cell-spot; band on the hindwing red.

P. burchellanus *Westw.* (= *socama Schaus*). Sexes similar. Palpi black. Forewing black, only with *burchellanus*. fringe-spots. Hindwing with a row of separated red discal spots. Resembles *P. panthous Cr.* (3b), which however has red marginal spots. — In the interior of Brazil: Farinhapodre, Goyaz; rare in collections. On pl. 3 a specimen of *panthous* is figured by oversight as *burchellanus*.

P. drucei *Bthr.* (♀ = *opalinus Bthr.*) (3b). Palpi generally black, sometimes red. Forewing in the ♂ *drucei*. with a green spot, separated from the cell; in the ♀ unicolorous, but the fringes spotted. Hindwing in the ♂ with 3, occasionally 4, opalescent spots; in the ♀ with a band composed of 5—7 spots, sometimes rather strongly opalescent. Eighth abdominal segment of the ♀ edged with red all round. — Upper and Middle Amazon, and the eastern slopes of the Andes from Ecuador to Bolivia.

P. cutorina *Stgr.* (♀ = *mazeppa Grose-Smith*) (3c). Palpi red. Forewing of the ♂ with a green *cutorina*. spot; in the ♀ without spot, the fringes spotted with white. Hindwing in the ♂ with two contiguous red spots on the upper surface, the spots on the under surface yellowish white; in the ♀ the wing has a yellowish white band on both surfaces; 2. and 3. radials close together, the transverse vein between them not oblique. — Upper Amazon and slopes of the Andes of Ecuador and Peru.

P. phosphorus. Palpi red. Forewing somewhat transparent distally; ♂ with dirty-green spot; hindwing rather strongly dentate, the red spots remote from the cell. Tibiae armed with spines, not thickened.

♀ with grey-green area on the forewing before the hindmargin, which occurs in no other ♀ of the *Aristolochia*-Papilios. Colombia; Guiana; Lower Amazon; East Peru; perhaps more widely distributed. A rare insect; probably a swamp species which escapes observation. Two subspecies: — *phosphorus* *Bates* (3c) occurs in British Guiana and at the Lower Amazon. The green spot on the forewing of the ♂ is narrow and separated from the cell. The forewing of the ♀ has a row of 4 white spots on the grey-green area (always?). — *gratianus* *Heur.* (3c) inhabits Colombia and East Peru. The green spot on the forewing of the ♂ is much broader than in the preceding form; hindwing with only 3, or rarely 4, red spots, the series not curved. Forewing of the ♀ with two white spots; the posterior spots of the hindwing large.

P. vertumnus. Palpi red. Forewing in the ♂ with a green spot; in the ♀ unicolorous or spotted with white. Hindwing of the ♂ with triangular red area, which consists of 3 or 4 spots, of which the posterior one is usually the longest; in the ♀ with a broad red band, consisting of 5—7 spots, of which the four posterior ones are more or less completely connected. One of the commonest species, which is often met with in the woods, settling in damp places at the edge of the brooks. Distributed from Colombia to Bolivia, Guiana and Pará, but not yet found in Venezuela and Brazil proper.*) — *yuracares* *R. & J.* is the Bolivian subspecies. Only the ♂ is known. The green spot touches the cell, and encloses at least one white spot. Hindwing with at least 4 red spots, of which the anterior two are separated; 5 small spots on the under surface. Found by J. STEINBACH from January to April. — *autumnus* *Stgr.* (3d). ♂: the green spot larger than in the preceding; hindwing with 3 red spots; 4 small red spots on the under surface. ♀: forewing with very large yellowish area; cell-spot especially large. East Peru: Chanchamayo; undoubtedly extending further south. — *bogotanus* *Fldr.* Only the ♂ known to us. Forewing without white spot; hindwing with rather large red area, the spots on the under surface small. Rio Palcazu northwards to "Bogotá". — *diceros* *Gray* (= *cixius* *Gray*; ♂ = *cutora* *Gray*). ♂: forewing usually without white spots in the green area; when present they are transverse, and somewhat obliquely placed; red area of the hindwing smaller than in the preceding forms, the spots on the under surface on the contrary generally larger. ♀: forewing with chalky-white area, consisting of 2—4 spots, occasionally only one double spot present. Pará to Iquitos. — *vertumnus* *Cr.* (3c) is distinguished in the ♂ from all the other forms of the species by the short-haired middle and hind tibiae. The ♀ as in the Amazon form, or the forewing with only one white spot, of which there is sometimes merely an indication. Guiana.

P. lycimenes. ♂: somewhat smaller than *P. vertumnus*, the red area of the hindwing less triangular and its last spot smaller. ♀: forewing slightly transparent at the apex; the spots somewhat yellowish, not pure white, the cell-spot usually large and extended across the cell; band of the hindwing less bright red than in *P. vertumnus*. Tibiae of the ♂ not thickened. Guatemala to Ecuador, in several subspecies. — *lycimenes* *Boisd.* is the Central American form. Forewing with a large green spot, which almost always encloses at least one white spot; often a spot in the cell; hindwing with 4—6 red spots. In the ♀ the yellowish white spot before the 1. median much larger than the preceding one; band of the hindwing broad, almost always a uniform bright red. Guatemala to Panama; also on the small islands on the west coast of the Republic of Panama. — *erythrus* *R. & J.* (3d). ♂: the green spot broader than in the preceding form, reaching to the hindmargin of the wing. ♀: the spot before the 1. median of the forewing larger than in the preceding form; the band of the hindwing paler. Central and East Colombia and North Venezuela. — *paralius* *R. & J.* (4a). Small. ♂: forewing with round yellow-white spot before the 2. median; band of the hindwing short and narrow. ♀: spot on the forewing purer white than in the previous subspecies, the cell-spot reduced; the spot before the 2. median the largest; band of the hindwing almost straight. West Ecuador.

P. erithalion. ♂: tibiae not thickened. Hindwing without distinct red spot behind the 2. median on the upper surface. ♀: the spot before the 1. median of the forewing smaller than the preceding spot; band on the hindwing broad, pale on the innerside. Costa Rica to North Venezuela. — *zeuxis* *Luc.* (= *rhameses* *Doubl.*, *rhesus* *Koll.*, *rhameses* *Fldr.*, *abilis* *Fldr.*, *rhameses* *Boisd.*) (4a). ♂: the green area much narrowed anteriorly, enclosing a large white spot before the 2. median; hindwing with 2 or 3 small red spots. ♀: the posterior spot of the forewing larger than the preceding one. North Venezuela and eastern side of the Cordillera of Bogotá. — *erithalion* *Boisd.* (4a) from Central Colombia (Rio Magdalena) has in the ♂ rarely a white spot on the forewing, which is placed before the 1. median or between the radials. ♀: the spot before the 1. median smaller than the preceding one; generally a few small spots outside the cell. — *cauca* *Oberth.* ♂: the green area of the forewing wanting or merely indicated. ♀: band on the hindwing narrow, curved, separated from the cell. Cauca valley. — *sadyattes* *Druce* (4a). ♂: the green area very variable, generally reduced, often wanting; all specimens with at least one white spot, which is placed before or behind the 3. radial, often a green spot in the cell. ♀: band of the hindwing almost unicolorous bright red. Costa Rica to Panama.

*) Faunistically we understand by Brazil the eastern part of the continent from the province of Goyaz and Pernambuco to Rio Grande do Sul. In this district we find a fauna which is quite different in many respects from that of the rest of South America.

P. polyzelus. ♂ ♀: forewing without green area, rarely with a small white spot in the ♂; band of the hindwing narrow, nearer to the margin than to the cell. Mexico to Honduras; common. — In *polyzelus polyzelus* Fldr. (= *candezei* Borre) (4a), from East and South Mexico, Guatemala and Honduras, the tibiae of the ♂ are not thickened, resembling those of the ♀. — In *trichopus* R. & J., from West Mexico, the tibiae of the ♂ are thickened and bear fine hairs, as well as the 1. segment of the tarsi; the band of the hindwing is on the whole broader than in the preceding.

P. iphidamas. ♂: tibiae and 1. segment of the tarsi thickened and covered with fine hairs. ♀: forewing at the margin less deep black than in *P. erithalion*. Mexico to Ecuador and North Venezuela. A common species, which is not easy to distinguish from *P. erithalion* and *P. lycimenes*, and is consequently often mistaken for them. — **iphidamas** F. (= *panares* Gray, *achelous* Hopff., *incandescens* Bthr.) is the *iphidamas*. Central American form. ♂: forewing distally not transparent; the green area usually reduced, always enclosing one or two white spots; often a white spot in the cell; band of the hindwing gradually widened posteriorly, a narrow spot behind the 2. median. ♀: cell-spot on the forewing large, usually some small spots beyond the cell; the spot before the 2. median smaller than the preceding one, or obliquely cut off towards the base; band of the hindwing almost unicolorous bright red, its inner margin evenly curved. South Mexico to Panama. — **phalias** R. & J. (4b). ♂: the green area widest posteriorly, reaching to the hindmargin; hindwing with three red spots separate from the cell. ♀: forewing slightly transparent at the apex; cell-spot very large; the spot before the 1. median much larger than the preceding one; band of the hindwing very broad, pale on the inner side. Colombia: Magdalena Valley and Cordillera of Bogotá. — **elatos** R. & J. ♂: the green area smaller than in the preceding subspecies; hindwing with three small red spots. Cauca Valley. — **calogyna** R. & J. (4b). ♂: forewing exteriorly somewhat more thickly scaled than in *phalias* and *elatos*, usually a white spot before the 2. median; hindwing with 3 small red spots, close together. ♀: the spot before the 1. median of the forewing larger than the preceding one; band of the hindwing bright red, its inner margin usually white. West Ecuador and west coast of Colombia. — **teneates** R. & J. ♂: the green area narrow, separated from the cell, usually enclosing one or two white spots. ♀ not known with certainty. North Venezuela and North Colombia.

P. anchises. Apex of the forewing distinctly, though only slightly, transparent. ♂: tibiae and 1. segment of the tarsi thickened and covered with fine hairs; hindwing blue, strongly iridescent. ♀: the spot before the 1. median larger than the preceding spot. Colombia to South Brazil and Paraguay. The black-brown larva has on the first and on the penultimate segment two dorsal spots, and on each of the thoracic segments and the 8. and 9. abdominals one lateral spot; on the 6. and 7. segments is an oblique lateral band, sometimes broken up into spots. The dorsal humps on the pupa are three-edged and rather small. — **alyattes** Fldr. (4b, c). ♂: the green area separate from the cell, enclosing at least one white spot, placed before the 2. median, many specimens with a second spot before the 1. median; the last spot on the inner surface of the hindwing larger than in *P. iphidamas phalias*. ♀: cell-spot narrow; band of the hindwing entering the end of the cell, black outer margin wider than in *iphidamas*. Colombia, in the Magdalena Valley and probably on both sides of the Cordillera of Bogotá. — **serapis** Boisd. ♂: the green area very long and narrow, only a little wider posteriorly than anteriorly; band of the hindwing consisting of at least five spots. ♀: cell-spot large, almost triangular, the spot before the 1. median very large and the band on the hindwing very broad. North Colombia. The distribution of *serapis* and *alyattes* is only very imperfectly known. — **osyris** Fldr. (= *xenares* Fldr., *toxaris* Fldr., *severus* Fldr.) (4b). ♂: the green area of the forewing and the band of the hindwing broader than in *serapis*. ♀: the cell-spot usually extending transversely across the cell; the band of the hindwing very little paler internally than externally. Venezuela. — **cymochles** Doubl. (= *anacharsis* Fldr.). ♂: forewing with one to three spots; hindwing with three, occasionally four, red spots. ♀: spots of the forewing purer white than in the preceding subspecies; cell-spot small; band of the hindwing almost unicolorous red, broadest in the middle. Trinidad, Paria Peninsula and Orinoco. — **anchises** L. (= *telmosis* Bates, *toxaris* Fldr.) (4c). ♂: green area narrow, sometimes wanting; hindwing more strongly dentate than in the other forms, the red spots usually widely separated. ♀: forewing without cell-spot or with merely a cell-streak, often without any spots; hindwing with a row of six or seven red spots, separated from one another. Dutch and French Guiana. — **thelios** Gray (= *hierocles* Gray, *aglaope* Gray [partim]) (5a). ♂: the green area triangular, enclosing one or two rather large white spots; hindwing with three or four red spots, of which the one before the 2. median is the largest. ♀: forewing with at least two white spots, the one before the 2. median the largest; hindwing with seven or eight separated spots. Lower Amazon, from Pará to Santarem; occurs in dry, sandy places in the forest, not in the swamps. — **etias** R. & J. ♂: palpi sometimes almost without red scales; hindwing without a red spot before the 1. radial, or this spot very small. ♀: spots on the forewing pure white, cell-spot very small, two large white spots before and behind the 1. median. East Bolivia, found by J. STEINBACH in December, January and April-May. — **orbignyanus** Luc. (4c). The red band on the hindwing of the ♂ is uniformly curved and becomes gradually narrower anteriorly; the forewing has at least one large white spot. In the ♀ a spot in the cell of the forewing and at least two on the disc; hindwing with a band from

the subcostal to the hindmargin. Paraguay; northern part of Entre Rios; Matto Grosso; Goyaz. — *foetterlei*. **foetterlei** *H. & J.* (4c). White spots on the forewing of both sexes very large and the band on the hindwing very broad. In the interior of the province of S'ao Paulo.

hedae. **P. hedae** *Foett.* (5a). Only one ♀ known; palpi red; on the forewing a very broad white band, with the edges finely crenulating for the most part pale red, whitish towards the base, the marginal spots slightly yellowish. Icarahy, near Rio de Janeiro.

nephalion. **P. nephalion** *Godt.* (= *osymanduas Hbn.*, *proteus Boisd.*, *stilbon Koll.*, *haemon Fldr.*) (4d, 2d). Marginal tooth at the 3. radial of the hindwing projecting more than in *P. anchises* *L.* Forewing in both sexes with two or three large white spots. Hindwing of the ♂ with three red spots on the upper surface, and usually a fourth separated from them; in the ♀ with a band composed of five spots, and commonly a sixth or even a seventh (very small) spot. The larva is brown-black, with a yellow longitudinal stripe on the sides. The butterfly is not rare, and occurs in Brazil proper southwards to Rio Grande do Sul, as well as in Matto Grosso, Paraguay and the adjoining parts of Argentina. A forest-species.

Lysander-Group.

The following species, which form the *lysander*-group, have red instead of white marginal spots. The hind tibiae of the ♂ are always dilated and with fine hairs. The species occur together with those of the *aeneas*-group, and are sometimes very common. The red spots on the hindwing have no opalescent gloss.

P. panthonus. Forewing in both sexes black, with reddish marginal spots; hindwing with a regularly curved row of separated red spots. Scent-wool white. Guiana and Brazil, in two subspecies. —

numa. **numa** *Boisd.* (= *jaguaræ Foett.*), from Brazil (São Paulo and Minas Geraës), has small, widely separated spots. — In **panthonus** *Cr.* (3b, 5a), from the three Guianas, the spots on the hindwing are somewhat larger. This form most probably occurs also on the north side of the Lower Amazon.

aglaope. **P. aglaope** *Gray.* ♂: forewing with a blue-green band, which has at least one large white spot, placed before the 2. median; hindwing with four spots, separate from the cell. The ♀ occurs in two forms: *lysimagus*. ♀-f. **lysimagus** *Hour.* has on the forewing a straight row of three spots; ♀-f. **callicles** *Bates* has on the *callicles*. forewing a large spot behind the 1. median, a smaller one before it, and a streak in the cell. — This species is rather rare; it has hitherto only been taken on the Lower Amazon, in South-east Peru and in *euristeus*. eastern Bolivia. — GRAMER has figured as **euristeus** a butterfly from Surinam which perhaps also belongs here, but the figure is too bad to be referred with certainty to any one species. Is it the ♂ of *klagesi* *Ehrm.*?

lysander. **P. lysander** *Cr.* (= *phrynichus Fldr.*). ♂ with white scent-wool in the fold of the hindwing. Outer margin of the forewing in the ♀ rounded; the last two red spots on the hindwing separated, standing *parsodes*. obliquely one under the other; ♀-f. **parsodes** *Gray* (= *sonoria Gray*) has a large white area on the *arbates*. forewing, composed of several spots; in the ♀-f. **arbates** *Stoll* (= *anaximenes Fldr.*) the forewing has only *brissonius*. one white spot; whilst in the ♀-f. **brissonius** *Gray* (5b) the forewing has no white spot at all. A ♂ with *bari*. yellow instead of red spots on the forewing has been described as ab. **bari** *Oberth.* — This species is known from the whole of the Amazon, East Peru and East Ecuador, as well as from the Guianas and Bogotá; it has not hitherto been found in Bolivia nor in Brazil proper.

P. echemon resembles the preceding species; but the forewing is narrower, the outer margin being incurved in the ♂, straight in the ♀, the cell of the forewing is narrower at its extremity, the 3. radial of the hindwing is usually much nearer to the 2. radial than to the 1. median, and the fold of the hindwing in the ♂ has no white wool. On the Lower and Middle Amazon and in the Guianas. Two subspecies. — *echemon*. HÜBNER's figures agree with the form from the Amazon: in the ♂ **echemon** *Hbn.* (= *echelus Hbn.*) the blue-green band of the forewing is narrow and placed, like the white band of the ♀, separate from the cell. *ergeteles*. From Pará to Santarem. — **ergeteles** *Gray* (= *echephron Bates*, *echion Bates*, *polyphron Fldr.*) has in the ♂ a broader blue-green band, and in the ♀ the white spot before the 2. median is contiguous to the cell, or the forewing is without spots. ♀-f. **ergeteles** *Gray* is the form of the ♀ with a white area; in the ♀-f. *pisander*. **pisander** *Fldr.* the white spots are only indicated by a few white scales. From Obidos to the Rio Negro, north side of the Amazon; Guiana. — Whilst *P. lysander* is a swamp species and flies heavily over the wettest places in the shade of the woods, *P. echemon* prefers drier localities in the woods, and is often found on the flowers which hang down from the trees over the narrow paths in the forests.

P. neophilus. In the ♂ the cell of the hindwing on the upper surface is red nearly to the base. In both sexes the 2. median of the hindwing arises at the same height as the subcostal. Colombia to Paraguay and South Brazil, but not from Rio de Janeiro to Pernambuco, where *P. zacyanthus* occurs. — *eurybates*. **eurybates** *Gray* (= *euphales Gray*) (5c). ♂ with large white spots on the forewing; the red spots on the hindwing not blackish towards the base, with the exception of the first and last, the middle ones touching the cell on the under surface. ♀ with 2 white spots between the 3. radial and 2. median, rarely with the spots merely indicated, the red band on the hindwing broad. São Paulo and Matto Grosso; Paraguay

(transition to the next form). — **consus** *R. & J.* ♂: the green area between the 2. median longer than *consus*. broad, the white spot before the 2. median rounded, usually smaller than the preceding spot; on the hindwing the cell-spot and the part of the discal spot next to the cell are blackish red; the spots on the underside smaller than in *eurybates*. In the ♀ the white spots are large; the band on the hindwing is usually separate from the cell. East Bolivia. — **olivencius** *Bates* (5c). White spots on the forewing in *olivencius*. both sexes small or indistinct; the red spots on the hindwing in the ♂ long on the upper surface, short on the under. In the ♀-ab. **anaximenes** *Fldr.* the spots of the hindwing are very long. East Peru to the *anaximenes*. Cordillera of Bogotá, and on the Amazon downwards to the Rio Negro. — **ecbolius** *R. & J.* ♂: the green *ecbolius* spot behind the 2. median of the forewing about as long as broad, the white spot before this vein distinct and transverse as the preceding spot; the red spots on the hindwing shorter than in *olivencius*. In the ♀ the forewing has a large white spot before the 2. median and another before the 1. median, the outer margin of these spots almost parallel with the outer margin of the wing. Lower Amazon, upwards to Obidos. — **neophilus** *Hbn.* (= *gargasus* *Hbn.* [partim], *aeneides* *Esp.* [partim]), the first described form, *neophilus*. inhabits the Guianas. ♂: the green area is broader and the red spots on the underside of the hindwing smaller than in the ♂ of *ecbolius*. In the ♀ there are no white spots on the forewing, or they are small, rarely are they large; the third spot on the hindwing longer than the others, the spots on the upper surface further from the margin than in *olivencius*. — **parianus** *R. & J.* from Trinidad, Cumana and the Orinoco. *parianus*. The green area of the ♂ behind the 2. median longer than it is broad, enclosing three white spots; the spots on the under surface of the hindwing paler than in the Bolivian form, to which *parianus* comes near, the spot before the 2. median placed close to the cell. In the ♀ the band of the hindwing is somewhat more curved than in the other subspecies; the narrow middle spots are placed close to the cell on both surfaces.

P. zacyanthus. Band on the forewing in the ♂ greenish blue. The spots on the under surface of the hindwing of the ♀ paler than in *P. neophilus*. Brazil, from Rio de Janeiro northwards, in two geographical forms. Not rare in damp localities overgrown with bushes. The larva is grey-brown, with a yellow lateral stripe. — The form from the province of Rio de Janeiro, **zacyanthus** *F.* (5b), occurs in the *zacyanthus*. neighbourhood of the town of Rio, but is much rarer than *P. nephalion*. The forewing is not transparent at the apex; the ♀ has a spot in the cell of the forewing. — The northern form, from Pernambuco, Bahia and Rio Tapajos, is **polymetus** *Godt.* (5b). The forewing is transparent at the apex and the ♀ has no spot *polymetus*. in the cell, or only a very small one.

eurymedes ^{*new name*} **P. arcas.** In the ♂ the cell of the hindwing above is red from about the middle; in the ♀ the forewing has a large white spot placed obliquely across the cell. Mexico to the Guianas and Colombia, not found further south. — **mylotes** *Bates* (= *docimus* *Gray*, *caleli* *Reak.*, *tonila* *Reak.*, *alcamedes* *Fldr.*, *mylotes*. *aristomenes* *Fldr.*) (5d). ♂: the green spot before the 1. median long and usually enclosing a white spot; the cell mostly also with a white or green spot, no green streak at the hindmargin. The band on the hindwing in the ♀ separate from the cell and bright red on both surfaces. Mexico to Costa Rica; very common in the lowlands. — **mycale** *Godm. & Salv.*, from Panama and the small islands on the Pacific coast *mycale*. of that Republic, forms a transition from the preceding to the following form. In the ♂ the green area before the 2. median is always large; the cell-spot on the hindwing and the adjoining parts of the discal spot are tinged with brown. The band on the hindwing of the ♀ is bright red and usually placed close to the cell. — **arriphus** *Boisd.* The forewing of the ♂ has almost always a green spot also before the *arriphus*. 1. median; hindwing with a cell-spot on the upper surface, the band sometimes pale and narrow: ♂-ab. **agathokles** *Koll.* In the ♀ the band on the hindwing is pale red and includes also the extremity of the *agathokles*. cell. Colombia, from the Rio Magdalena and Rio Meta; common in "Bogotá" collections. — **antheas** *antheas*. *R. & J.* The green band of the ♂ reduced, no spot before the 1. median; the band of the hindwing usually very pale, in the ♀ likewise paler than in *arriphus* and mostly shorter. Cauca Valley. — **arcas** *Cr.* *arcas*. (♂ = *eurymedes* *Cr.*) from Venezuela and Guiana. The red band of the hindwing in both sexes is broader than in the other subspecies; in the ♂ the extremity of the cell of the hindwing is red also beneath, and in the ♀ the cell-spot is much larger than in *arriphus*.

P. timias. Both sexes with two large white spots on the forewing, in the ♂ placed in the green area; red cell-spot on the hindwing in the ♂ large; ♀ with a rather small cell-spot or none at all. West Ecuador, from Guayaquil upwards. Many northern species occur in this district which are wanting in East Ecuador and Peru. — GRAY'S **timias** (5d), whose ♀ was named *bimaculatus* by HEWITSON, occurs about *timias*. Guayaquil and in the neighbouring districts. The cell of the forewing in the ♂ has no distinct green spot; the first spot on the under surface of the hindwing is at least as large as the last. In the ♀ also there is no distinct cell-spot on the forewing and the discal spots are small. — **potone** *R. & J.* has in both sexes *potone*. a distinct cell-spot on the forewing. Paramba and Ambato, taken by ROSENBERG at a height of 3500 ft.

Section B.

The following *Aristolochia*-Papilios are very different from the preceding groups. The body is never spotted with bright red, and the wings never have bright red spots or bands. The antennae have no deep sensory grooves

and their terminal segment is very short. The cell of the hindwing is rounded at the apex and its lower angle is at least as large as the upper. The scent-organ on the hindwing of the ♂ is never woolly and the tibiae are never thickened. — The larva bears on the first thoracic segment strongly elongated fleshy protuberances, and the dorsal humps of the pupa are narrow, laterally compressed and rather long.

Polydamas-Group.

This *polydamas*-group also differs essentially in habits from the red-spotted butterflies. They are inhabitants of the open country, seldom met with in the shade of the forest. The ♂♂, which are quick fliers, are fond of resting on damp sand or mud to imbibe the moisture, whilst the ♀♀ visit several common species of flowers.

P. philenor is a well-known North American butterfly, distinguished by the bright green or blue gloss of the outer part of the hindwing beneath. Its original home was undoubtedly the Southern Atlantic States, whence it has spread to Mexico and again in the west as far as Northern California. In the central part of the United States, from Colorado northwards, the species is absent; in the east, on the contrary, it extends as far as the south of Canada, where it is met with from time to time as an immigrant. Its distribution northwards, in places where the original food-plant (*Aristolochia serpentaria*) is not found, has

orsua. been made possible by the cultivation of *Aristolochia siphon* as an ornamental plant. — **orsua** *Godm. & Salv.*
philenor. is a small tailless form from the Tres Marias Islands with strongly glossy hindwing. — **philenor** *L.* (= astinous *Drury*) (6a) inhabits the United States and Mexico. The species varies geographically but little, yet some of the Mexican specimens are tailless, which seems never to occur in North America. This
acauda. ab. mex. **acauda** *Oberth.* (= nezahualcoyotl *Streck.*, corbis *Godm. & Salv.*) occurs together with ordinary
wasmuthi. specimens. As ab. **wasmuthi** *Weeks* a colour variety is described which recalls the celebrated ab. *calverleyi* of *P. polyxenes* *Fabr.* In this aberration the marginal spots are enlarged into a broad band. Specimens
obsoleta. without submarginal spots on the upper surface are ab. **obsoleta** *Ehrm.* The species has several generations in the Southern States. The specimens of the spring brood are in general more rough-haired than those of the summer. The butterfly is very common, and flies in great numbers about flowering trees, or sips at the flowers of low plants or at wayside pools. In feeding and flying the wings have a quivering motion as in the allied species.

devilliers. **P. devilliers** *Godt.* (6a). Hitherto known with certainty only from Cuba; the older authors assigned it to Florida also, which is perhaps due to an error. Tailed. Forewing with a submarginal row of white spots; hindwing on the upper surface with a submarginal band, and on the under with one or more silver spots.

zetes. **P. zetes** *Westw.* (6a) has on the upper surface of both wings a yellowish band, and on the under surface of the hindwing a silver band. Haiti; only a few specimens in collections.

The following species are all without tails. To some extent the form of the wings recalls the so-called *Ornithoptera* from the Oriental Region.

streckerianus. **P. streckerianus** *Hömr.* (= mathani *Oberth.*) (6a) is a native of the dry open country of North Peru. The spots on the body are greenish yellow. Forewing without band, the band on the hindwing very variable, opalescent in the ♀.

archidamas. **P. archidamas** *Boisd.* (= bias *Kirby*, ex *Roger*) (6b). The spots on the body reddish. Upper surface of both wings with a band composed of spots; under surface of the hindwing for the most part dirty white. Chile; all the year round in the open coast districts. The earlier stages are very similar to those of *P. polydamas*.

P. polydamas. The spots on the body reddish; upper surface of both wings with a band composed of spots; under surface of the hindwing black-brown, with red or yellowish red submarginal spots. Distributed from Virginia to Argentina; varying but little geographically on the continent, on the Greater and Lesser Antilles on the contrary developed into a different form on almost every island. One of the commonest *Papilios* on the continent; an inhabitant of cultivated ground which accompanies the settler everywhere; it is especially common where the ground cleared for cultivation has been again neglected. The larva varies from brown-yellow to dark black-brown; the tubercles are long, in dark specimens red. The pupa is strongly

vincentius. curved, and has three long, compressed humps on the abdomen; the thoracic horn is long. — **vincentius** *R. & J.* Above like the continental form; under surface of the hindwing with white costal streak; sub-

lucianus. marginal spots large. St. Vincent. — **lucianus** *R. & J.* The band on the upper surface broad; under

xenodamas. surface of the hindwing with costal streak at the base; submarginal spots large. St. Lucia. — **xenodamas** *Hbn.* (= cebriones *Dalm.*, eurydamas *Kirby*, ex *Roger*). Band on the upper surface of the hindwing broad, placed close to the cell; under surface of the hindwing at the base with a large bluish grey spot and costal

dominicus. streak. Martinique; formerly erroneously given as inhabiting Brazil. — **dominicus** *R. & J.* The posterior spots on the upper surface of the forewing smaller than in *xenodamas*; band on the hindwing curved. Under

neodamas. surface of the hindwing with costal streak, but without the large spot below it. Dominica. — **neodamas** *Lac.* The upper spots of the band of the forewing wanting or small, the hinder spots further from the

antiquus. margin than in the preceding forms. Band on the hindwing almost straight. Guadeloupe. — **antiquus**

R. & J. Similar to the next form; the four anterior spots of the band of the forewing small; band on the hindwing narrower than in the next subspecies; submarginal spots on the under surface of the hindwing large, yellowish red. Antigua. — **thyamus** *R. & J.* Similar to *polydamas*; submarginal spots on the under surface of the hindwing much more yellowish than in the continental subspecies. St. Thomas. — **lucayus** *R. & J.* Under surface paler than in *P. polydamas*; the white transverse streak at the anal angle of the hindwing extending at least beyond the 2. median; the red submarginal spots as in the continental form, but larger. Bahamas. — **polydamas** *L.* (6b) is the continental form, which occurs from Georgia to Argentina. It is also found on Cuba, but the Cuban specimens are usually distinguished by the deeper black marginal area on the under surface of the hindwing. The band on the upper surface varies much in breadth. The submarginal spots on the under surface of the hindwing are always narrow and red. **polycrates** *Hopff.* (— *hypodamas* *Guen.*) differs from the preceding form on the upper surface principally in the more distal position of the spot before the 2. median on the hindwing, and on the under surface in the large silver spots which stand at some of the red ones. The harpe of the ♂ has only one tooth instead of the two of all the preceding forms. Haiti and probably Porto Rico. — **jamaicensis** *R. & J.* is very similar to *polycrates*, but the submarginal spots on the under surface of the hindwing are larger and the silver spots connected with them smaller. Jamaica.

P. philetas *Hew.* (6b). Abdomen of the ♂ yellowish white above. Under surface of the hindwing greenish yellow, with red submarginal spots. South Ecuador and North Peru.

P. madyes. Similar to the previous species; submarginal spots on the under surface of the hindwing yellow. The scent-scales different in the geographical forms, which is also the case in some of the other species of the *polydamas*-group. Peru and Bolivia. — **plinius** *Weym.* from North Peru. Forewing above with four small spots. Hindwing beneath ochre yellow (discoloured?); submarginal spots small. Only one specimen known; found by STÜBEL between Moyabamba and Chachapoyas. — **chlorodamas** *Guen.* (= *marsyas* *Stgr.*), the commonest form in collections. Bands of spots on the upper surface broad, on the forewing white (♂♂, ♀♀) or yellow (♂♂). In Huánuco and Junin, East Peru. — **crispus** *R. & J.* Spots on the upper surface much smaller than in *chlorodamas*. South-East Peru. — **madyes** *Doubl.* Under surface of the hindwing streaked with black on the veins. Bolivia. — **tucumanus** *R. & J.* (6b), like *madyes*, but the apex of the forewing beneath not washed over with yellow; hindwing beneath smoky brown. Tucuman.

P. polystictus (= *protodamas* *auct.*). Forewing above with three to seven submarginal spots; hindwing with two rows of spots. Abdomen in the ♂ yellowish white above. Brazil, Argentina and Paraguay. Larva similar to that of *P. polydamas*; tubercles shorter, never red. Thoracic horn of the pupa long, inclined somewhat forwards, dorsum of the pupa behind the horn more or less suffused with yellow. Larva gregarious in its earlier stages. This common butterfly flies in open spaces in the forest and on its borders, and is especially fond of feeding on the flowers of Lantana. The food-plant of the larva grows in woods and on the banks of rivers. — In **janira** *R. & J.* the spots on the upper surface are large. Rio de Janeiro; Minas Geraës. — In **polystictus** *Bth.* (6b) the spots are smaller and sometimes partly obsolete. São Paulo to Rio Grande do Sul; Paraguay; Argentina.

P. eracon *Godm. & Salv.* (6c). Forewing with a row of submarginal spots. Hindwing with a uniformly curved band of spots, placed about midway between the cell and the outer margin. Under surface of the hindwing with red submarginal spots, each with a yellowish white dot at the outer side. West Mexico, hitherto only known from Colima and the province of Guerrero.

P. belus. Forewing of the ♂ without white spots on the upper surface; hindwing with one to seven white spots on the disc, the first of which is always large; the forewing of the ♀ is similar to that of the ♂ or it has a large pale yellow area. Hindwing beneath in both sexes with white dots outside the red submarginal spots. The ♂ is called by BATES a swift and bold flier; the ♀ with yellow area on the forewing he found on flowers at the edge of the forest. The ♀♀ of this, as also of the following species, are much more rarely caught than the ♂♂. — **chalceus** *R. & J.*, from the province of Guerrero, West Mexico, has an almost straight band on the hindwing, and on the under surface there is before the subcostal nervure a red submarginal spot, which is wanting in the other subspecies. — **varus** *Koll.* ♂: hindwing with a band of spots diminishing in width posteriorly. The ♀ occurs in two forms. The common form is ♀-f. **latinus** *Fldr.*, it is similar to the ♂, but the forewing has some submarginal spots and the first spot of the band of the hindwing is about as large as the second. The very rare form with large yellowish area on the forewing, occupying the extremity of the cell and the adjacent part of the disc, is ♀-f. **varus** *Koll.* Distributed from Guatemala to North-East Ecuador and North Venezuela: the ♂ common in Bogotá-collections. — **belus** *Cr.* (6c) is the form which inhabits the Guianas, the Amazons, East Peru and Goyaz. In the ♂ the hindwing has usually only one white spot, yet specimens occur which have a row of small spots in the disc. Two forms of the ♀ are known; ♀-f. **belus** *Cr.* (= *caburi* *Kaye*) is similar to the ♂ and has on the hindwing either only one spot or a complete row; in ab. **amulius** *Esp.* the spots on the under

surface of the hindwing are yellow (only known from ESPER's and MARTYN's figures). The second variety *amazonis* of the ♀ is ♀-f. **amazonis** *R. & J.* (6c); it has a yellow area on the forewing like the ♀-f. *varus* of the sub-species *varus* *Koll.* — **belemus** *Bates* from the south side of the Lower Amazon has a straight band on the hindwing; only the form of the ♀ similar to the ♂ is known. — **cochabamba** *Weeks.* ♂: hindwing usually with a broad straight macular band; sometimes the last five spots small, very rarely wanting. Scent-scales short as in the Mexican subspecies. The ♀ is not known. South-East Peru; Bolivia.

P. laodamas. Similar to the preceding species. Hindwing above with a broad macular band; the red submarginal spots on the under surface narrow, not accompanied by white dots. The ♀ resembles the ♂, but the middle spots on the hindwing are large, whilst the first is small. Mexico to Colombia. — **procas** *Godm. & Salv.* ♂: the band on the hindwing is usually contiguous to the cell or crosses its extremity, it is rarely separated from the cell (ab. **iopas** *Godm. & Salv.*). ♀: band on the hindwing usually occupying the extremity of the cell. West Mexico, known from the provinces of Michoacan, Jalisco and Guerrero. — **copanae** *Reak.* (= *chrysodamas* *Bates*). Band on the hindwing in ♂♀ separate from the cell; the red submarginal spots on the under surface of the hindwing narrower than in *procas*. Scent-scales longer than in the preceding form. East Mexico to Honduras. — **rhypidius** *R. & J.* Hindwing in both sexes with very large greenish white central area, which in the ♂ fills up the cell almost to the base, in the ♀ to the first quarter. Costa Rica. — **laodamas** *Fldr.* (6d) is the best-known form, which is very common in Bogotá-collections; it is known from the west coast, the Magdalena Valley and the Cordillera of Bogotá. The first spot on the band of the hindwing is very large and reaches almost to the base; it touches the cell, as do the next two or three spots. The ♀ is not known.

P. lycidas *Cr.* (= *erymanthus* *Cr.*) (6d) is easy to recognise by the white stripe before the hindmargin on the upper surface of the hindwing; this stripe is shorter in the ♀ than in the ♂. — Guatemala to Bolivia and Pará. Appears not to vary geographically. There is only one form of the ♀ known. The ♂ occurs commonly at the edges of water-courses. Like the allied species the butterflies first fly a few times round the places where they are going to alight to drink, as if they wished to make sure of the absence of enemies; but they are not easily disturbed when once they have begun to drink.

P. crassus *Cr.* (6d). A very long-winged species, distributed from Costa Rica to Rio de Janeiro. Forewing with white patches in and below the cell; hindwing with large white costal area, which in the ♂ reaches to the base. In the ♂-f. **lepidus** *Fldr.* the white patches on the upper surface of the forewing are wanting. — The black-brown larva (probably variable in its ground-colour) has no spots. The thoracic hump of the pupa is very long and divided at the tip.

B. Fluted-Papilios.

Here belong the greatest part of the Swallowtail species. Although the forms have followed very different lines of development and often in their outward appearance have not preserved the slightest resemblance to one another, yet this apparently heterogeneous mixture of species is distinguished by sharply marked characters from the other two divisions of the Swallowtails, namely the Aristolochia-Papilios and the Kite-Papilios. The segments of the scaleless antennae are somewhat narrowed at the base; the fine sensory hairs are almost equally distributed over the ventral surface or confined to two large, non-impressed lateral areas. The tarsi are likewise not scaled; the dorsal spines of the segments are separated from the ventral spines by a spineless, impressed lateral space. The abdominal margin of the hindwing in both sexes is curved downwards, forming a kind of groove; a scent-organ is wanting on the hindwing. The tibiae of the ♂ are never thickened nor covered with fine hairs. — The larva is either smooth, without humps, or the tubercles are hard and spiny, not fleshy. The third and fourth thoracic segments are enlarged, so that the larva appears thinner in front and behind. Many of the larvae bear on the thorax on both sides a sort of eye-spot and on the middle of the body a saddle-patch. Plants of very many families serve as food, partly herbs (Umbelliferae, Composites, etc.), but still more often the leaves of trees. — The pupa is wrinkled like leather and often resembles a piece of wood. The head is produced into two tubercles or is truncate, and the thorax bears a usually rather short horn. The wing-cases are expanded much less in mussel-shape than in the Aristolochia-Papilios, and the humps on the abdomen, if present at all, are very short.

The Fluted-Papilios occur in all tropical and temperate regions (New Zealand excepted), and extend northwards with one species as far as the arctic zone. They are therefore the most widely distributed division of the Swallowtails. In their habits they differ quite as much from one another as is their garb. Most species are good fliers, which if frightened hurry away in frantic haste. They almost all visit flowers, especially the ♂♂, and are fond of resting on damp sand or mud. Here their difference in character from the Aristolochia-Papilios becomes apparent, in that they do not crowd together in thick clusters, but rest singly round the outside of the crowd formed by Pierids and Kite-Papilios. Very many of the Fluted-Papilios wear the dress of other butterflies. In America Danais, Heliconids, Pierids, and especially

Aristolochia-Papilios serve as models. In some cases only the ♀, or one of the ♀-forms, is mimetic. Among the American Fluted-Papilios are found a number of powerfully built species with the costal margin of the forewing dentate. We find something similar in the ♂♂ of the Indo-Australian Pierid genus *Prioneris*, and in the Nymphalid genera *Charaxes*, *Eulepis*, *Euxanthoe* and *Palla*, which are all Old World insects. The dentition of the costal margin of these butterflies is evidently a phenomenon accompanying the strengthening of the margin, which is closely related to the acquisition of a strong flight.

Sexual dimorphism is very common among the Fluted-Papilios; as a rule one ♀-form resembles the ♂, whilst the other is mimetic. Sharply pronounced seasonal dimorphism is not observed among the American Fluted-Papilios, yet in the few North American forms which belong here, the butterflies which emerge from the hibernated pupae are generally smaller and more hairy than the summer brood, showing also slight differences in the markings. The trimorphism in both sexes of *P. polyxenes* and *P. bairdi* is very note-worthy.

Machaon-Group.

The species of the *machaon*-group have ringed larvae, which live on Umbelliferae, partly also on Artemisia.

P. polyxenes. Abdomen black, dotted with yellow. Palpi yellow. The posterior yellow spots of the discal band of the forewing remote from the cell, the discal band sometimes wanting. Geographically and individually very variable. The earlier stages very similar to those of *P. machaon*. The forms of North and Central America fly like *P. machaon* in cultivated districts, over meadows and fields covered with flowering fodder-plants, especially clover, at little distance from the ground. The South American forms only occur at considerable elevations. We have here the same phenomenon which we observe in Asia of *P. machaon*, which is likewise a high mountain species south of the Himalayas, in North-East India, Sikkim and Burma. — **americus** Koll. (= *sadulus* Luc.) occurs in three varieties. In the form **melasina** R. & J. *americus*. (8a) the yellow band on the wings is very much narrowed, sometimes reduced to a small spot, whilst in *melasina*. the true *americus* Koll. the band is broad, especially on the hindwing; the pale yellow area on the underside of the hindwing not seldom reaches to the base. The black form lives especially in the Cauca Valley, Colombia, but also occurs elsewhere together with the ordinary form. Venezuela, Colombia, Ecuador and North Peru, occurring only at considerable heights, found up to about 3000 m. — **stabilis** R. & J., very *stabilis*. similar to the usual *americus* form, always with a broad yellow band, the last spot of the band of the forewing shorter than in *americus*, the band on the hindwing beneath sharply defined at the basal side. Costa Rica to Panama, common at a height of 1000 to 1300 m. — **asterius** Cr. (= *asterias* F.) is in some districts very variable, in others pretty constant. The ♂ is much more variable than the ♀. We distinguish three principal forms of the ♂, which are connected by intermediate stages and occur all three together in many districts. ♂-f. **asterius** Cr. has a macular band which traverses the extremity of the cell of the *asterius*. hindwing. Specimens with almost pure white spots on the upper surface are ab. **semialba** Ehrm. The ♂-f. *semialba*. *asterius* occurs from New England to South Mexico. The second variety is ♂-f. **curvifascia** Skinn. from *curvifascia*. Mexico and Guatemala; in this the band of the hindwing is placed outside the cell and is almost uniformly curved. The most striking form is the ♂-f. **ampliata** Mén. (= *asterioides* Reak.), in which the band is *ampliata*. broken up into small spots, which are often partly absent from the forewing. This black form is common in West Mexico, but also flies singly in East Mexico, and one specimen has been bred in Colorado. The ♀ of *asterius* is much less variable. A few striking aberrations of both sexes have been named: in ab. **calverleyi** Grote the submarginal spots are very strongly enlarged and merged into a broad band; in ab. *calverleyi*. **alunata** Skinn. & Aur. on the contrary the submarginal spots on the hindwing are very small and bluish. — *alunata*. **polyxenes** F. (8a). The ♀ resembles the ♂, the band of the hindwing is on the whole somewhat broader *polyxenes*. than in ♂-f. *asterius*. Cuba. — **brevicauda** Saund. (= *mediocauda* Eimer). Sexes similar to one another, *brevicauda*. wings broad and short, outer margin of the forewing somewhat rounded. Inhabits Newfoundland, Anticosti and the districts adjoining the lower course and the estuary of the St. Lawrence River; June to August: the larva on parsley and other Umbelliferae near the coast and the river.

P. bairdi Edw. Either similar to *P. machaon*, but the anal ocellus with black pupil, or similar to *P. polyxenes*, or standing between the two in its markings. These three forms, which occur together in Colorado, are: f. **oregonia** Edw. (= *brucei* Edw.) (8a), *machaon*-like, known from Colorado, Oregon, *oregonia*. Washington Territory, West Canada and British Columbia. The second form, which is known from Utah, Colorado and Arizona, is f. **hollandi** Edw.; the abdomen is *machaon*-like, whilst the wings resemble those *hollandi*. of the following form. In f. **bairdi** Edw. (= *utahensis* Streck.) (8a), which is found in Arizona, Colorado *bairdi*. and Utah, the black abdomen is spotted. The identity of the three forms has been established by breeding. Such non-seasonal trimorphism in both sexes is rare. The butterfly flies in Colorado together with *P. polyxenes asterius*, and in Oregon and further north with *P. zelicaon*, but the insects are independent of one another. Whilst the larvae of the allied species feed on Umbelliferae, those of *P. bairdi* live on a Composite (*Artemisia*); the larvae of all these butterflies are very similar to one another.

nitra. **P. nitra** *Edw.* (8b). Wings shorter than in *P. bairdi*; very similar to *f. bairdi*; perhaps only a northern subspecies. — Known from Montana and West Canada; in the mountains in June and July.

zelicaon. **P. zelicaon** *Luc.* (= *zolicaon* *Boisd.*) (8b). The yellow discal area behind the 2. median of the forewing extending close to the cell; underside of the abdomen black, with or without an indication of yellow lines. — On the west coast a common insect, descending into the lowlands. From Arizona northwards to Alaska and eastwards to Colorado. Found up to a height of 3000 m. The larvae on Umbelliferae.

coloro The ab. **coloro** *Wright* is founded on an old, dark yellow coloured specimen.

P. indra. Thorax above anteriorly with yellowish lateral stripes. Spots on the wings whitish yellow, much paler than in the allied species; the size of the spots rather variable. — A western mountain species, which is difficult to catch; it occurs up to a height of 3500 m, and by preference inhabits rocky land, where the butterfly suns itself on the rocks. It does not frequent flowers and is a shy, swift flier. No satisfactory observations of the earlier stages have been made. The larva according to *EDWARDS* lives on *Artemisia*. There are two subspecies. — The northern form with short tail is the true **indra** *Reak.* (8b); it occurs in Colorado, Nevada, Utah and northern California. — The form which flies in the mountains near the coast of South California at 600–1000 m height is **pergamus** *Edw.*; it is distinguished by its long tail.

aliaska. **P. machaon.** This Palaearctic species is represented in America by the subspecies **aliaska** *Scudd.* (= *joannisi* *Verity*) (8b). The black band on the hindwing is broader than in the geographically nearest subspecies *kamtschadalus*. *Aliaska* is rather common in July and August in Alaska, at the mouth of the River Yukon and on other rivers, as well as in the neighbourhood of lakes, probably everywhere in the lowlands where Umbelliferae grow. The insect is however still rare in European collections. Eastward *aliaska* occurs as far as Hudson's Bay.

Thoas-Group.

The following species of the *thoas*-group have all a spatulate tail. The larvae bear a saddle-spot before the middle and a large diffuse sidepatch on the last segments.

P. thoas. The spatulate tail has a yellow spot in the middle. The species occurs from Texas and the West Indian Islands southwards to Buenos Aires, but is wanting on the Lesser Antilles. It is everywhere common and flies in the open country, in gardens and plantations. *Thoas* is a very bold flier, which often mounts high in the air. The larva lives on Piperaceae and Citrus. — **melonius** *R. & J.* is the subspecies from Jamaica; it has no cell-spot on the upper surface of the forewing. The reddish yellow spots on the under surface of the hindwing are very large. — **oviedo** *Gundl.* (= *epithoas* *Oberth.*) occurs on Cuba. The upper surface of the forewing, and especially the under surface, are more extended yellow and have also a deeper tint than in the other subspecies. — **autocles** *R. & J.*, occurring from Texas to Nicaragua, has no cell-spot; the yellow areas are pale. — **nealces** *R. & J.* is distributed from Nicaragua to North-West Ecuador and eastward to Trinidad and the Lower Orinoco. The forewing has always a cell-spot: the yellow tint is somewhat deeper than in *autocles*, but less deep than in the next subspecies; very common in Bogotá-collections. — **thoas** *L.* comes from the Guianas and the Lower Amazon. Deep yellow; forewing with cell-spot, the first spot near the apex of the wing usually small. — **cinyras** *Mén.* is a large form, which inhabits the Middle and Lower Amazon and the eastern slopes of Ecuador, Peru and Bolivia; the submarginal spots of the forewing are almost always absent. — **brasiliensis** *R. & J.* (7a), from Brazil, Paraguay and North Argentina, is often still larger than *cinyras*; the cell-spot of the forewing is absent or small, the first spot near the apex of the wing is mostly large and produced into a point. — **thoantiades** *Burm.* occurs in Argentina, especially in the province of Buenos Aires. It is a small form, usually with narrow, pale yellow band.

homothoas. **P. homothoas** *R. & J.* (7c). Tail shorter and more rounded at the tip than in the *thoas*-forms from South America; no cell-spot on the forewing. Genitalia quite different from the organs of *P. thoas*; instead of the long anal clasper of *thoas* there is a short fork, the teeth of which are curved right and left; harpe broad, rounded. Orinoco, Colombia, Marguerita Island off the coast of Venezuela.

cresphontes. **P. cresphontes** *Cr.* (7a). Usually considered a slightly different variety of *P. thoas*. No cell-spot on the forewing; the fifth discal spot projecting further than the sixth. Claspers of the ♂ separate above, the anal hook quite short, the lower part of the anal segment likewise quite different from that of *P. thoas*; harpe broad, rounded. A common species in eastern North America, occurring as far as Costa Rica in the south and southern Canada in the north; but the insect is a wanderer, which is found only now and then in the northern districts. In the United States it does not extend westward beyond the Mississippi plain, except in the Southern States. Its true home is the region adjoining the Gulf of Mexico. It occurs also on Cuba.

P. paeon. Sexes similar, as in the preceding species. Tail without yellow spot at the tip, the marginal spot behind the tail large. The larva on *Pastinaca sativa* and probably other Umbelliferae, resembling bird-droppings; thorax strongly swollen; in paler specimens the markings, which resemble those of the *thoas* and *cresphontes* larvae, scarcely visible. The pupa, in which stage the species remains about three weeks, is of the same shape as in the previous species. — In **thrason** *Fldr.*, from Colombia and North Venezuela, the marginal spot behind the tail is very long, extending to about the third quarter of the tail. — **paeon** *Boisd.* (7c) is the southern form, in which the marginal spot only extends to the middle of the tail: the black marginal lines on the under surface of the hindwing broad, strongly curved between the veins. Ecuador, Peru and Bolivia; formerly (perhaps erroneously) recorded from Chile.

P. caiguanabus *Poey* (= *numicus* *Hopff.*) (8c). A species which has a peculiar appearance owing to the absence of the yellow discal bands and the enlargement of the submarginal spots. — Only on Cuba, rather rare, commoner in the eastern part of the island than in the western.

P. aristor *Godt.* (8d). From Haiti; the only known specimen (Godart's name-type, which was in the Paris Museum, seems to have been destroyed) is in the large collection of Mons. Charles Oberthür: it was found near Port au Prince. Forewing with two rows of yellow spots; the discal row curved, not extending to the hindmargin, the outer row complete; hindwing with a row of yellow spots. Underside of the forewing with a yellow spot in the cell.

P. aristodemus. Wings marked similarly to those of *P. thoas*; cell of the forewing beneath quite yellow; tail black above, beneath with a yellow patch in the middle. Cuba, Haiti and Porto Rico: two subspecies. — **temenes** *Godt.* (7c) is the form from Cuba; the yellow discal band is broad and the forewing has 5—7 submarginal spots. — In **aristodemus** *Esp.* (= *daphnis* *Gray*; *cresphontinus* *Kirby*), from Haiti and Porto Rico, the discal band on the forewing is narrow and the row of 4 submarginal spots is strongly curved.

P. andraemon. An almost straight yellow band from the apex of the forewing to the middle of the hindmargin of the hindwing, a transverse area in the cell of the forewing and a short costal band outside the cell. Hindwing strongly dentate; tail with spot in the middle. The larva lives upon Citrus and Ruta; the second and third segments have a pale transverse band and the olive-brown segments 5—7 are laterally spotted with white, the 10. and 11. segments also bear white spots. — **andraemon** *Hbn.* (8b), which occurs on Cuba, has no distinct submarginal spots on the upper surface of the forewing. — **bonhotei** *Sharpe* is the form from the Bahamas, with pale markings and distinct submarginal spots on the upper surface of the forewing. — **tailori** *R. & J.*, from Great Cayman, has no distinct cell-spot on the forewing.

P. machaonides *Esp.* (= *lycoraeus* *Godt.*) (9a) takes the place in Haiti of the preceding species, which is wanting there. The discal band of the forewing is interrupted, the posterior part contiguous with the cell-spot, forming an oblique band. Nothing is known as to the habits of this beautiful insect. The negro republics of St. Domingo and Haiti are as good as closed against the white collector.

P. thersites *F.* (9a) is similar to the well known *P. lycophron* *Hbn.* In the ♂ the yellow band on the forewing is very broad and the cell-spot very large. In the ♀ the forewing has a curved yellow band. — Jamaica. The larva like that of *P. lycophron*.

P. ornythion *Boisd.* (7b). Forewing without cell-spot; discal band narrow; forewing beneath with a row of narrow spots between the discal band and the submarginal spots. — Yucatan, West Mexico and Guatemala.

P. lycophron. Submarginal spots on the hindwing above and beneath large, hindwing beneath with a row of strongly curved reddish yellow crescents. The ♀ occurs in two forms in many districts; it is always unlike the ♂. The larva, which lives on Citrus, is mottled with brown; the yellow lateral spots are large. Mexico to Argentina and South Brazil; several subspecies; is said to occur also on St. Lucia. — In **pallas** *Gray* the ♂ has a discal band broken up into spots; the submarginal spots on the forewing are distinct. In the ♀ the first or the first two submarginal spots are wanting; tail short; hindwing with three rows of spots. Mexico to Costa Rica. — **hippomedon** *Fldr.* (= *theophron* *Fldr.*). A small form with rounded hindwing; submarginal spots on the hindwing small; tail short. ♀ not known. Colombia and North Venezuela. — **phanias** *R. & J.* Similar to the following subspecies; in the ♂ the band on the forewing interrupted by broad black veins; submarginal spots of the hindwing above and of the forewing beneath smaller. ♀ with strongly dentate hindwing; tail narrow, not spatulate; submarginal spots on the hindwing nearer to the margin than in the following form. East Ecuador to Bolivia and Goyaz. — **lycophron** *Hbn.* (= *astyalus* *Godt.*, *mentor* *Dalm.*) (8d) is the form from Brazil, Paraguay and Argentina, the commonest of all. In the ♂ the veins intersecting the bands of the forewing are narrowly black and the submarginal spots on the under surface usually very large. The ♀ in two forms: ♀-f. **oebalus** *Boisd.* is grey-yellow posteriorly on the forewing and from the base to the disc on the hindwing; ♀-f. **pirithous** *Boisd.* (8d) has a black-brown upper surface with a row of yellow submarginal spots.

P. androgeus. As in the preceding species the sexes are different and the ♀ occurs in many districts in two forms. Tail narrow, pointed. Hindwing above with narrow bluish submarginal crescents, beneath with a regular row of reddish yellow crescents between cell and outer margin. Larva on Citrus; similar to that of *P. lycophron*; as in that species the pupa has on the upperside of the abdomen two rows of small tubercles. The butterfly is common in the open country, in gardens and at the edges of woods.

epidaurus. West Indies and Mexico southwards to Paraguay and South Brazil. — **epidaurus** *Godm. & Salv.* occurs on Cuba, Haiti and St. Lucia and also inhabits Central America from Mexico to Panama. ♂: the yellow area very broad; ♀: forewing with indications of a yellow band outside the cell; the grey-blue scaling on the hindwing dense. — **androgeus** *Cr.* (♂ = *policaon Cr.*) (10a). ♂: the yellow area less pale than in the following subspecies. ♀ in two forms: ♀-f. **androgeus** *Cr.* (10a) has on the forewing two large yellow patches, sometimes also a small spot; in the ♀-f. **piranthus** *Cr.* these spots are wanting or are merely indicated, the metallic scaling of the hindwing is not dense and extends into the cell. From Colombia to

piranthus.

laodocus. Bolivia, Matto Grosso and Pará. — **laodocus** *F.* (10a) inhabits Brazil proper, southwards to Paraná. The yellow area of the ♂ is pale, the small spots placed before the extremity of the cell are smaller and often entirely wanting. Only one ♀-f. known; this is similar to the ♀-f. *androgeus* of the preceding subspecies, but the upper yellow spot is smaller than the second.

Glaucus-Group.

The following species of the *glaucus*-group, with the exception of *P. pilumnus*, have in the hindwing a broad, strongly asymmetrical cell. The abdomen is striped longitudinally, not spotted. On the forewing the marginal band is connected with the 5. transverse band by a costal hook-shaped spot, whilst on the tailed hindwing a band running along the hindmargin forms a large V with the median band. The larva has an eye-spot on each side of the 3. thoracic segment and on the 4. segment a black transverse dorsal line, which, however, is wanting in *pilumnus*. The eggs are laid singly on leaves. The larva spins on the upper side of a leaf a silk cushion on which it rests. The edges of the leaf are more or less bent together by the threads. — The species occur in North America and Mexico, and inhabit the open country.

P. glaucus. The subapical hook-mark of the forewing is yellow in the middle, black at the edges; hindwing beneath more or less orange proximally to the black postdiscal line. The ♀ occurs in two forms, with the exception of the northern districts. Larva polyphagous, especially frequent on Rosaceae, lime, birch, ash, etc., in the North one generation, in the Middle States two and in the South three generations. The butterfly is very common; it visits flowers, and is also fond of feeding on putrid or strongly smelling substances. The motion up and down is rather swift, and when the insect is frightened and takes to flight, it hurries away with violent flapping of the wings in an irregular zigzag course. Two geographical forms. —

canadensis. **canadensis** *R. & J.* is a small form with broad black hindmarginal band on the hindwing; the yellow submarginal spots on the under surface of the forewing form a continuous line. From Newfoundland to Alaska and southwards to New England. — **glaucus** *L.* (♂ = *turnus L.*, *antiochus L.*, *australis Mayn.*). The black abdominal margin of the hindwing narrower than the interspace between it and the cell; the 3. black band on the forewing on the whole shorter than in the northern form. The ♀ is dimorphic. Intermediate specimens

turnus. are rare. The ♀ resembling the ♂ is ♀-f. **turnus** *L.* (9b); in the second form the ground-colour is brown-black

glaucus. and the bands consequently stand out only very faintly: ♀-f. **glaucus** (9a). From southern New England

fletcheri. to Florida and the Mississippi Plain. ♂♂ with enlarged irregular black markings are the ab. **fletcheri** *Kemp.*

rutulus. **P. rutulus** *Luc.* (9b). Forewing more pointed than in *glaucus*, the hook-mark much less scaled with yellow; hindwing without orange spot proximally to the black postdiscal line. Harpe of the ♂ with

ammoni. simple dorsal hook and the apex of the harpe dorsally to the apical spine not rounded. ab. **ammoni**

arizonensis. *Behrens* is founded upon dark yellow specimens (turned yellow?) from Nevada, and ab. **arizonensis** *Ede.* refers to specimens with broad black bands. — The larva lives upon willow, it is very similar to that of *glaucus*, but the thoracic spot is more oblong. The insect is an inhabitant of the west side of the continent, where it occurs from British Columbia to Arizona and Colorado. It is there fully as common as *glaucus* in the east and is chiefly found at the lower levels, although it also occurs in the mountains.

daunus. **P. daunus** *Boisd.* (= *multicaudata Kirby*) (9c). An extremely variable species both in the extent of the black bands and in individual size. Hindwing more strongly dentate than in the preceding species. The tooth behind the tail nearly always prolonged to a short pointed tail. The hook-mark on the forewing is always scaled with yellow along the centre, the bands are narrower than in *rutulus*, the 4. black band of the forewing is narrower than the apical yellow cell-space. Southern specimens are on the whole larger than northern ones. — Larva on Rosaceae, very similar to that of *glaucus*. The insect occurs from British Columbia and Alberta southwards to Guatemala; it is a species of the mountainous and prairie-like districts, which speeds along in swift, untiring flight, without stopping at flowers.

eurymedon. **P. eurymedon** *Luc.* (= *lewisi Kirby*, *arizonensis Wright*) (9c). Ground-colour paler than in the allied forms, the black bands broad; the hook-mark on the forewing not filled up with yellowish white

either above or beneath. Dorsal hook of the harpe of the ♂ shorter than in the allied species. Specimens occur sometimes in high mountains in which the marginal band of the forewing in the middle is about as broad as the yellowish white discal area, they are f. mont. **albanus** *Fldr.* — Larva on *Rhamnus californica*: *albanus*. the 3. and 4. segment above with small ring-spot, the black and yellow transverse dorsal line posteriorly on the 4. segment rather broad. A common mountain species, distributed from British Columbia to Colorado. The butterfly visits flowers, especially thistles and mint, and frequently drinks at puddles in large numbers. Its flight is swift and agile.

P. alexiaries. A broad-banded Mexican butterfly. The distal margin of the forewing is straight or very feebly concave; the hook-mark on the underside centred with yellow and this yellowish scaling continuous with the grey or yellowish line situated on the black postdiscal band. On the disc of the hindwing beneath more or less large orange-coloured patches. Early stages not known. Eastern Mexico: two subspecies. — **garcia** *R. & J.* (9b). Yellowish apical cell-area about as broad as the black band placed at its distal side. The black marginal band not broader in the middle than the yellow discal band; the yellow submarginal spots on the under surface of the hindwing narrow, more or less distinctly separated from one another. Monterey, province of Nuevo Leon. — **alexiaries** *Hopff.* The yellow parts more or less dusted over with black, the black bands broader than in *garcia*, the posterior yellow submarginal spots are wanting on the upper surface of the forewing, whilst the submarginal spots on the under surface form a rather broad continuous band. Cuesta de Misantla, in Vera Cruz. *garcia*. *alexiaries*.

P. pilumnus *Boisd.* (9c). A less specialised form than the preceding ones. Cell of the hindwing almost symmetrical, tibiae and tarsi pale greenish. Hindwing above with 2 sharply defined orange spots: the proximal arm of the large V of the hindwing on the under surface divided longitudinally by a grey line. — The larva recalls that of *troilus*. The insect occurs in the open, high-lying Savannas of Arizona and Mexico southwards to Guatemala. *pilumnus*.

The two following species, *troilus* and *palamedes*, like the preceding forms, are Nearctic and form the transition to the mimetic *anchisiades*-group, which they approach rather closely in the early stages and in structure.

P. troilus. Black; thorax and abdomen with small yellowish spots; both wings with a row of submarginal spots, those on the forewing smaller in the ♀ than in the ♂; hindwing with bluish grey-green discal area. On the under surface the hindwing has a discal and a submarginal row of orange-coloured spots and distally to the discal row large metallic blue spots. The larva has a large eye-spot on each side of the 3. thoracic segment and large blind spots on the 4. It lives on the upper side of a leaf in a tube which is formed by the edge of the leaf being so strongly bent over to the middle rib that it comes to lie close against the upper surface. It is mostly found on sassafras and benzoin, Lauraceae, but also lives on other plants, as Magnolia, Prunus, Pirus, etc. Hibernates as pupa. Two broods. The butterfly usually hovers only a few feet above the ground, flying nimbly in quest of the flowers on which it feeds. Canada to Florida and Texas. — In **troilus** *L.* (= *ilioneus* *Abb. & Smith*) (8c) the submarginal spots on the under-side of the hindwing are bluish grey-green. Canada to Georgia and Texas, westward as far as the foot of the Rocky Mountains. In ab. **radiatus** *Streck.* the submarginal spots of the hindwing on the upperside are enlarged to longitudinal stripes. Specimens also occur in which the submarginal spots of both wings extend to the outer margin. — **texanus** *Ehrm.* has on both wings larger submarginal spots than the preceding species; many specimens have a pale subbasal band on the under surface. Florida; Texas (?). *troilus*. *radiatus*. *texanus*.

P. palamedes. Antenna brown; tibiae and tarsi green; abdomen striped with yellow. Markings on the underside of the wings pale yellow; 2 rows of spots on the forewing besides the marginal spots, the discal row doubled towards the costa: on the hindwing a discal band and a row of submarginal spots, and in addition, especially in the ♀, blue spots are present outside the discal band. On the under surface the hindwing has a narrow subbasal band and the discal band is dentate and more or less orange like the submarginal spots. The larva is very similar to that of *troilus* and has the same habits. On Magnolia. The butterfly is common in Florida in the spring. Distributed from Virginia southwards as far as North-East Mexico. The ♀ is more brownish black than the ♂. — **palamedes** *Drury* (= *chaleas* *F.*, *chaleus* *F.*, *flavo-maculatus* *Goeze*). The discal spots of the forewing are large, the cell has nearly always a spot. Virginia to South Florida and Texas, yet also found even in Nebraska. — **leontis** *R. & J.* (8c). A small form with reduced discal spots; forewing without cell-spot on the upperside or with only a very narrow streak. Monterey, province of Nuevo Leon, Mexico. (On pl. 8 the name is erroneously printed *leontia*.) *palamedes*. *leontis*.

Anchisiades-Group.

In the species of the *anchisiades*-group the pronotum and thorax are at least partly spotted with red or yellow-red. The abdomen is black and has no light markings except a basal lateral spot and streak. The cell of the forewing beneath is not streaked with yellow and the hindwing has no blue spots. The larvae, so far as is

known, are marmorated; the light colour forms before the middle, especially laterally, a large irregular spot; on each side a subdorsal row of tubercles. The larvae are shiny and superficially resemble those of Tenthredinidae; they rest in larger numbers on leaves or the trunk and are mostly found on Citrus. Pupa resembling a short broken-off twig; the thoracic horn not long.

P. hyppason *Cr.* (= *hyppason Esp.*) (10b, c). Tailless. Pronotum spotted with red. Hindwing beneath with red basal spot behind the cell. Subcostal of the hindwing much more proximal than the *hyppason*. 2. median. Sexes different from one another, each variable in itself. ♂-f. **hyppason** *Cr.* (= *hyppasonides ptilion. Girard-Smith*) has a broad band on the forewing, mostly abbreviated. In ♂-f. **ptilion** *H. & J.* the band of the forewing is narrow and placed farther from the cell. The ♀ occurs likewise in 2 principal forms: ♀-f. *amosis*. **amosis** *Cr.* has a black forewing, on which scarcely a trace of white discal spots is visible. In ♀-f. *paraensis*. **paraensis** *Bates*, on the contrary, the forewing has one or several white or yellowish white spots. These forms occur together, though not everywhere. — The Guianas to Pará, the Amazon upwards to Peru and southwards to South-East Bolivia; not known from Brazil proper, Ecuador, Venezuela and Colombia. The butterfly is found at the edges of swampy woods and has a swift flight.

P. pelaus. With spatulate tail. Sexes similar, but the markings in the ♀ somewhat enlarged and on the hindwing more numerous than in the ♂. Black, forewing with oblique white band from the costa to the anal angle; hindwing with complete (♀) or incomplete (♂) row of pale red submarginal spots; beneath there are usually also small discal spots present, which sometimes in the ♀ also occur above. West *pelaus*. **pelaus** *F.* (= *ornofagus Weidem.*, *peleus Gmel.*) (7b) has a proportionately broad white band on the forewing, which above, at least in the ♀, also enters the extremity of the cell. Jamaica and Cuba; *imerius*. perhaps the specimens from Porto Rico also belong here. — In **imerius** *Godt.* (= *augias Mén.*) the band of the forewing is narrower anteriorly, on the other hand its last spot is on the whole broader than in the preceding form, and the spots on the hindwing are smaller. Haiti.

oxynius. **P. oxynius** *Hbn.* (= *augustus Boisd.*) (10b). Similar to *pelaus*, but the band of the forewing only indicated; the marginal spots of both wings large. — Only known from Cuba. Larva on *Xanthoxylum*, gregarious by day, resting on the trunk and branches.

epenetus. **P. epenetus** *Hew.* (10b). Tailless; the ♀ paler than the ♂; forewing without spots except at the margin; hindwing with large yellowish white marginal spots and in the ♀ usually also some small discal spots. — From Western Ecuador, not known from the east side of the Andes. HAENSCH found the larvae in June in large numbers on Citrus.

chiansiades. **P. chiansiades** *Westw.* (= *chinsiades Kirby*) (10d). On the upper surface of the forewing before the hindmargin a large yellowish white spot; on the hindwing posteriorly some red discal and submarginal spots, the spots of the two rows separated from one another; the tooth of the 3. radial prolonged into a short pointed tail. The ♀ and the earlier stages not known. — Eastern slopes of the Andes of Ecuador and Peru, likewise on the Upper Amazon.

pharnaces. **P. pharnaces** *Doubl.* (= *phanostratus Godm. & Salv.*, *polycharmus id.*) (10c). More or less distinctly tailed, hindwing with two separated rows of red spots, the proximal spots in the ♂ often very small. — Mexico, distributed from the Atlantic to the Pacific.

erostratus. **P. erostratus** *Westw.* (= *herostratus Fldr.*, ♀ = *rhetus Gray*) (10c). Like the preceding species, but in the ♂ the spots on the upper surface of the hindwing yellowish white. In the ♀ the spots red also above, larger than in the ♂ of *pharnaces*, the marginal spots of both wings also somewhat larger than in the foregoing species. Tail long and narrow. — Guerrero in West Mexico (where *pharnaces* also occurs), Guatemala and British Honduras. Commonest in hilly country at a height of about 5000 ft.

rogeri. **P. rogeri** *Boisd.* Forewing lighter in colour from the apex of the cell outwards, the dark basal area rounded distally; hindwing with suggestion of a small tail; some red spots on the disc, in two separate rows, in the ♂ the proximal spots very small, usually only indicated; in the ♀ all the spots larger than in the ♂. — Larva not known. Yucatan and British Honduras.

P. anchisiades. A widely distributed variable species. Hindwing posteriorly somewhat prolonged, therefore more or less triangular; the tail is wanting or is only somewhat longer than the other marginal teeth, yet in the ♀ sometimes as long and pointed as in the following species. The red spots of both the rows of the hindwing on the underside partly contiguous, or at least two pairs placed quite close together. Larva on Citrus, often resting together in hundreds on the stems. A very common insect, which is fond *idaeus*. of drinking at moist places on the banks of rivers; not a forest species. — **idaeus** *F.* (= *pandion Fldr.*, *pandonius Stgr.*). Forewing usually with a distinct white spot at the end of the cell above and beneath or *anchisiades*. only beneath. Central America, from Mexico to Panama. — **anchisiades** *Esp.* (= *anchises L. partim*, *theramenes Fldr.*, *pompeius Kirby*) (10d). Very variable. Forewing with two white spots posteriorly of

the 1. median vein, either on both sides or only beneath, on the underside also a spot before the 1. median, rarely present above, and sometimes one before the 3. radial. In other specimens the white spots are wanting above: the forewing is dark from the base to the apex of the cell and then paler, and has a row of white spots beneath. From Colombia to Pará and Bolivia. — **capys** *Hbn.* (= *evander* *Godt.*) (10c), *capys*. Forewing without white spots on the upperside; the disc paler, the dark proximal area rounded; on the underside a row of white spots, one of which is placed in the cell. East Bolivia, North Argentina, Paraguay and Brazil.

P. isidorus. Forewing on the under surface either without white cell-spot, or the spot small, not extending transversely across the cell. Hindwing posteriorly shorter than in *anchisiades*, the tail short, narrow; the last submarginal spot more distal than the large spot placed before it. The harpe of the ♂ not dentate. Larva not known. Panama to Bolivia; a species of the Andes. — **chironis** *R. & J.* Fore- *chironis*. wing above with 2 white spots between the 2. radial and 2. median and a small cell-spot; the spots beneath much larger, the spot between the 3. radial and 1. median the largest. Chiriqui. — **brises** *R. & J.* Fore- *brises*. wing above without spots, beneath with 2 or 3 spots, but without cell-spot. In Bogotá-collections, probably from the Magdalena and Cauca Valleys. — **flavescens** *Oberth.* The white spots on the underside of the *flavescens*. forewing reduced. The spot placed between the 2. and 3. radial of the hindwing usually white above or beneath or on both sides. East side of the Andes of Colombia, Ecuador and North Peru. — **isidorus** *Doubl.* *isidorus*. (10d). The white patch on the under surface of the forewing usually enters the cell and is often also indicated above; the red spots of the hindwing on the whole larger than in red-spotted specimens of *flavescens*, the two spots placed between the 2. radial and 2. median separated also on the upper surface. Eastern slopes of the Andes of Bolivia and Peru, northwards to Huánuco.

P. rhodostictus. Differs from *isidorus* chiefly in that the white cell-spot of the forewing at least beneath extends across the cell, the spots on the upper surface of the hindwing are merged in pairs into 3 or more rarely 2 large patches, and the harpe of the ♂ is almost symmetrical. Costa Rica to Ecuador. Larva not known. — **rhodostictus** *Bthr. & Druce* (10d), from Costa Rica and Chiriqui, has a *rhodostictus*. narrow cell-spot and the discal spot placed before the 3. radial is the largest or the most clearly developed. — **pacificus** *R. & J.* The discal spot between the 3. radial and 1. median is larger than the preceding one; *pacificus*. cell-spot large. West Colombia and West Ecuador. — **nymphius** *R. & J.* Forewing on the upper surface *nymphius*. without cell-spot, the spot between the 3. radial and 1. median on the under surface larger than the preceding spot. Central and East Colombia, not rare in Bogotá-collections. The spots on the hindwing are sometimes whitish.

Torquatus-Group.

In the species of the *torquatus*-group the palpus is yellow; the thorax is likewise yellow or at least spotted with yellow and the abdomen has at least a yellow lateral line. Both sexes are tailed, but the tail in the ♀ is sometimes short and pointed. In colour the ♂♂ and ♀♀ are always different; on the whole the ♀♀ are more black, the ♂♂ more yellow. The larvae are similar in colour to bird-droppings and bear 4 rows of rather long tubercles. The thoracic hump of the pupa is large.

P. himeros. Both wings with yellow band, which is broader in the ♂ than in the ♀; tail with yellow apical spot; submarginal spots of the hindwing in the ♂ yellow, in the ♀ red except the 2 anterior ones. Brazil; a rather rare species. — **baia** *R. & J.* The yellow markings reduced or narrowed. Bahia. — *baia*. **himeros** *Hopff.* (= *mentor* *Boisd.*, *herodotus* *Oberth.*). The yellow band on the forewing is contiguous to *himeros*. the cell and is broader than the black marginal area. Minas Geraës; Rio de Janeiro.

P. lamarchei *Stgr.* (11a). Only the ♂ known. The yellow band narrower than in *himeros*, forewing *lamarchei*. without yellow spot distally of the anterior angle of the cell; hindwing very strongly dentate, tail without yellow spot at the tip. Harpe short and rounded, whilst in *himeros* it is long and pointed. — In Northern Argentina and Bolivia, not rare.

P. hectorides *Esp.* (= *torquatinus* *Esp.*, *pandrosus* *Godt.*, *chirodamas* *Hbn.*) (11a). In the ♂ the band is still narrower than in *lamarchei*. Hindwing with red spots on the disc. In the ♀ the band is absent or is white; on the forewing it is curved anteriorly towards the costa and on the hindwing does not extend to the abdominal margin; the submarginal spots of the hindwing are red and narrow. The ♀ occurs in three principal forms: ♀-f. **hectorides** *Esp.* (= *mecentius* *Doubl.*, *argentus* *Gray*) (11a) has a white band on *hectorides*. both wings; in ♀-f. **catamelas** *R. & J.* the band is developed on the hindwing, but on the forewing merely *catamelas*. indicated; in ♀-f. **melania** *Oberth.* it is slightly indicated on both wings or entirely absent. These forms *melania*. occur together. — Larva on Citrus and Piperaceae, resting gregariously on the upperside of leaves. The butterfly is common. It is a swift flier, which is found especially at the edges of woods and in the neighbourhood of thickets. Brazil and Paraguay.

P. garleppi. ♂ similar to *torquatus*, but the yellow band broader and the marginal tooth of the 1. median of the hindwing longer; 2 or 3 small spots composed of yellowish and bluish scales placed before the red anal spot of the hindwing; on the underside the posterior discal spot placed at the 2. median is very small and bluish. The anal tergite is long and slender; harpe produced into a long point and furnished with a long pointed process at the ventral margin. The ♀ is not known. East Bolivia, East Peru and the Upper Amazon are the home of the insect. Two subspecies. — **garleppi** *Stgr.* Band of the forewing not interrupted. Bolivia. — **interruptus** *Stgr.* Band of the forewing interrupted. Upper Amazon and East Peru.

P. torquatus. ♂: the band of the forewing is interrupted between the 2. and 3. radial, rarely there is a yellow spot almost filling up the gap; on the under surface of the hindwing a row of red discal spots, of which the last is placed proximally to the last submarginal spot. The ♀ very different from the ♂, resembling certain *Aristolochia-Papilios* which occur together with it; wings brown-black, with or without white patches on the forewing; hindwing above with two rows of red spots, the proximal row incomplete, some of the spots merged together in pairs into 2 or 3 large patches. The anal tergite of the ♂ spatulate; the harpe broad, denticulate. Larva shiny, as if polished (which is also the case in all the allied species), mottled with light colour, with irregular pale patch before the middle; the colour of bird-droppings. The butterfly is found in forests and in their neighbourhood; the ♀ is a true woodland species, like the *Aristolochia-Papilios* whose dress it wears, whilst the ♂♂ disport themselves more in open, sunny localities.

tolus. Mexico to Brazil, not known from the temperate part of South America (South Brazil, Argentina). — **tolus** *Godm. & Salv.* ♂: band of the forewing narrow, the anterior spot long, the 2. short. ♀: forewing without white discal spots; hindwing with 2 separated rows of red spots. Tail in both sexes long and spatulate.

tolmides. Mexico, apparently rare. — **tolmides** *Godm. & Salv.* ♂: band broader than in *tolus*, tail narrower, no spots, or only very small ones, before the upper angle of the cell of the forewing. ♀ not known. Chiriqui and

orchamus. Sevilla Island; likewise rare in collections. — **orchamus** *Boisd.* ♂: the spots before the upper angle of the cell of the forewing small, the first long spot of the yellow band as long as the 2., or somewhat longer, the submarginal spots of the hindwing usually very distinct. ♀ with a white spot placed across the cell of the forewing and another spot before the 1. median, as well as usually also a spot before the 3. radial and an indistinct spot behind the 1. median; 4—6 large red spots on the hindwing, cell with spot, tail short,

leptalea. non-spatulate. Colombia; North Venezuela. — **leptalea** *R. & J.* ♂: yellow band of the forewing narrower than the black marginal area, narrower than in all the other forms of this species; the spots before the apex of the cell small; the submarginal spots of the hindwing distinct, the apex of the cell on the under surface black as far as the base of the 1. median; tail spatulate. ♀ similar to that of *orchamus*, the white

torquatus. spot between the 2. and 3. spot of the forewing and the cell-spot smaller. West Ecuador. — **torquatus** *Cr.* (= *pelaus* *F.*) (11b). ♂: the spots before the apex of the cell of the forewing mostly larger than in the other forms, the two subapical spots of the band broad, the 1. shorter than the 2., the band at least half as broad again as the black submarginal area; the submarginal spots of the hindwing usually strongly darkened by black scaling. The ♀ very variable; the tail always slender, commonly short; 5 principal

theras. forms: ♀-f. **theras** *R. & J.*, forewing with cell-spot, which however does not extend across the cell, and one or more spots on the disc; ♀-f. **caudius** *Hbn.* has no cell-spot, but several discal spots, of which the one

patros. placed between the 1. and 2. median is the largest; ♀-f. **patros** *Gray* (11b) has no white spots on the forewing, the patches on the hindwing are red; ♀-f. **flavida** *Oberth.* (= *flava* *Haase*) resembles *patros*, but

cleolas. the patches on the hindwing are yellow-white; ♀-f. **cleolas** *R. & J.* has no spots on the forewing, but on its under surface a yellowish white submarginal band. These different forms of the ♀ occur only partly together, the first 4 are known from the Upper Amazon, but the 5. form, which we have from Bolivia, may also be found there. East and South Venezuela, the Guianas, the Amazons and the eastern slopes of

polybius. the Andes of Ecuador, Peru and Bolivia. — **polybius** *Swains.* (♀ = *tros* *Hbn.*, *trojanus* *Boisd.*) (11b) inhabits Brazil, Matto Grosso and Paraguay. In the ♂ the spots before the apex of the cell of the forewing are small and the submarginal spots on the underside rather large; on the hindwing beneath the cell is entirely or almost entirely yellow; the tail broad. The ♀ occurs only in one form: forewing with spot in the cell and a large patch between the 1. and 2. median; tail spatulate, with rounded tip.

P. tasso *Stgr.* (11a). ♂: band of the forewing abbreviated, the subapical part wanting. ♀ with broad white band, which begins on the forewing at the 3. radial and extends to the hindmargin of the hindwing; the cell of the forewing beneath with a few yellow streaks; the tail non-spatulate. — Only a few old specimens known, which probably came from Brazil.

P. peleides *Esp.* Perhaps an artefact; only known from JABLONSKY's figure; is it perhaps a West Indian representative of *torquatus* not rediscovered? ♂: forewing with a yellow macular band of almost uniform breadth, curved forward to the costa; hindwing with yellow submarginal spots, the last of the row red, as well as one placed proximally to it at the hindmargin; tail spatulate.

Zagreus-Group.

The remaining Fluted-Papilios are powerfully built insects with strong venuration in the forewing. The frons is either quite black or bears a yellow mesial line, never a yellow lateral streak along the eye. In the mimetic *zagreus*-group the antennae are long, yellow, with thin club; the frons has a yellow mesial stripe, the breast is diagonally streaked with yellow, the abdomen is for the most part yellow, the costal margin of the forewing is not dentate, the cell of the forewing is broad and the hindwing is rounded, without a tail. The species resemble *Tithorea* species, but are much more powerfully built. The earlier stages are unknown. The ♀♀ are very rare in collections; they are similar to the ♂♂.

P. zagreus *Doubl.* (11c). The spots of the forewing orange, the marginal ones yellow; hindwing *zagreus*. orange, a marginal band enclosing a yellow submarginal spot, a basal subcostal area, a patch in the extremity of the cell, as well as several spots on the disc, black. — Venezuela and Colombia, southwards to Bolivia, descending on the Amazon as far as Ega; varying individually, but not distinctly geographically.

P. ascolius. Hindwing without black spots in the cell and on the disc. Chiriqui to West Ecuador, occurring in Colombia together with the preceding species. Geographically and individually variable. — **zalates** *Godm. & Salv.* is the most northern form. The cell area of the forewing is dusted with black, the *zalates*. subapical cell-spot is narrow, the discal spots are short, the marginal area of the hindwing narrower than in the other forms and the hindwing beneath deeper orange. Republic of Panama, found in various localities. — **daguanus** *R. & J.* The cell-spot of the forewing as in *zalates*, the discal spots on the contrary as *daguanus*. in *ascolius*, the discal spot between the 1. and 2. radial much shorter than the one placed behind it; hindwing pale, much less orange than in *ascolius*, the black basal streak broad, entering the cell, behind this streak a large black spot on the disc. West Colombia, at the Rio Dagua. — **ascolius** *Fldr.* (11c). The *ascolius*. basal area of the cell of the forewing always pure pale yellow, between the 3. radial and 1. median two spots touching the cell; cell of the hindwing and the adjoining parts of the disc orange. Magdalena Valley and Cordillera of Bogotá. — **rosenbergi** *Druce*. The subapical cell-spot of the forewing large, the discal *rosenbergi*. spot between the 1. and 2. radial usually small, sometimes absent, rarely large, the following discal spots on the whole larger than in the preceding forms, whilst the posterior submarginal spots are smaller; the hindwing mostly very pale, yet sometimes more orange than the palest specimens of *ascolius*. West Ecuador, found by ROSENBERG at a height of 1000 to 3500 ft.

P. bachus. The orange area of the hindwing of the preceding species is here only represented by a narrow variable band; however, the veins are often more or less yellowish on the underside. The ♀ is not known. Colombia to Bolivia. Two subspecies. — **bachus** *Fldr.* (11c). The yellow spots of the fore- *bachus*. wing above and beneath quite pale, only the proximal cell-spot and the posterior discal spots somewhat orange. Colombia; found by Dr. BÜRGER at the beginning of the rainy season in the Cordillera of Bogotá; rare in collections. — **chrysomelus** *R. & J.* The forewing orange above and beneath from the base to the *chrysomelus*. disc, at the costal margin more or less pale yellow. Peru and Bolivia, not rare. From Ecuador no specimen of *bachus* has become known to us.

Scamander-Group.

P. hellanichus, *scamander*, *birchalli* and *xanthopleura* belong to the *scamander*-group. The frons is black and the otherwise black palpus has a white dot. The costal margin of the forewing is feebly dentate, especially near the base, but the dentition only becomes distinct if the margin is denuded. Only the larva of *scamander* is known; when full-grown it is black-brown beneath, green elsewhere, and bears a transverse band before and behind on the 3. thoracic segment, as well as two diagonal bands on the abdomen, which are usually united on the back, forming an X-shaped mark. The young larva on the contrary is brown and has on the middle segment and on each of the posterior ones a large grey patch. The pupa is green or brown-grey; it is fastened low down on the stem, usually close to the ground. On Magnolia, Canella and Citrus.

P. hellanichus *Hew.* (11d). The yellow spots on the upper surface of the wings are large. The *hellanichus*. insect reminds one superficially of *machaon*, with which, however, it is not closely allied. The markings of the under surface as well as the structure prove that *hellanichus* is the southern representative of *scamander*. The cell has also on the upper surface a yellow spot, which on the forewing is sometimes very small, on the hindwing always large. The spots of the discal band have almost all reddish tips. ♀ quite similar to the ♂. — Uruguay and the adjoining parts of Argentina and Brazil, especially in the neighbourhood of the river and on the islands in the estuary of the La Plata.

P. scamander. Cell of the forewing without spot, that of the hindwing sometimes with a small spot; a pale yellow curved discal band, broken up into spots, on both wings. ♂ and ♀ very similar. Larvae and pupae described above. Brazil, common in hilly country, though not everywhere. Three geographical forms, which completely intergrade. — **grayi** *Boisd.* The submarginal macular band of the forewing evenly *grayi*. curved, the discal band broadest posteriorly; the red discal spots on the under surface of the hindwing separated from the discal band. Bahia to Paraná. — **eurymander** *Hopff.* The first 2 or 3 submarginal *eurymander*.

spots of the forewing more proximal than the other spots of this row, the submarginal spots of the hindwing partly pale yellow; the basal area of the hindwing beneath pale, often partly yellowish, the red discal spots small or absent. Santa Catarina and the adjoining districts of Rio Grande do Sul. — **scamander** Bois. (11d). Discal band of the upper surface more yellow; under surface of the hindwing pale yellow, with black veins and without red discal spots. Abdomen laterally pale yellow. Rio Grande do Sul.

P. birchalli. ♂: body black, claspers usually with pale yellow spot. Forewing above with 2 rows of spots before the margin; the anterior spots of the proximal row more or less indistinct; hindwing with broad discal band and a row of submarginal spots; the markings for the most part greenish; tooth of the 3. radial only a little more projecting than the other marginal teeth. Beneath the forewing has a cell-spot, an oblique row of discal spots and a row of submarginal spots abbreviated anteriorly; on the hindwing is a discal and a submarginal row of red spots, the middle discal spots small, the last one large and yellowish white. In the ♀ the markings of the upperside are more bluish and the discal band of the hindwing is very broad. Panama and Colombia; according to Druce it occurs also in North Argentina, which appears to us doubtful. — **godmani** R. & J. The last spots of the discal band of the hindwing above indistinct and the band broader in the middle than the black marginal area. Panama: Chiriqui and Bugaba. — **birchalli** Hew. (11d). The discal band of the hindwing above narrower than in *godmani* and its two last spots distinct. Colombia: Magdalena and Cauca Valleys.

P. xanthopleura Godm. & Salv. (12c). Sides of the abdomen yellow; under surface of the hindwing without discal band, the red submarginal spots large. The ♀ in two forms: ♀-f. **xanthopleura** is similar to the ♂, whilst ♀-f. **diaphora** Stgr. has a large pale yellow area on the upperside of the forewing. — Upper Amazon.

Homerus-Group.

All the following Fluted-Papilios are distinguished by a strongly dentate costal margin of the forewing in the ♂, which is weaker in the ♀. The black abdomen is never spotted, but the underside of it in some forms is yellowish olive-brown. The antennae are short and the frons is broad. Like the preceding species they are forest insects, which occur in the mountains, especially at medium heights.

P. victorinus. A Central American species, occurring from Mexico to Costa Rica. ♂: two rows of pale yellow spots on the upper surface between two rows of bluish grey spots, which are distinct especially on the hindwing. Hindwing beneath with a row of red, black-edged discal spots and a row of crescent-shaped submarginal spots; tooth of the 3. radial only very little prolonged. Larva green above, grey beneath, anteriorly with two transverse grey, spotted, dorsal bands; abdomen laterally grey, dorsally with two angle-shaped spots. Two broods. — **morelius** R. & J. Discal spots of the forewing small or absent, no cell-spot on the underside. West Mexico. — **victorinus** Doubl. (11d). ♂: discal row of the forewing consisting of at least 3 spots; usually a row of bluish grey postdiscal spots present; discal spots of the under surface of the hindwing larger than the submarginal spots. The ♀ in two forms: ♀-f. **victorinus** Doubl. (= *helleri* Fldr.) is similar to the ♂, but the spots of the upper surface, especially of the hindwing, are mostly larger; in ♀-f. **amphissus** Hopff. the hindwing has a bluish or greenish discal band, much broadened posteriorly. East Mexico to Nicaragua. — **vulneratus** Bthr. The discal spots of the upper surface of both wings larger than in the two preceding subspecies; hindwing without bluish spots distally to the discal row. Costa Rica, only one ♂ known (in coll. F. DUCANE GODMAN).

P. cephalus Godm. & Salv. ♂: tailed, two rows of spots on the upperside of the forewing, the submarginal row uniformly curved. Underside of the hindwing with bluish crescents distally to the discal spots. — Chiriqui, one ♂ in coll. STAUDINGER; perhaps only a tailed specimen of *P. cleotas archytas* (the genitalia should be compared!).

P. cleotas. Forewing above with a submarginal row of spots, curving in front towards the costa, and an oblique discal row of larger patches posterior to the lower angle of the cell; hindwing with discal band and submarginal spots. Under surface of the hindwing with a row of red discal spots, which are proximally more or less yellow, the last spot always pale yellow. The ♀ in two forms, one similar to the ♂, the other with broad bluish or greenish band, diffuse proximally. Distributed from Costa Rica to South Brazil, but not known from Bolivia to Ecuador, nor from the Guianas, the Orinoco or the Amazon, being replaced in these districts by *P. aristeus*. — **archytas** Hopff. (♂ = *laetitia* Bthr.). ♂: the cell-spot and the middle discal spots of the forewing smaller than in the next form. In the dimorphic ♀, ♀-f. **archytas** Hopff. is similar to the ♂, whilst ♀-f. **panthias** R. & J. has bluish or greenish markings on the upperside. Costa Rica: Panama: Brava Island on the west coast of Panama. — **phaeton** Lucas (= *phaëton* Doubl.) (13a) inhabits Colombia. ♂: the markings on the upper surface very variable. The cell-spot of the forewing usually more oblique than in *archytas*, sometimes absent (ab. **clearchus** Fldr.), and the anterior submarginal spots larger than the posterior ones; tail distinct; harpe dentate at the dorsal margin, with a strong apical hook curved inwards, the dorsal prong of the fork short.

The ♀-f. **phaeton** *Luc.* is similar to the ♂. The second form, ♀-f. **syndemis** *nor.*, has a broad bluish band *syndemis*. on the hindwing; the discal spots of the upper surface of the forewing are bluish, the middle ones only indicated, those of the under surface are only represented by a few indistinct little spots; hindwing above with distally convex bluish crescents outside of the discal band; discal band of the underside reduced, consisting of small, black-edged red spots; tail long; one specimen, from Bogotá, in the Tling Museum.

coroebus *Fldr.* ♂: the cell-spot of the upper surface of the forewing is absent, or it is more or less distinct *coroebus*. but diffuse (ab. **philocleon** *Fldr.*); the discal spot between the 3. radial and 1. median usually more proximal *philocleon*. than in *phaeton*, the submarginal spots smaller; on the hindwing the discal band broken up into spots; the 3. and 4. spots reduced; the dentition of the harpe more regular and the dorsal process longer than in *phaeton*. The form of the ♀ similar to the ♂ is ♀-f. **dione** *R. & J.*; in the second form, the ♀-f. **coroebus** *Fldr.*, *dione*. the markings of the upperside are bluish and the discal band on the upperside of the hindwing is strongly widened posteriorly, also the discal spots of the hindwing beneath are reduced. East side of the Cordillera of Bogotá; Northern Venezuela. — **cleotas** *Gray* (= *lycortas* *Fldr.*). ♂: discal band of the upper surface *cleotas*. of the forewing more oblique than in the other subspecies; a row of nebulous bluish grey spots between the cell and the submarginal spots; harpe terminating in a two-pronged fork, whose prongs are straight and approximately of equal length. In the ♀ the middle vaginal lobe is short, the side one narrow and pointed. The two colour varieties are: ♀-f. **cleotas** *Gray*, similar to the ♂, and ♀-f. **adaea** *R. & J.*, in which both wings *adaea*. above have a discal and a postdiscal row of bluish patches. Brazil, from the province of Rio de Janeiro (Petropolis) to Rio Grande do Sul; according to Boisdual also in Uruguay, but the statement appears to us doubtful.

P. aristeus. Cell-spot of the forewing very large, the discal spot between the 3. radial and 2. median very long, forming with the cell-spot a large pale yellow area. The ♀ resembles the ♂, or the markings of the upperside are bluish and the discal band of the hindwing is broad; both forms on the underside with large, more or less distinct pale yellow cell-patch. South America and Panama. — **aristeus** *Cr.* (♂ = *aristeus*. *bari Oberth.*). ♂: the cell-spot of the forewing rhombiform, the discal spot placed before the 1. radial long, the next extending almost to the submarginal row, the third small and indistinct; discal band of the hindwing above only distinct posteriorly. Only one form of the ♀ known (CHAMBER'S figure); forewing with long, indistinct grey-blue longitudinal streaks and hindwing with very broad bluish band. French and Dutch Guiana: one ♂ in coll. CHARLES OBERTHÜR. — **ctesiades** *R. & J.* Cell-patch of the forewing longish, nearly *ctesiades*. reaching to the base, two large, long discal spots, as well as a long triangular spot behind the 2. median and the cell; discal spots of the upper surface of the hindwing small, red. Upper Amazon. — **desmias** *R. & J.* *desmias*. Cell-spot shorter and narrower than in *ctesiades*, a small spot in the apex of the cell, a second distally to it, two large discal spots and behind the base of the 2. median a spot which is smaller than in *ctesiades*; hindwing as in *bitias*. Province of São Paulo, Brazil; one ♂ in coll. F. DUCANE GODMAN. — **bitias** *Godt.* *bitias*. (= *eurotas* *Fldr.*; *ctesias* *Fldr.*; *lacordairei* *Borre*) (13a). ♂: cell-spot of the forewing more transverse than in the preceding subspecies; discal band of the hindwing never complete, only indicated, or interrupted in the middle. ♀ dichromatic: ♀-f. **bitias** *Godt.* resembles the ♂; ♀-f. **therapes** *R. & J.* is similar to the ♀-f. *therapes*. *aristeus*, but the bluish streaks of the forewing are shorter and the band of the hindwing is narrower, also the cell-spot of the under surface of the forewing is partly pale yellow. Common on the east side of the Andes of Ecuador and Peru; upper course of the Rio Negro: Bogotá and Chiriqui; the last two localities appear to us doubtful. — **vilcanotus** *R. & J.* Cell-spot of the hindwing and costal spot of the hindwing *vilcanotus*. brownish yellow. Vilcanota, South Peru. **coelebs** *R. & J.* Cell-spot of the forewing narrow, transverse, *coelebs*. the discal spot between the 1. and 2. median narrow, triangular, not reaching to the cell, the submarginal spots large, indistinct grey-blue spots between them and the cell; hindwing with broad pale yellow discal band, submarginal spots large, pale yellow. On the underside the cell-spot of the forewing smaller than in *bitias* and *lenaus*. North-west Peru and Northern Central Peru (Tambillo, Chachapoyas), as well as South-west Ecuador. — **lenaus** *Doubl.* Cell-spot of the forewing transverse, not so oblique as in *bitias*, a discal *lenaus*. spot before the 3. radial, the discal spot behind the 1. median proximally narrowed and abbreviated; discal band of the hindwing complete, or narrowly interrupted. Rather common in South-East Peru and East Bolivia, the ♀ not known or at least not described.

P. judicæi *Oberth.* (13b). ♂: cell-spot of the forewing narrow, transverse and like the 4 discal *judicæi*. spots brown-yellow; hindwing strongly dentate, tailed. Cell-spot of the under surface of the forewing large, brown-yellow, the submarginal spots small; discal band of the hindwing dirty white, orange-red distally. — Only one ♂ in coll. OBERTHÜR, from Huambas, Amazonas, North Peru.

P. garamas. ♂: both wings on the upperside with a pale yellow discal band and a row of submarginal spots; margin of the hindwing strongly dentate, with spatulate tail; discal band of the underside of the hindwing brownish orange distally. The ♀ similar to the ♂, or the yellow discal band is absent and the hindwing has very strongly curved, more or less reddish, discal crescents. Central America. — **ab-** *abderus*. **derus** *Hopff.* (12b). ♂: forewing with 4 submarginal spots, often with indication of a fifth, the discal band of the hindwing enters the cell, the submarginal spots are absent; the orange-red teeth of the discal band of the hindwing beneath of equal breadth on both sides of the veins, shorter than in the following sub-

species. One form of the ♀ similar to the ♂, but the submarginal spots of the upper surface of the hindwing often indicated and the teeth of the discal band reddish-yellow also above: ♀-f. **abderus** Hopff.; in the second form, ♀-f. **amerias** R. & J. (12b), the forewing has besides the submarginal spots a row of brown-grey nebulous discal spots, the red crescents of the hindwing very large. Vera Cruz in East Mexico. — **garamas** Hbn. (♂ = *asclepius* Hbn.; *cinnatus* Boisd.; *concinatus* Gray). ♂: submarginal spots of the upper surface of the hindwing distinct; the yellow-red teeth of the discal band of the hindwing beneath less long than in *abderus*, the part of each tooth placed before the vein shorter than that placed behind it. Forewing beneath without nebulous brown-grey discal spots. The ♀-f. **amisa** R. & J. is similar to the ♂, being distinguished in colour from ♀-f. *abderus* chiefly by the distinct submarginal spots of the upperside of the hindwing; ♀-f. **garamas** Hbn. is similar to the ♀-f. *amerias*, but the nebulous discal spots of the upper surface of the forewing are crescent-shaped, the discal crescents of the hindwing are shorter, the blue spots larger and the submarginal spots thinner than in ♀-f. *amerias*. Both sexes larger than the East Mexican subspecies. West Mexico: Guadalajara, Cuernavaca, Oaxaca. — **baroni** R. & J. Forewing with 5 submarginal spots, the 5. spot much nearer to the margin than the 4.; submarginal spots of the hindwing indicated, the discal band entering the cell; on the under surface of the forewing the submarginal line interrupted at the 2. radial, the posterior part of the line being much nearer the margin than the broader anterior part. The dorsal prong of the fork of the harpe much shorter than the ventral prong. Guerrero, 1 ♂ in the Tring Museum. — **electryon** Bates. ♂: the cell-spot of the discal band of the forewing narrowed towards the costa; no submarginal spots on the upperside of the hindwing. Beneath the band of the forewing is strongly dentate on the disc and there are no nebulous spots present distally to this band; upper prong of the harpe curved downwards. The ♀ not known. Guatemala and (?) Honduras. — **syedra** Godm. & Salv. Cell-spot of the forewing of equal width anteriorly and posteriorly; 5–7 submarginal spots on the forewing, the 3. the largest; discal band of the hindwing more strongly dentate than in *electryon*, large blue spots distally to it; no submarginal spots. Beneath the apical area of the forewing and the basal area of the hindwing pale brown (as in *baroni*), the yellow-red margin of the discal band of the hindwing more deeply coloured than in *electryon* and broader between the veins. The ♀ similar to the ♂; the discal band of the upperside of the hindwing partly yellow-red distally. The upper prong of the harpe of the ♂ reduced to a tooth, the ventral prong long. Costa Rica and Chiriqui. A large form.

P. homerus F. (12a). Similar to the preceding species; the discal band of the forewing continued round the apex of the cell to the costal margin, the cell-spot sometimes isolated; discal band of the hindwing beneath non-dentate, brown, its proximal margin yellowish white, large black spots proximally to the red submarginal spots. — Larva on *Thespesia*, green above, brown beneath, marked similarly to that of *scamander*. Thoracic horn of the pupa short. The insect is apparently not rare at certain places in the interior of Jamaica, but is difficult to catch, as it flies at a considerable height above the ground. According to AARON occurs also in St. Domingo.

P. warscewiczii. Abdomen woolly beneath, brownish yellow like the breast. Forewing without cell-spot, 2 almost parallel rows of spots between cell and margin; hindwing with discal band and submarginal spots, tailed. Beneath the apical area of the forewing and the hindwing are pale brown (all that is visible when the butterfly holds the wings closed together); cell of the forewing with white or yellow spot; hindwing with dentate discal band. The ♀ not known to us. Ecuador to Bolivia; a mountain species. —

jelskii Oberth. Discal spots of the forewing and discal band of the hindwing not sharply defined. Discal spots of the underside of the forewing large and brown, the marginal area much widened before the middle; the brown postdiscal spot between the 3. radial and 1. median larger than in the other forms, the submarginal spot between the 1. and 2. median orange in the middle. The two prongs of the harpe (♂) straight, the upper one much longer than the lower. South Ecuador, North and North-West Peru. — **mercedes** R. & J. Discal spots of the forewing on the whole larger than in *jelskii*, the blue spots of the hindwing broader, the brown marginal area of the underside of the hindwing narrower before the middle, submarginal spot between the 1. and 2. median of the hindwing not orange beneath. The two prongs of the harpe (♂) straight, generally of equal length or the lower one somewhat shorter than the upper. East Peru: Huánuco and Junin. — **warscewiczii** Hopff. (= *sorataensis* Godm. & Salv.) (12b). Discal spots of the forewing much smaller than the submarginal spots; discal band of the hindwing broken up into spots, often only indicated, on the under surface often entering the cell and like the submarginal spots brown. The upper prong of the harpe (♂) strongly curved. South-East Peru and Bolivia.

P. cacicus. Forewing with interrupted discal band, a variable cell-spot, rarely absent, a row of bluish grey postdiscal spots and a row of yellowish white submarginal ones, the last or the last few of the submarginal spots more or less orange; on the hindwing a yellowish white median band, a postdiscal row of blue spots and a submarginal row of yellowish white ones. The ♀ occurs in 3 forms. Venezuela, Colombia, Ecuador and East Peru. — **cacicus** Luc. (12c). ♂: the cell-spot of the forewing, if present, more or less transverse. The 3 forms of the ♀ are: ♀-f. **cacicus** Luc., similar to the ♂; ♀-f. **zaddachi** Dewitz, discal band of the forewing not interrupted and like the large cell-spot brownish orange, hindwing without discal

band on the upper surface: ♀-f. **nais** *R. & J.* like ♀-f. *zaddachi*, but the markings of the forewing white, *nais*. Mérida in Venezuela, Colombia and Ecuador. — **inca** *R. & J.* The cell-spot of the forewing much more *inca*. oblique than in the preceding subspecies, forming with the median vein an acute angle; discal band of the hindwing convex distally, posteriorly strongly narrowed; the tail narrow, non-spatulate. Chanchamayo.

P. euterpinus *Godm. & Salv.* (12c). Tailless; markings of the upper surface yellowish red. The ♀ *euterpinus*. similar to the ♂, somewhat paler and larger. — From West Colombia to North Peru. The butterfly is an enlarged copy of the Pierid genus *Pereute*. The insect is usually considered as nearly allied to *zagreus*, but according to the structure and markings it belongs to the *homerus*-group near to *cacicus*. The butterfly is still very rare in collections.

C. Kite-Swallowtails.

Antenna with more distinct club than in the Aristolochia- and Fluted-Papilios, scaled on the upperside, but the scales, like those of the tibiae and tarsi, easily fall off, the fine sensory hairs are distributed as in the Fluted-Papilios. The dorsal spines of the tarsi are separated from the ventral spines by a spineless, impressed interspace. The wings in most species are thinly scaled, the scales often modified to fine hairs: the blue or green bands of many species of the Eastern Hemisphere are only covered with fine hairs on the underside, the pigment lying in the membrane of the wing, in the American Kite-Papilios also the membrane of the wing is green at least at the base, with the exception of the dark mimetic species. In a great number of these Papilios the 1. or 1. and 2. subcostals of the forewing are distally fused with the costa: the cell of the hindwing is mostly narrow and its anterior margin incurved between the subcostal and the 1. radial. The abdominal margin of the hindwing in the ♂ is widened and usually bent over; in this fold lies a scent-organ, which is rarely absent; the scent-scales are sometimes very different in nearly allied species; but the organ also varies geographically. The apical margin of the 8. abdominal dorsal segment of the ♂, which becomes visible after the removal of the genitalia, is smoothly scaled, the small scales standing erect; except in the Kite-Swallowtails this character is found in no American Papilio; the 10. dorsal segment of the ♂♂ of the American Kite-Papilios is likewise characteristic; this anal process is divided into three parts by two narrow incisions, only in *P. celadon* the process is simple in consequence of the absence of the two side parts. — Unfortunately the larva of only very few species is known. The 3. thoracic segment is swollen, as in the larvae of the Fluted-Papilios; the thoracic segments and the anal segment often bear dorsally short thorns, also traces of tubercles are usually found on the other segments; the pattern consists of small spots, transverse lines or short longitudinal streaks, eye-spots and oblique bands are wanting. — The pupa is shorter than in the other Papilios, the head and thorax are not at all or only weakly curved upwards, the thoracic horn is long and four-sided, the lateral carina forming the prolongation of the raised edge of the case of the hindwing; the abdomen has two dorsal carinae, which converge in front and behind: the anal segment is longer than broad. — The butterflies are in great part longwinged insects with triangular hindwing. The long-tailed forms with the wings spread out remind one of a paper kite. The Kite-Papilios are nimble fliers. Although the mimetic forms usually imitate the sluggish flight of their models (Aristolochia-Papilios, Pierids, Danaids etc.), yet they show great adroitness and speed when they take to flight in alarm. The ♂♂ often congregate in great crowds in moist places, at the edge of rivers, lakes, puddles etc., where they drink with a quivering motion of the half opened wings; they also visit flowers. The Kite-Papilios are insects of the open, sunny part of the wooded districts, of the clearings in the forests and their edges. Naturally this refers more to the ♂♂ than to the ♀♀; the latter, of many species at least, are only rarely taken by the collector, because they have different habits, remaining in the thickets and woods and not joining the crowds of ♂♂ drinking at the water; the ♀♀ of many very common forms are not yet known at all. The Kite-Papilios do not extend so far north as the Fluted-Papilios.

Lysithous-Group.

The species of the *lythisous*-group are characterised by red basal spots on the under surface of the wings. HAASE rightly recognised these forms, so similar in appearance to the Aristolochia-Papilios, as belonging to the Kite-Papilios; all other authors have erroneously classified them with the Aristolochia- and Fluted-Papilios. The bright-coloured larvae are striped longitudinally and bear a V-shaped saddle-spot before the middle; the thorax is spotted. The pupa is short; the abdomen enlarged in the middle. The species are found from Mexico to Argentina.

P. pausanis. A copy of *Heliconius clytia* L. According to BATES the butterfly certainly has the sailing and circling flight of the Heliconians, yet is not, like the Heliconians, a species of the forest shades, but is found on the muddy banks of rivers and lakes or flies round the tops of high trees. Wings above green-blue, with large pale yellow area on the forewing, hindwing short, often truncate. The scent-organ is wanting in the ♂. The ♀ resembles the ♂. From Costa Rica to Northern Brazil (Goyaz). — **prasinus** *prasinus*. *R. & J.* Wings above strongly metallic; discal spots of the forewing longer than in the following form, the white submarginal spots of the hindwing very small, the anterior ones only indicated, the red basal spots of the underside smaller than in the remaining subspecies. Costa Rica. — **cleombrotus** *Streck.* from *cleombrotus*.

West Colombia and probably Panama; as in *prasinus* the forewing without pale apical area; costal area of the upperside of the forewing almost black, in *prasinus* almost as metallic green as the disc; underside of the hindwing without pale (yellow-green or reddish) streaks between the veins. — **pausanias** *Hew.* (= *hermolaus* *Guen.*) (12a). Apex of the forewing with large grey area; under surface of the hindwing between the veins with pale streaks, extending to the submarginal spots. Central Colombia to Bolivia, Orinoco, the Amazons and Goyaz.

P. microdamas *Burm.* (12a). A yellowish band from the costal margin of the forewing to the anal angle of the hindwing; under surface without red basal spots on the forewing, with 4 spots on the hindwing. ♀ similar to the ♂. — Paraguay, Northern Argentina, Caracá in Brazil; a lowland species.

P. protodamas *Godt.* (= *hyperion* *Hbn.*). Forewing with yellowish area consisting of 3 large patches, or with 1 or 2 rows of spots; hindwing with yellowish grey-blue band; forewing beneath without basal spots, hindwing with 3. The scent-organ of the ♂ wanting. Larva black, with grey and white, partly yellow stripes, the thorax dotted with white and yellow. Thoracic horn of the pupa rather thin. Two individual forms of the butterfly are known: in f. **protodamas** *Godt.* the forewing has two rows of spots, the upper ones of which are more or less merged together; in f. **choridamas** *Boisd.* (13b) the forewing has a very large cell-spot and two discal patches, also large. — The butterfly is entirely Brazilian; it is found from Minas Geraes to Rio Grande do Sul: but the f. *choridamas* does not appear to extend so far south, being only known to us from the provinces of Rio de Janeiro and Minas Geraes.

P. phaon *Boisd.* Similar to the preceding species; the spots on thorax and abdomen red, the posterior abdominal segments with red lateral spots. Very variable. Spots on the upper surface of the forewing bluish yellow-grey or purer white-yellow; discal band of the hindwing grey-blue, rarely red. Under surface without distinct cell-streaks, forewing without basal spots, hindwing with 3. Scent-scales present in the ♂. Mexico to West Ecuador and Venezuela. The following forms have been described as species: ab. loc. **xenarchus** *Hew.*, hindwing with broad red band; ab. loc. **eridamas** *Reak.*, the red band of the hindwing narrow, the spots composing it separated; these two forms only known from East and South Mexico; ab. **phaon** *Boisd.* (13b), forewing with submarginal spots, but without discal spots, the band of the hindwing just entering the apex of the cell; ab. **ulopos** *Gray* (= *inmarginatus* *Oberth.*), forewing without spots or with only indications of them, band of the hindwing broad, entering more or less far into the cell; ab. **therodamas** *Fldr.*, with discal and submarginal spots on the forewing and narrow, slanting band on the hindwing, separated from the cell; ab. **metaphaon** *Butl.* has on the hindwing a very large blue-green discal area, occupying a good part of the cell; in ab. **pharax** *Godm. & Salv.* the hindwing has a red anal spot and the discal band is remote from the cell. All these forms are connected with one another by transitions.

P. euryleon. The spots of the breast and abdomen red, the posterior abdominal segments with red lateral spots. Forewing above with yellowish grey area before the hindmargin, hindwing with red discal area or band. Beneath the forewing without red basal spot, the hindwing with three, but the spot placed in the cell commonly only indicated or quite absent, the discal band smaller than above, pale red. ♀ similar to the ♂ or different from it; in the latter case forewing with cell-spot and two discal bands, all white, recalling *pausanias* and *protodamas* f. *choridamas*. Scent-organ of the ♂ usually present. Costa Rica to Ecuador. — **clusoculis** *Bull.* (13c). Discal area of the forewing white-grey; the red band of the hindwing broad, always entering the cell. ♀ similar to the ♂, the red band of the hindwing somewhat broader. Costa Rica; Chiriqui. — **pithonius** *R. & J.* ♂: forewing with small or large grey spot; hindwing with 3–5 red discal spots, the red submarginal spots of the under surface of the hindwing very small or only indicated. ♀ with large cell-spot on the forewing and 2 large discal spots. West Colombia and Cauca Valley. — **euryleon** *Hew.* (13c). ♂: hindwing above mostly with 4 spots placed close to the cell and two small, less distinct spots before the abdominal margin; the discal spots on the underside pale red. ♀: the cell-spot of the forewing narrowed anteriorly, the band of the hindwing entering the cell. Magdalena Valley, Cordillera of Bogotá. — **haenschi** *R. & J.* ♂: area of the forewing lighter grey than in *euryleon*, composed of two spots, the anterior spot projecting distally; hindwing with small cell-spot, which is rarely absent, and 3–5 spots placed close to the cell; beneath the forewing has a large white spot between the 1. and 2. median, a grey spot behind it; hindwing with 3 pale red spots, the 1. and 2. touching the cell, a 4. spot often indicated. ♀: the cell-patch of the forewing does not extend across the cell, band of the hindwing running from the 1. radial to the abdominal margin, entering the cell, behind the cell proximally whitish, as in the ♀ of the *Aristolochia*-Papilio *P. iphidamas calogyne*. ♂ with scent-organ. In Western Ecuador. — **anatmus** *R. & J.* ♂: the grey area of the forewing extending from the hindmargin costad as far as the 2. median or beyond, often a grey streak in the cell; hindwing with 3 red spots, separated from the cell, often only the 3. spot distinct; beneath the forewing without white spot and the discal spots of the hindwing usually grey. ♀ not known. Scent-organ absent in the ♂. East Ecuador.

P. hipparchus *Stgr.* (13d). ♂: forewing with a row of grey submarginal spots; hindwing with pale reddish discal band, extending from the 1. radial to the abdominal margin. ♀ not known. Cauca Valley, Colombia.

P. harmodius. ♂ and ♀ different. The spots on head, thorax and coxae yellowish white. ♂: forewing somewhat transparent apically, before the hindmargin a white area of variable extent, but never reaching to the 3. radial; hindwing with a band of red discal spots. Beneath the cell of both wings streaked with black, forewing with red costal basal spot, hindwing with 3 basal spots. In the ♀ the hindwing similar to the ♂, or the macular band white or yellow; the forewing either without spots, or with white cell-patch and two large discal patches. Colombia to Bolivia; a species of the Andes, very common in the eastern valleys of Ecuador, Peru and Bolivia. Larva not known. — **isus** Oberth. (= aristogiton Stgr.). ♂: the white area of the forewing large, extending from the hindmargin to the 2. median or beyond; discal band composed of 6 or 7 white-centred spots. ♀ not known. — Cauca Valley, Colombia. — **halex** R. & J. Forewing as *halex*. in the preceding subspecies; hindwing with 5 red discal spots. ♀ on the forewing with white area from the 3. radial to the 2. median and a small cell-spot; hindwing with 5 pale red discal spots. Colombia; in Bogotá-collections. — **xeniades** Hew. ♂: the white spot of the forewing very variable, always extending to the hindmargin of the wing, usually excised at the costal side, always small on the underside; hindwing with 3—5 discal spots, which are red above, rarely whitish in the middle, and beneath always reddish white with red distal margin. ♀: dichromatic: ♀-f. **androna** R. & J. (13d) with quite small grey scaling in and behind the cell of the forewing and 5 red discal spots on the hindwing; the second form, ♀-f. **virginia** Kirby, is very similar to the ♀ of *P. erlaces lucydes*, forewing with large white cell-spot and two large discal patches, band of the hindwing white with faint red margins. *Xeniades* occurs in Ecuador and West Colombia. — **imaus** R. & J. (14a). Not constantly different from the ♂ of the following subspecies, forewing above mostly with white streak at the hindmargin, beneath the white spot is usually smaller than in *harmodius* Doubl. ♀ as the ♀-f. *virginia*, but the cell-spot narrowed anteriorly, the anterior discal spot reduced and the band of the hindwing yellow above, almost white beneath. Eastern slopes of the Andes of North and Central Peru. — **harmodius** Doubl. (13c). ♂: forewing above and beneath always with large white spot, not quite reaching to the hindmargin. ♀: the white cell-spot does not extend across the cell; three discal spots, the 1. small, the 2. as long as the 3.; hindwing with red discal spots, larger than in the ♂. South-east Peru (from Chanchamayo southwards) and Bolivia. The ♂♂ common, of the ♀ only 1 specimen known (in coll. CHARLES OBERTHÜR).

P. trapeza R. & J. (13c). Forewing narrower in the middle than in *harmodius*, the hindmargin shorter, a white spot at the hindmargin, not extending to the 2. median; hindwing triangular, sharply dentate, with 2 to 4 red spots from the hindmargin forwards, the posterior spot the largest. Beneath the white hindmarginal spot of the forewing is longer than in all the forms of *harmodius*. ♀ unknown. — East Ecuador and North-East Peru.

P. xynias Hew. (13c). Forewing with large pale green area at the hindmargin; hindwing acutely dentate, with short, narrow tail and a few red discal spots posteriorly. Beneath the forewing has a white, very faintly green hindmarginal spot, which is smaller than the spot on the upper surface. No scent-scales. ♀ not known. — Eastern slopes of the Andes of Bolivia and Peru.

P. ariarathes. Another widely distributed and very variable species, which has more spiny tibiae and a narrower cell in the hindwing than the allied species. Spots on head and breast yellowish grey. Forewing beneath with 2 red basal spots, the hindwing with 3. In the ♂ the forewing usually with grey-white or yellowish band or area from the hindmargin forwards; hindwing with red discal spots, of which often only the one placed at the abdominal margin is distinct. ♀ almost always with white discal spots on the forewing. Scent-scales of the ♂ present. Larva unknown. Colombia to Bolivia, distributed eastwards to Pará and Goyaz. The butterfly is individually and geographically variable; the ♀♀ resemble the ♀♀ of *Aristolochia-Papilio*s and adopt in the different districts their likewise variable dress. The forms all intergrade. We differentiate 6 geographical forms, whether correctly must be ascertained by further investigations based on a larger material than we have seen. The butterfly according to Bates flies with great rapidity in sunny places near plantations; it is no rarity, but is not taken in great numbers. — **ariarathes** Esp. (= *acestes* Bois.) (14a). ♂: forewing with large white spot from the hindmargin to the 2. median, almost as large beneath as above; on the hindwing 4 to 6 separated discal spots, placed separate from one another and from the cell. ♀ with 5 or 6 red discal spots on the hindwing, three long, extending nearly or quite to the cell; in ♀-f. **ariarathes** Esp. the forewing has 1 to 3 white discal spots and often a narrow cell-spot; in ♀-f. **eumelea** R. & J. these white spots are only indicated. French and Dutch Guiana. — **menes** R. & J. ♂: forewing with white band, extending from the hindmargin to the 1. or 2. median, the posterior spot often small or absent, the spot before the 2. median 4—6 mm. long, also always present beneath; hindwing with 3 or 4 red spots midway between cell and margin. ♀ with large discal spot from the 3. radial to the 1. median and a smaller one behind it, sometimes also with indication of spots before the 3. radial and in the cell; 5 or 6 discal spots on the hindwing, remote from the cell. British Guiana. — **evagoras** Gray (13d). ♂: forewing with narrow band, placed at the 3. radial about midway between cell and outer margin or nearer to the cell; beneath the band is replaced by 2 or 3 distinct spots; discal spot of the hindwing partly near to the cell, the band more curved than in the other forms. ♀ with 3 white or yellowish

discal spots and a rather large cell-spot on the forewing; the apical half or two-thirds of the cell of the hindwing red, as are also 6 large discal spots, abdominal margin at least partly red. Venezuela. -

metagenes. **metagenes** *R. & J.* ♂: forewing usually with a band reaching from the hindmargin to beyond the 3 radial, merely indicated on the underside; hindwing with 4 or 5 spots placed separate from the cell. ♀: forewing with the long white discal band which is also peculiar to the *Aristolochia*-Papilios *P. anchises theios* and *P. aglaope*, this band consists of two large spots with a smaller one placed before and behind them; hindwing with 6 red spots, 3 of which are contiguous to the cell. Pará. — **gayi** *Lucas*. ♂ and ♀ very variable: 3 principal forms: f. **anargus** *R. & J.* (13d), forewing without band or spots; f. **cyamon** *Gray* (= *charoba Kirby*) (13d), ♂ with narrow band on the forewing, on the whole somewhat more distally placed than in the ♂ of *eragoras*, ♀ with narrow, indistinct band on the forewing, with cell-spot on the hindwing, the spots on the hindwing sometimes yellowish white; in f. **gayi** *Luc.* (= *aristagoras Fldr.*; *arianus Staud.*) the ♂ has on the forewing a more or less square hindmarginal spot, whilst the ♀ has 1 or 2 large discal spots, usually also a small third spot and often a cell-spot in addition. These different forms are not separated geographically. Distributed from Colombia to Bolivia and the Amazon downwards to Manáos. — **leuctra** *R. & J.* ♂: forewing with a pure white area, of almost even width, reaching from the hindmargin to the 1. median, above about 6 mm. broad and on the underside only a trifle narrower; hindwing with 6 long red discal spots, the 3 middle ones contiguous to the cell. Goyaz, Brazil.

ilus. **P. ilus** *F.* (= *hostilius Fldr.*; *guaco Stgr.* (14a). ♂♀: under surface without red basal spots on the forewing, with 4 red basal spots on the hindwing. Forewing with or without a patch in the extremity of the cell, with 2 or 3 white spots on the disc, the posterior one, placed behind the 3. median, the largest. North Venezuela, Northern Colombia, Panama; rare in collections.

P. branchus *Doubl.* Head and breast with red dots, a spot on the forecoxa white. Wings opaque; forewing with or without white spots; hindwing with broad red discal band. Under surface without red basal spots on the forewing, with 4 such spots on the hindwing. Sexes similar. In the f. **branchus** *Doubl.* (14b) the forewing has a variable white central area, which is absent from f. **belephantes** *Godm. & Salv.* — Mexico to Costa Rica.

belesis. **P. belesis** *Bates* (14b). Similar to the preceding species, hindwing with a band of 6 to 7 red spots, parallel to the margin, placed nearer to the margin than to the cell. Forewing in f. **belesis** *Bates* without white spot, in f. **hephaestion** *Fldr.* with a spot between the 2. and 3. radial and sometimes the indication of a second spot behind the 3. radial. — Mexico to Nicaragua.

P. thymbraeus. The small spots on head and breast grey-yellow, often slightly reddish. Upperside of the wings slightly but yet distinctly metallic blue or green; forewing without markings, but with white fringes; hindwing with a slender tail and 1 or 2 rows of spots between cell and margin. Under surface with red costal basal spot on the forewing and 4 basal spots on the hindwing. Larva on Chirimoya: the thorax dotted with blue and yellow; striped with white and black from the 4. segment backwards, the white stripes with small blue and yellow spots, the sides blue, from the 5. segment dotted with yellow. Pupa green, as in the allied species, appearing constricted at the base of the abdomen. The butterfly flies in the open country the whole year through, and is rather common at a height of 500 to 1560 m. — *thymbraeus*. **thymbraeus** *Boisd.* (14b) is distributed from East Mexico to Honduras. The hindwing in ♂ and ♀ has 2 rows of red spots. — In **aconophos** *Gray* the hindwing has only one row of red spots, the discal row is absent. Central and West Mexico.

P. lysithous. A polychromatic species. The different individual forms with one exception were originally described as species and have been regarded as such until recently. The forms are connected with one another by intergradations; moreover, the specific identity of 3 of the varieties (*pomponius*, *rurik*, *lysithous*) has been proved by breeding. Underside of the forewing with 2 red basal spots, hindwing with 3; all the forms with a tail. Larva on Anona, resting by day on the upperside of a leaf at the middle vein, on the lower branches and root-shoots, near Petropolis all the year round, except in June and July (middle of the dry season); black with yellow longitudinal stripes and white-yellow saddle-spot. The pupa as in the allied species green with yellow lateral streak. Brazil and Eastern Paraguay. The principal forms, which do not everywhere occur together, are the following: f. **platydesma** *R. & J.* (= *harrisianus auct.*) (14b), the white band of the forewing very broad, continued over the cell to the costal margin; *harrisianus*. f. **harrisianus** *Swains.* (= *claudius Boisd.*; *athous Fldr.*), the white band of the forewing broad posteriorly, strongly narrowed anteriorly, not entering the cell, the part from the lower angle of the cell to the costal margin narrow or absent, as in the preceding form the posterior submarginal spots of the hindwing large; *oedipus*. f. **oedipus** *Fldr.* (= *sebastianus Oberth.*) (14a), forewing with double spot from the 1. median backwards, hindwing without white band, the 4 posterior submarginal spots large; f. **lysithous** *Hbn.* (14a), band of the forewing narrow, often abbreviated (ab. **brevifasciatus** *Weym.*), hindwing with small submarginal spots, the discal band usually only extending to the 1. median, sometimes longer and more distal (ab. **extendatus** *Weym.*); f. **rurik** *Eschsch.* (= *rurikia id.* in tab., *laus Boisd.*), band of the forewing abbreviated, hindwing without white band, the 4 posterior submarginal spots rather large; f. **pomponius** *Hopff.*, band of the fore-

wing indicated, or like that of the hindwing entirely absent: f. **eupatorion** *Luc.*, both wings without discal *eupatorion*. band, forewing with yellowish marginal band and the marginal spots of the hindwing enlarged (probably an aberration, only the type known, in col. CHARLES OBERTHÜR).

P. asius *F.* (= *astyages Drury*; *manlius Porty*) (14d). A rather common Brazilian butterfly, distributed from Bahia to Rio Grande do Sul and westward into Eastern Paraguay. A broad band, narrowed towards the costa on the forewing, beginning at the costal margin of the forewing distally to the cell and ending before the abdominal margin of the hindwing: hindwing triangular, with long tail. On the underside the hindwing has 4 red basal spots, two of these placed at the costal margin, in addition a red streak before the abdominal margin and 3 red spots near the anal angle. The ♀ similar to the ♂, very rare in collections. The larva not known to us.

Marcellus-Group.

In the *marcellus*-group there is on the underside of the hindwing a red line running from the costal margin to the anal angle, which at least at the costal margin is edged with black at both sides. The species have bands on the wings, and the triangular hindwing is tailed. The 1. subcostal of the forewing is free: in one species (*bellerophon*) it is entirely absent.

P. marcellus *Cr.* (= *ajax auct.*) (14c). The common Asimina Swallowtail of North America. Antenna brown-yellow; tibiae and tarsi green: forewing with 8 greenish white bands, the green colour in the membrane; the red line of the hindwing beneath margined with white proximally. Scent-scales of the ♂ long. The larva with 6 fine black transverse lines on each segment, the lines usually partly contiguous. The frontal prominences of the pupa divergent, the thoracic horn vertical, the lateral carina continued to the cremaster, not interrupted. Foodplants: Asimina, especially *A. triloba*, also Ericaceae and Lauraceae. This species is one of the classical examples of seasonally variable butterflies. In the specimens which hibernate as pupa once or twice the hairs of the frons are long, whilst they are short in the butterflies emerging from non-hibernated pupae. The principal forms are: forma hib. **marcellus** *Cr.* (= *walshi Educ.*), the spring *marcellus*. form with broad white bands, sometimes red discal spots appearing on the upper surface of the hindwing (ab. **abboti Educ.**); forma hib. loc. **floridensis** *Holl.* is the spring form from Florida, which has broader *abboti*. black bands than *marcellus*; forma hib. **telamonides** *Fldr.* (14c) is the later spring form, which forms the *floridensis*. *telamonides*. transition to the summer form, forewing somewhat longer than in f. hib. *marcellus*, the black bands broader, the fringes of the tail more extended white; forma aest. **lecontei** *R. & J.* (= *marcellus auct. non Cramer*), *lecontei*. large, the black bands broad. — *P. marcellus* occurs from Southern Canada to Florida and Texas and westward into the prairie districts of the Mississippi Plain. Very common where pawpaw trees are found. The flight of the summer brood is more elegant than that of the spring specimens. The butterfly often travels northwards in considerable numbers, flying swiftly near the ground. Indeed in the northern districts where it occurs it is only an immigrant, not a permanent inhabitant.

P. marcellinus *Doubl.* (= *sinon F. non Poda*) (14c). Forewing with pale green bands and a row *marcellinus*. of submarginal spots; hindwing with black submedian band extending to the black distal margin; the red line on the under surface of the hindwing broad, reaching to the brown margin. Scent-scales of the ♂ long. — Jamaica.

P. celadon *Lucas* (= *sinon Godt. non Poda*) (14c). Similar to the preceding species, but on the *celadon*. forewing the pale green discal band is continuous with the 3. and 4. pale green cell-bands, not with the 4. and 5.; the red line on the underside of the hindwing thin, shorter than in *marcellinus*. The anal tergite of the ♂ is not divided, as the lateral prongs are absent. — Cuba; perhaps also in Florida.

P. zonaria *Btlr.* (= *sinon F. non Poda*) (14c). The pale bands narrow; the 4. and 5. pale green *zonaria*. cell-bands of the forewing continuous with the discal band, narrow, separated from one another. — Haiti.

P. philolaus *Boisd.* (14d). Antenna black; the 7. pale green band of the forewing only represented *philolaus*. by a spot; hindwing with 2 red spots posteriorly; on the under surface the red line of the hindwing edged with black at both sides, undulate anteriorly. Scent-scales of the ♂ short, broad, irregular, produced in a number of filaments. The ♀ in 2 forms: ♀-f. **philolaus** *Boisd.* similar to the ♂, the underside paler; ♀-f. **niger** *Eimer* (= *nigrescens Eimer*; *felcis Fruhst.*) (14d), the pale green bands of the membrane of the wings *niger*. scaled with black, the wings therefore black with slight traces of the bands. — Larva not known. The butterfly common from Mexico to Nicaragua, in low situations, often resting in crowds on the sand at the edge of rivers.

P. xanticles *Bates* (= *plaesiolus Stgr.*) (16b). The pale bands yellow, the 7. band of the forewing *xanticles*. continuous with the broad discal band, not as in *philolaus* replaced by a single spot. Two forms of the ♀; the one similar to the ♂, which doubtless exists, has not yet to our knowledge been discovered: the second form, ♀-f. **philenora** *Haase* (= *sheba R. & J.*), is black, with the exception of the yellow submarginal and *philenora*. the red anal spots. Scent-scales of the ♂ as in *philolaus*. — Panama and at the foot of the Santa Marta in North Colombia.

P. oberthueri *R. & J.* (14d). Similar to *philolaus*, the pale bands broader, the white discal area at *oberthueri*. the 2. median about 1½ times as broad as the black marginal area; hindwing narrower than in *philolaus*,

the black median band only extending to the cell; the latter less pointed than in *philolaus*. The scent-scales of the ♂ longer. The ♀ not known. — San Pedro Sula, Honduras (in coll. CHARLES OBERTHÜR). Our figure is too small.

arcesilaus. **P. arcesilaus** Lucas (= *anaxilaus* Fldr.) (14d). Antenna black. Forewing with 6 greenish bands and a row of submarginal spots, the 6. band short, separated from the discal area. Scent-scales of the ♂ long. — North Venezuela and Colombia.

epidaus. **P. epidaus**. Antenna black: wings white, semitransparent, distally almost glassy. The 2. black band of the forewing extends to the hindmargin beyond the middle and the discocellular band is continued to the 2. median or to the posterior angle of the wing. Larva not known. Mexico to Honduras. — **epidaus** Doubl. (15c). The 2. black band of the forewing not more than half as broad as the light interspace between the 2. and 3. bands, generally narrower, the 5. band not extending far beyond the 2. median, not reaching to the marginal band; the posterior part of the median band, on the underside, thin or merely indicated. From East Mexico to Nicaragua, from whence specimens of this form have recently come. —

tepicus. **tepicus** R. & J. 1. and 2. bands of the forewing broader than in the preceding form, 5. band posteriorly joined to the marginal band: hindwing longer and the costal margin shorter than in the other forms. West Mexico: province of Jalisco. — **fenochionis** Godm. & Salr. 5. band of the forewing prolonged to the hinder angle, hindwing much more extended black than in the previous subspecies. South-Western Mexico: Oaxaca, Guerrero.

bellerophon. **P. bellerophon** Dalm. (= *coresilaus* Godt., *swainsonius* Swains.) (15a). The only *Papilio* in which the 1. subcostal of the forewing is absent. Forewing semitransparent, with 4 black bands. ♀ similar to the ♂, with somewhat broader hindwing. Scent-organ of the ♂ woolly. — Brazil: Minas Geraës, Parana, Santa Catarina, rather rare.

Protesilaus-Group.

The species of the following *protesilaus*-group with the exception of *agesilaus* are hard to differentiate without the assistance of their genitalia. The red line on the under surface of the hindwing is only edged with black at one side. These white, black-banded butterflies include some of the commonest *Papilios* of South America; but this applies only to the ♂♂, the ♀♀ on the contrary being very rare in collections. The ♂♂ often rest in dense clusters on damp sand or mud. The larva of only one of the species (*P. stenodesmus*) is known with certainty: it is green, dorsally spotted with black and with transverse bands, sometimes the black markings are absent until a transverse line on the prothorax. The dorsal horn of the pupa is very long. The butterflies are tropical.

P. agesilaus. Easy to recognise by the red line of the hindwing being edged with black distally. Distributed from Mexico to Bolivia and Goyaz in Brazil, not yet known from Nicaragua and Costa Rica, where, however, the insect certainly occurs. — **fortis** R. & J. from South-West Mexico: Guerrero, Atoyac, Oaxaca. The black bands broad, 1. and 2. bands of the forewing about $\frac{2}{3}$ as broad as the interspace, both continued to the hindmargin, or the 2. band at least extending beyond the 2. submedian; the white submarginal band not broader than the black postdiscal band, the latter not divided longitudinally by a pale line; abdominal margin of the hindwing black, the two red anal spots surrounded with black. — *neosilaus*. **neosilaus** Hopff. The black bands narrower than in *fortis*, the 1. and 2. bands of the forewing at most half as broad as the white interspace, the transparent submarginal band broader than the black postdiscal band; abdominal margin of the hindwing partly white, the red anal spots anteriorly broadly edged with white, much less broadly surrounded with black than in *fortis*. East Mexico, Guatemala, British Honduras, *eimeri*. Honduras. **eimeri** R. & J. The transparent submarginal band of the forewing between the 4. and 5. subcostal at most as broad as the black postdiscal band which is placed at its proximal side. West Colombia, upper Cauca Valley and Panama. — **agesilaus** Guér. (= *conon* Hew., *septemlineatus* Eimer) (15c). Postdiscal band of the upperside of the forewing without light median line, narrower than the costal half of the transparent submarginal band; subbasal band of the upper surface of the hindwing only represented by a thin streak placed on the 2. median. Very variable in size. Central and East Colombia, North *autosilaus*. Venezuela. — **autosilaus** Bates. Postdiscal band of the forewing divided longitudinally by a pale streak, subbasal band of the hindwing present on the upperside. Orinoco, Guiana, the Amazon, Goyaz, the eastern slopes of the Andes from Ecuador to Bolivia, as well as Paraguay, not yet known from South-East Brazil: like the preceding subspecies very common.

P. glaucolaus. In order to differentiate this and the following species with certainty, it is necessary to compare specimens from the same districts, and at times to take the sexual organs into consideration. In *glaucolaus* the black postdiscal band of the forewing is widely separated from the lower angle of the cell, or the teeth of the hindwing are very obtuse and the posterior submarginal spots suffused with brown. Scent-scales of the ♂ as long as in *protesilaus*; the harpe has at the dorsal edge a very long tooth and the central and ventral processes are short, the latter not reaching to the ventral edge of the clasper. From Panama to Guiana, Upper Amazon, southwards to Matto Grosso, not yet known to us from South-East Peru, Bolivia, Paraguay, Brazil proper and the Lower Amazon. Only ♂♂ in collections. A common species. *glaucolaus*. Larva not known. — **glaucolaus** Bates (15a). Greenish, bands 1 and 2 of the forewing not extended beyond

the 2. submedian vein, the 6. band 2 to 3 mm distant from the lower angle of the cell, not narrowed before the 2. radial, the transparent submarginal band at least twice as broad at the 5. subcostal as the black marginal band. Panama; Colombia, with the exception of the province of Cauca, perhaps also in North Venezuela. — **melaenus** *R. & J.* The black bands broader than in the preceding form, the transparent submarginal interspace of the forewing usually only little or not at all broader at the 5. subcostal than the marginal band, in some specimens, however, much broader, in which case the interspace between bands 5 and 6 is narrowed correspondingly. West Colombia and upper Cauca Valley. — **leucas** *R. & J.* Wings only distinctly green towards the base; postdiscal band of the forewing narrowed near the lower angle of the cell and usually before the 2. radial. Hindwing more obtusely dentate than in *protesilaus*, the submarginal spots tinged with brown, 2. band of the forewing from the cell backwards narrower above than beneath, the side of the frons white. The harpe of *leucas* more obtuse than in *glaucolaus*, the dorsal tooth narrower and the central process longer. Orinoco, Guiana, the Amazons, East Ecuador, East Peru and Matto Grosso; common.

P. molops. The 1. and 2. black band of the forewing broad and both or at least one of them extending to the hindmargin, the 4. band usually reaching quite across the cell. The denticulate, deflexed dorsal margin of the harpe rounded-dilated. ♀ unknown. Tropical South America, widely distributed, but only singly among the white butterflies of this group. — **molops** *R. & J.* Antenna brownish yellow; the black lateral stripe of the abdomen as broad as the yellow-white stripe placed at its dorsal side; 1. and 2. band of the forewing broad, the 1. not extending to the hindmargin, the other bands likewise broad, the 6. especially is broader than in all the other forms of the *protesilaus*-group, being at least as broad as the interspace between bands 5 and 6; this 6. band close to the lower angle of the cell. Dorsal margin of the harpe abruptly dilated. North-West Ecuador and West Colombia. — **hetaerius** *R. & J.* (15b). Easy to differentiate from the preceding form by the thinner black bands: it is so similar to the *protesilaus* forms occurring together with *hetaerius* as to be easily mistaken for them, but is much smaller than the Colombian *protesilaus* and has a much less sharply dentate hindwing. Sides of the frons always white; 1. and 2. band of the forewing extending to the hindmargin, or the 2. band very little abbreviated; the white submarginal lunule between the 1. and 2. radial of the hindwing narrower than the corresponding marginal lunule; the interspace between the subbasal and median band on the under surface of the hindwing longer than in *protesilaus*. Harpe somewhat different from the harpe of *molops*, dorsal and ventral edges more denticulate, the ventral process longer and curved towards the ventral edge of the clasper. Guiana, Amazons, Colombia, Ecuador (except the western side), Peru and Bolivia. — **megalurus** *R. & J.* Antenna black as in the Brazilian *protesilaus*; frons laterally white; the white subdorsal line of the abdomen thin; 1. and 2. band of the forewing extend to the hindmargin, 6. band separated from the angle of the cell; the black markings of the hindwing somewhat more developed than in *hetaerius*, the red anal spot longer; tail long and broad. Dorsal edge of the harpe less dilated than in the other forms of *molops*. Brazil: Leopoldina, but probably more widely distributed.

P. protesilaus. Submarginal spots of the hindwing white, rarely slightly yellowish, hindwing more strongly dentate than in *glaucolaus*, the 1. and 2. band of the forewing on the whole shorter than in *molops*. Frons sometimes entirely brown-black. The scent-scales very long and thin. The dorsal edge of the harpe deflexed, lying flat on the harpe, strongly dentate. Larva not known. Mexico to South Brazil. — **penthesisilaus** *Fldr.* Large; dorsal streak of the abdomen very narrow; 1. band of the forewing extending to the 2. submedian vein, 2. band a little beyond it; 4. band short, triangular, rarely reaching to the 2. cell-fold; 6. band separate from the angle of the cell, somewhat narrowed before the 2. radial, posteriorly almost always separated from the marginal band; red anal spot of the hindwing large, marginal teeth partly strongly projecting, fringes white except at the extremities of the veins. Apex of the harpe pointed, dorsal edge rounded. Mexico, the only form of this group which occurs so far north; it is found in Vera Cruz, Yucatan, Atoyac, Oaxaca etc., in wooded districts, and in the South intergrades completely with the next form. — **macrotilaus** *Gray* from Guatemala, British Honduras, Honduras and Nicaragua. 1. and 2. bands of the forewing narrow, the 4. is absent or is only represented by a costal spot, the 6. somewhat angled at the 2. radial and narrowed costad, posteriorly connected with the marginal band; the latter less sharply defined and somewhat paler than in *penthesisilaus*, transparent, submarginal band with hairy scales; red anal spot of the hindwing narrower than in *penthesisilaus*. Apex of the harpe truncate, central process shorter than in the Mexican form, spatulate, strongly dentate at the apex, ventral process not extending to the clasper, curved backwards. — **leucones** *R. & J.* Black dorsal line of the abdomen absent or thin; 1. band of the forewing thin, 2. extending to the hindmargin or nearly to it, the interspaces between 1. and 3. of equal breadth at the median vein; the white marginal and submarginal spots of the hindwing large, the margin only black at the extreme tips of the veins, but the fringes from the costa to the 2. radial partly black; red anal spot large. Harpe similar to that of *macrotilaus*, some of the teeth of the ventral edge enlarged, ventral process non-dentate, not extending to the lower edge of the clasper, the teeth of the spatulate central process more or less curved dorsal. Manauré, at the foot of the Santa Marta in North Colombia; probably this form inhabits the north coast of Colombia. — **dariensis** *R. & J.* Dorsal line of the abdomen

broad, the margin of the hindwing between costa and 1. radial entirely or almost entirely black. The dilated part of the dorsal edge of the harpe distally with triangular tooth, ventral process denticulate from the base to the tip. Very similar to *archesilaus*, forewing at the base broader green, the black bands somewhat thinner, band 1 not extending beyond the 2. submedian, band 4 rarely reaching to the 2. cell-fold; hindwing less strongly dentate than in *archesilaus*, the subbasal band of the forewing beneath narrower. Wings of the ♀ slightly yellowish, especially the anal region of the hindwing. Costa Rica, Panama and the islands off the West coast of Panama. — ***archesilaus* Fldr.** (= *rubrocinctus* *Eimer* partim) (15a). On the whole considerably larger than *protesilaus*, hindwing more strongly dentate, the apex of the cell of the hindwing beneath more or less edged with red. Colombia, West Ecuador and North Venezuela. — ***protesilaus* L.** (15c). Bands 1 and 2 of the hindwing usually extend beyond the 2. submedian, band 4 mostly goes beyond the middle of the cell and sometimes reaches to its hinder margin, the transparent submarginal band has at least in the costal third brownish scales; hindwing more strongly dentate than in *glaucolaus leucas*. Frons in specimens from the Andes often entirely brownish black. Dorsal edge of the harpe dilated into a tooth, which is sometimes absent in specimens from the Andes. Orinoco, Guiana, the Amazon from Pará upwards, and Eastern slopes of the Andes of Ecuador, Peru and Bolivia. — ***nigricornis* Stgr.** (= *leilus* *Swains.* partim). Antenna usually black; frons brownish black, not white at the sides. Dorsal edge of the harpe with large tooth. East Paraguay and Brazil.

***helios*.** ***P. helios* R. & J.** (15b). Antenna and frons brownish black as in *nigricornis*. Wings brownish; forewing transparent; hindwing more sharply dentate than in *nigricornis*, the black postdiscal band straight, not interrupted posteriorly as in the *protesilaus* forms, the marginal and submarginal bands yellowish. Under surface more yellow than upper; the red line of the hindwing distally edged with white. Dorsal edge of the harpe not dilated into a large tooth, the apex of the harpe pointed, ventral process not denticulate. — Brazil, only known to us from Parana.

***orthosilaus*.** ***P. orthosilaus* Weym.** (16c). Antenna yellow-brown, not black. Frons yellowish white at the sides. Forewing transparent; hindwing strongly dentate, above also with a median band, the postdiscal band and the black margin merged together into a broad marginal band, the yellowish marginal and submarginal lunules smaller. — Paraguay and Goyaz in Brazil; rare, to our knowledge only 3 ♂♂ at present known.

***earis*.** ***P. earis* R. & J.** (16a). Antenna dark yellowish brown. Frons yellowish at the sides. Wings slightly yellowish, beneath slightly reddish; bands narrow, 4. band of the forewing reduced to a small spot, 6. band close to the lower angle of the cell; the yellowish marginal and submarginal spots of the hindwing narrow, above and beneath smaller than in the name-typical *protesilaus*; hindwing beneath with long arrow-shaped patch before the abdominal margin, this patch reduced in *protesilaus*. Dorsal margin of the harpe slightly widened, ventral process non-dentate, not extending to the lower edge of the clasper, central process short, broad, spatulate, strongly dentate. ♀ not known. — Eastern Ecuador, probably more widely distributed.

***stenodesmus*.** ***P. stenodesmus* R. & J.** (15b). Antenna black. Frons laterally white. Forewing distally transparent, the bands thin, interspace between band 1 and 2 half as wide again as that between bands 2 and 3; hindwing longer than in *protesilaus* and *telesilaus*, usually slightly yellowish, strongly dentate, median band of the under surface somewhat curved, placed nearer to the extremity of the cell than in *protesilaus* and *telesilaus*. Dorsal edge of the harpe not dilated. For larva and pupa see p. 40. — Paraguay; Brazil, from Petropolis to Blumenau; a common species, usually mistaken for *protesilaus* and *telesilaus*.

***telesilaus*.** Body and wings yellowish; antenna brownish yellow, frons white at the sides; submarginal and marginal spots of the hindwing yellow. Dorsal edge of the harpe slightly or not at all dilated; central process either simple or ventrally denticulate at the base. Scent-scales shorter and broader than in the other species of this group, with the exception of *agesilaus*. Larva not known with certainty. Panama to South Brazil; the ♂♂ very common, often resting together with *protesilaus*, *agesilaus*, *glaucolaus*, etc., on damp sand or mud. — ***dolius* R. & J.** Band 1 of the forewing not prolonged to the hindmargin; margin of the hindwing more extended white than in the next subspecies; subbasal band of the underside of the hindwing not entering the basal cell. Dorsal edge of the harpe only very feebly dentate, scarcely at all dilated, central process not denticulate ventrally at the base. Panama and West coast of Colombia. —

***telesilaus*.** ***telesilaus* Fldr.** (16a). Band 1 of the forewing continued along the 3. submedian; subbasal band of the hindwing beneath entering the basal cell. Dorsal edge of the harpe dilated, denticulate, central process with dentate ridge ventrally at the base. Central Colombia to Guiana and Pará, distributed southwards to Bolivia, Paraguay and Rio Grande do Sul.

Thyastes-Group.

In the species of the densely scaled *thyastes*-group the hindwing has on the under surface a red or brown-yellow band, which runs about parallel with the outer margin and begins at the costal margin beyond the middle. In all the species the 1. subcostal anastomoses with the costa, which does not occur in the preceding groups.

***P. marchandi*.** Hindwing beneath with brown-yellow discal band. Markings of the upper surface yellow, both wings with yellow discal area and submarginal spots, the area of the forewing continued towards

the costa by several spots. Larva not known. Mexico to West Ecuador. — **marchandi** *Boisd.* (16b). The *marchandi*. brownish yellow discal band of the hindwing beneath usually curved anteriorly. Discal area of the upper surface of both wings deep dark yellow. Mexico to Honduras, in hilly country, in Guatemala common up to 2500 ft. — **panamensis** *Oberth.* The yellow colour on the whole paler than in the northern form, some- *panamensis*. times pale yellow, the submarginal spots between the 2. radial and the 2. median of the hindwing larger, the discal area of the forewing more deeply indented at the veins. Costa Rica to West Ecuador.

P. thyastes. Forewing with complete or interrupted yellow discal band and hindwing with large yellow discal area; underside of the hindwing with red discal line. Ecuador to Bolivia; Brazil. — **thyastinus** *thyastinus.* *Oberth.* The submarginal spots between the 2. and 3. radial of the forewing separated by a corresponding discal spot, discal band usually interrupted at the 3. radial, the 1. submarginal spot is absent or small. Eastern slopes of the Andes from North Ecuador to Central Peru, Upper Amazon. — **zoros** *R. & J.* Like the preceding; *zoros*. the 1. submarginal spot of the forewing sharply defined; the discal spot between 2. radial and 1. median usually truncate distally, the upper angle not rounded. South-East Peru and Bolivia. — **thyastes** *Drury thyastes.* (= *diaphorus* *Hbn.*) (16b). Paler yellow than the Andes forms; discal band of the forewing not interrupted, or only very slightly, the submarginal spot between the 2. and 3. radials quite close to the discal spot or partly merged together with it; the black discal area of the hindwing not entering the cell. Southern Brazil, only known from São Paulo to Rio Grande do Sul.

P. dioxippus *Hew.* (16c). Wings on the upper surface with common green-yellow triangular area; *dioxippus*. forewing with vestiges of costal bands; hindwing with 2 red spots at the anal angle. — Very common in Bogotá-collections; Valleys of the Cauca, Magdalena and Meta Rivers, at moderate elevations. ♀ not known.

P. lacandones. The discal area of the forewing extends costad to the lower angle of the cell or beyond it. Guatemala to Bolivia. ♀ not known. — **lacandones** *Bates* from Guatemala and Panama. Fore- *lacandones*. wing with 4 thin submarginal spots, discal area extending anteriorly beyond the 2. radial. — **diores** *R. & J.* *diores.* (16b). Forewing broader, with 5 submarginal spots which are larger than in the preceding subspecies, discal band not extending beyond the 2. radial, the subapical spot of the cell much smaller than in *lacandones*. Eastern slopes of the Andes of Ecuador, Peru and Bolivia.

P. calliste. Bands and spots of the wings pale yellow or greenish yellow, similarly arranged as in *dioxippus*; submarginal row of the forewing curved; hindwing with 2, rarely 3 red spots, and with 2 very large greenish yellow marginal spots from the 2. radial to the 1. median; underside of the hindwing with pale marginal band. ♀ not known to us. Mexico to Costa Rica. — **calliste** *Bates* (= *lorzae* *Boisd.*) (16b). *calliste*. The two outer cell-bands of the forewing clearly developed and the last but two more or less indicated, the discal area emarginate at the cell before the 2. median. Western Mexico, Guatemala and British Honduras. — **olbius** *R. & J.* Larger than the preceding form; also the outer cell-bands of the forewing suffused with *olbius*. black in the middle; discal band broader, the black marginal area on both wings consequently narrower than in *calliste*; submarginal line of the forewing only vestigial from the 1. median backwards. Costa Rica.

P. leucaspis. Frons entirely brownish black; abdomen yellowish beneath; the wings with common triangular green-yellow area; the brown marginal area with blackish lines parallel to the margin. ♀ not known. Colombia to Bolivia; a very common species in the Andes. — **lamis** *R. & J.* The posterior cell-spots of the *lamis*. forewing large, very distinct also beneath. Colombia. — **leucaspis** *Godt.* (16c). The cell-spots of the fore- *leucaspis*. wing smaller, usually only indicated beneath, the two outer posterior cell-spots more widely separated from one another. Eastern slopes of the Andes, from Ecuador to Bolivia.

Doliceon-Group.

The 7 following Papilios form the *doliceon*-group. In these species no red or yellow band is present on the under surface of the hindwing. In some species only the 1. subcostal of the forewing is confluent distally with the costa, whilst in others the 2. subcostal also anastomoses with it.

P. serville. Forewing with broad black cell-band, which runs obliquely from the costal margin to the marginal area, being united with the latter. In the forewing the 1. and 2. subcostal distally confluent with the costa, the 2. subcostal rarely free. ♀ not known. North Venezuela, Colombia to Bolivia. Common. — **acritus** *R. & J.* The spots on head and breast small, also the yellowish lateral stripe of the abdomen *acritus*. reduced, these markings sometimes absent; cell of the hindwing usually without blackish streaks. North Venezuela, East and Central Colombia. — **serville** *Godt.* (= *servillei* *Boisd.*, *boliviana* *Weeks*) (16c). The *serville*. spots on breast and head always present, abdomen with 2 yellowish stripes on each side, of which the upper one is broad; cell-streaks of the forewing distinct, the subapical area of the cell always shaded with brown; the pale patches before the margin of the hindwing, on the under surface, more distinct than in *acritus*. West Colombia and Ecuador to Bolivia.

P. columbus *Koll.* (= *hippodamus* *Fldr.*, *burtoni* *Reak.*) (16c). Very nearly allied to *serville*; the *columbus*. narrow green costal band of the forewing more oblique than in *serville*, marginal area of the forewing beneath more purplish white, the blackish lines in it and the yellowish streak on the underside of the

abdominal fold of the hindwing less distinct than in *serville*; the black distal area of the hindwing sometimes touches the cell, but does not enter it. Specimens with yellowish instead of deep red anal spot are abundant. *fulva* Oberth. ♀ similar to the ♂. Cordillera of Bogotá to the West coast of Colombia, North-West Ecuador; common; a ♀ in coll. H. J. ADAMS.

P. orabilis. Club of the antenna black; the black median band of the forewing does not extend to the marginal area, hindwing with long red anal spot, which reaches to the 2. median. ♀ not known. *orabilis*. Guatemala to West Colombia. — *orabilis* Bth. The oblique discal band of the hindwing not marked above. *isocharis*. Costa Rica, Panama and (doubtfully) Guatemala. — *isocharis* R. & J. (17a). Median band of the forewing always extending to the 2. median; the black marginal area of the hindwing broader than in *orabilis*, with an oblique spur pointing forwards, which corresponds to the posterior part of the discal band of the under surface. West Colombia.

P. salvini. *P. salvini* Bates (17b). The black bands very much reduced, a narrow band in the middle of the cell, not extending beyond the median vein; under surface glossy white; hindwing with black-brown discal band which runs almost straight from the costal margin to the red anal spot. 1. and 2. subcostals of the forewing distally confluent with the costa. ♀ and larva not known. — Guatemala, British Honduras and (doubtfully) Yucatan; most of the specimens in collections come from the woods in Northern Vera Paz, Guatemala.

P. callias. *P. callias* R. & J. (= *columbus* Hew. non Kollar) (17a). The short cell-band of the forewing much broader than in *salvini*, the discocellular band also short and broad, confluent with the marginal area at the lower angle of the cell; hindwing shorter than in the preceding species: the marginal tooth placed before the thin tail prolonged, thin. Hindwing beneath with black discal band, divided into two branches at the extremity of the cell; this band in the ♀ more distal, placed quite near to the marginal area, with which it is almost confluent. — East Ecuador, Peru and the Amazons.

P. dolicaon. Head and breast black, dotted with white. Black cell-band of the forewing oblique as in *callias*, but still broader than in that species, a macular band between the cell and apex of the wing. Hindwing rounded, with thin tail, beneath with forked discal band, the proximal branch of the fork running to the abdominal margin. The 1. subcostal anastomoses with the costa, 2. subcostal free as in *callias*. Larva not known. Colombia to Paraguay and South Brazil. — *hebrus* R. & J. The white subapical area of the cell of the forewing narrowed costad; hindwing more strongly rounded than in the other subspecies. Under surface of both wings purplish; the discal area of the forewing divided into spots by broad black vein-streaks; hindwing yellowish. Colombia: Magdalena Valley and Cordillera of Bogotá. — *deileon* Fldr. (17a). Marginal band of the hindwing beneath narrow below the 1. radial, at the 2. radial only 1—2 mm broad, the proximal branch of the discal band traversing the cell at the base of the 2. median, the greenish white apical spot of the cell much larger than the spot placed at its costal side. East Ecuador to Bolivia and Matto Grosso, and the Amazon downwards to Pará; according to FELDER also from "Bogotá", but his specimens may be from the East side of the Cordillera of Bogotá or from North-East Ecuador. — *tromes* R. & J. Green-white subapical area of the cell of the forewing above very faintly shaded with black; marginal band of the hindwing broad, the green-white spots placed at the apex of the cell between the 1. and 3. radials small; marginal band of the underside of the forewing below the 1. radial only about 1 mm broad; the proximal branch of the discal band of the hindwing placed somewhat distally to the base of the 2. median, green-white apical spot of the cell at most as long as the spot placed before it between the 2. subcostal and the 1. radial. North Venezuela. — *dolicaon* Cr. Marginal band of the forewing beneath at the 2. radial 3—5 mm broad in the ♂, somewhat narrower in the ♀; proximal edge of the marginal area of the hindwing above remote from the cell; proximal branch of the discal band of the hindwing beneath as in *tromes* distal to the base of the 2. median vein; the brownish yellow postdiscal spot between the 2. subcostal and 1. radial placed transversely to the veins. Orinoco; Guiana. — *deicoon* Fldr. The white subapical spots of the forewing large; the black marginal area of the hindwing narrower than in the other forms. Paraguay; Brazil, from Rio Grande do Sul to Goyaz.

P. iphitas. *P. iphitas* Hbn. (= *dolicaon* Godt. non Cramer) (17a). Similar to *dolicaon*; yellow, the black marginal area of the forewing narrower posteriorly; the oblique discal band of the hindwing on the upperside present from the black marginal area at least to the 2. subcostal. ♀ not known to us. — Brazil, in hilly country: Espirito Santo, Organ Mountains in the province of Rio de Janeiro, and Pernambuco.

2. Genus: **Euryades** Burm.

Frons with short hairs. Tibiae naked, not woolly, furnished with a few bristles; tarsi short. Antenna with ~~one~~ club and a row of sensory grooves at each side. Stalk of the subcostal fork of the forewing as long as the posterior branch (= 5. subcostal vein), 1. radial before the middle of the cell; basal cell of the hindwing from 2. subcostal vein very distal, branching from the cell at about the same height as the 2. median, apex of the cell rounded, the lower angle obtuse. The bipartite claspers of the ♂ not quite

closed together; the ♀ after copulation with so-called pouch. Larva on *Aristolochia*, and like the pupa, formed and coloured quite as in the *Aristolochia-Papilio*s of the *Papilio perrhebus* group. In these *Aristolochia-Papilio*s we find already a rudimentary pouch; in *Euryades* it is large, bilobate. — This genus is confined to the Rio Paraná (with its tributaries), Argentina and Paraguay; 2 species, which are both sexually dimorphic.

E. duponcheli Luc. (17b). Tailed. ♂ velvety black, with a yellow band of large patches in the middle and on the hindwing also 2 rows of red spots, of which the submarginal row is only more or less indicated above. ♀ yellow-brown, black distally and in the cell of the forewing, the macular band above only indicated by 2 subcostal patches, which are situated on the forewing; the red spots of the hindwing above vivid red; under surface for the most part grey-yellow. — From Buenos Aires northward, commonest in North-West Argentina.

E. corethrus Boisd. (17b, c). Tailless. ♂ much paler than in *duponcheli*, semitransparent; hindwing also above with a band of yellow spots outside the red discal spots. ♀ likewise paler than in the preceding species, the margin more narrowly black, the very pale red submarginal spots of the hindwing large, the discal row on the contrary replaced by black spots, only the last always dotted with reddish grey, but often also the first and sometimes the next two as well. — Not quite so common as the preceding species and not so widely distributed; more in the neighbourhood of the Rio Paraná and Rio Paraguay.

3. Genus: **Baronia** Salv.

Antenna short, with broad club. Legs likewise very short, femora with long hairs, before the extremity with some stiff bristles, tibiae rough with bristles; 1. segment of the tarsus about $\frac{1}{3}$ as long as the tibia; the spur of the foretibia reaching to $\frac{3}{4}$. Forewing rather narrow, 1. and 2. subcostals close together, the 1. confluent with the costa and partly also with the 2. subcostal, the 3. absent, the 4. and 5. rather long stalked; 1. radial arising from the cell; hindmargin of the cell almost straight, no median spur; hindwing rounded, with large basal cell, the 1. subcostal, which closes it distally, very weak; precostal forked, 2. subcostal branching off much more distally from the cell than the 2. median. Scales of the wings rounded. — The only known species belongs in the neighbourhood of *Parnassius*. — Guerrero, West Mexico.

B. brevicornis Salv. (17c). Mr. O. T. BARON discovered this peculiar insect in the neighbourhood of the town of Chilpancingo, recently destroyed by an earthquake, where the butterflies were flying in June and July at a height of 4500 ft. He only took 5 specimens, which are in the collections of GODMAN, ROTHSCHILD and the California Academy. Blackish brown, with pale yellow markings; all the spots of the hindwing beneath are silvery white as well as the apical and submarginal spots of the forewing. ♀ somewhat larger than the ♂, the light markings more extended.

4. Genus: **Parnassius** Latr.

For the general characters the reader is referred to the descriptions in Part I, Vol. I, p. 19. A special distinguishing feature of the genus is the absence of the hindmarginal vein in the hindwing and of the transverse vein present in the genus *Papilio* s. str. between median and submedian near the base of the forewing. A striking characteristic moreover is the pouch (Abdominaltasche, poche cornée) of the impregnated female, mentioned in *Euryades*, which besides is only found in a few of the allied genera, namely in *Eurygus* Boid., *Luchdorfia* Crüg., also occurring in a single species of the genus *Papilio* (*P. proneus* Hbn.) (JORDAN) and in the whole family of Acraeidae. Exhaustive observations and investigations have been devoted to the nature of this appendage. It is not an organ of the body, but a product of the insect itself, and is produced during the copulation of the sexes in this way, that the ♂ ejects from a gland at the anal extremity a secretion which hardens very quickly, and in the moment of ejection with the assistance of a special membranous organ (peraplast) assumes a definite form and is attached to the abdomen of the ♀ (SIEBOLD, THOMSON, SCUDDER). This product is therefore an independent creation of the organs of copulation, but its form appears to depend on the peculiar structure of these, and is therefore to be regarded as a valuable means of help in the differentiation of the species and in arranging them into natural groups. Concerning the purpose of this peculiar appendage nothing is known with certainty. One would suppose that it plays some part in oviposition, but this is contradicted by THOMSON's observations in breeding *Parnassius apollo* L. in the Insectarium of the Zoological Gardens in London; he is of the opinion that the pouch is without any utility after copulation. The fact that ♀♀ of *Parnassius* species have been taken, in the pouch of which a loose egg was found, permits the supposition that the insect carries this with it until it has found a suitable place for laying.

The *Parnassius* forms are inhabitants of the mountains in the Northern temperate zone, entirely wanting in the tropics, subtropics and the Southern temperate zone of America, even in those heights of the Cordillera which would suit their conditions of life. Their area of distribution is confined to a Western strip of North America. As Southern limit about 35° N. Lat. may be taken, in the East the principal chain

of the Rocky Mountains forming the boundary line, whilst northwards they extend in Alaska as far as the polar circle; in the mountains they ascend to about 4000 m (14 000 English ft.).

America possesses representatives of only two of the groups into which *Parnassius* can be naturally divided according to the abdominal pouch, of which *P. thor*, *clodius* and the allied forms are to be classified with the Palaearctic *clarius*-group with whitish, elongated, vesicular pouch, whilst the *smintheus* forms belong to the *apollo*-group, in which the pouch is small, dark brown, carinate beneath, and pointed like a leaf.

P. eversmanni Mén. (vol. I, 10g) is represented in Alaska by a form with narrowed bands, to which *thor* is to be applied the name of **thor** H. Edw., proposed for the ♀. Ground-colour of the ♂ yellow as in the Asiatic form, markings of the wings agreeing rather closely with those of the ♀ of *P. clodius*, but the bands and spots narrower, and the discal band outside the cell somewhat further removed from it, less irregular and more sharply defined; the hindwing without submarginal crescents, only 2 indistinct patches near the disc, the basal and hindmarginal area blackish, at the usual places 2 ocelli filled in with red, the posterior one connected with a black anal spot by a narrow band-like shading. ♀ whitish with broadened bands, the anal spot on the hindwing with two red dots, its connection with the posterior ocellus broader, near the outer margin a row of sharp black lunules. Only 3 specimens (1 ♂, 2 ♀♀) known: at the upper course of the Yucon River, June.

clodius. **P. clodius** Mén. (17d) is very nearly allied to *eversmanni*. Ground-colour white, only in the ♀ the short costal band placed outside the cell connected with the hindmarginal spot by an irregular dusty band, the glossy submarginal band of the forewing sharp but narrow, the ♂ with small, the ♀ with larger, crescent-shaped submarginal spots on the hindwing; on the latter the anal spot mostly centred with red. Coast district of Oregon and California, southwards to about San Francisco. The biology is still unknown. It is suspected that Viola is the food-plant, perhaps also Sedum and possibly Vaccinium or Rubus (dewberry) (WRIGHT). Is commonly (even in recent works) confused with the specifically different *P. clarius* Eversm. from Asia, or this name is applied to the mountain form of the species (see further below). — Ab. **altaurus** Dyar is an aberration from the name-typical form with yellowish instead of red anal spots. — In the Northern adjoining districts occurs a race, larger on the average, with much broadened marginal pattern on the forewing. Marginal and submarginal bands are merged into a broad stripe, through the middle of which runs only one row of small white crescents. This form has been introduced as **claudianus** Stich. (17c). In the ♀ the black band-pattern is less intensive but broader, the connection of the costal spot and hindmarginal spot only shadowed as a narrow streak, on the hindwing very large marginal lunules, the anal spot without red dot. Washington Ter., Vancouver Island, types No. 27918 to 27921 in the Kgl. Zool. Museum Berlin. There are transitions to the typical form. — **baldur** H. W. Edw. (17e) occurs in the mountains to the East of the district of the principal form. This is distinguished by reduced and less sharp markings. In the ♂ the hindmarginal spot is mostly absent on the forewing and the anal spot on the hindwing; the posterior ocellus is reduced as a rule; the ♀ has no submarginal crescents on the hindwing, the anal spot is rarely centred with red; in both sexes the white dusting very thin, somewhat transparent. Sierra Nevada, about from the Emigrant to the Truckee Pass; also reported from the Wahsatch Mountains (Utah). Varies rather considerably, and forms on the one hand transitions to the coast form, on the other hand there occurs a further reduction of the pattern. Specimens with point-like, reduced posterior ocellus are not rare: ab. **lusca** Stich. (17e); or those in which the two ocelli only remain as vestiges: ab. **menetriesii** H. Edw. (17e). On the other hand ab. **lorquini** Oberth., in which the ocelli are entirely absent, occurs only sparingly. In the type of this form in addition all the black markings also are effaced except two narrow oblong spots in the middle and at the end of the cell of the forewing and some blackish dusting at the hindmargin of the hindwing. — A further race from Montana, **gallatinus** Stich., is distinguished by the band-pattern of the ♂ being in general weakly marked, while on the contrary there is a complete discal band outside the cell, as in the ♀ of the typical form; hindwing without anal spot and with small ocelli; the ♀ is more strongly marked, partly dusted over with black, the forewing with broader submarginal band, on the hindwing the submarginal lunulus and the anal spot strongly developed. Gallatin County (ELROD).

smintheus. **P. smintheus** Doubl. is an American representative of the Asiatic *P. phoebus* F. Ground-colour chalk-white, forewing with the peculiar black spots of the *apollo*-group, in the typical form an incomplete submarginal band on the forewing, the costal spot faintly centred with red, the transparent border narrow at the outer margin, commonly only extending to the middle of the wing, interrupted by white marginal spots, the white fringes spotted with black at the extremities of the veins; hindwing with 2 small ocelli, filled in with red, hindmarginal spot as a rule weakly indicated. ♀ as a rule somewhat larger, forewing with larger costal spots, filled in with red, strong hindmarginal spot and broader margin, hindwing with larger ocelli, 1—2 anal spots filled in with red and a row of submarginal crescent spots. Extraordinarily variable in size and markings, in the ♂ the submarginal band of the forewing sometimes more strongly developed, the glassy border very variously developed, the white patches of the same sometimes more

weakly, sometimes more strongly expressed, occasionally a stronger black spot in the hindmarginal area, the costal spots also quite black, more copiously dotted with red or white; on the hindwing the anal spot in individual instances more distinct and near the margin sometimes some blackish spots. In the ♀, particularly those from high lying localities, more copious black marking and partial darkening of the white ground-colour are of no uncommon occurrence, also in both sexes individuals often occur with yellowish instead of red ocelli, which are usually referred to *behrii* (see further below). But this name must be reserved for the Western race of the species. Specimens without red on the upper surface, in which even the ocelli of the hindwing are reduced to black spots, are usually called ab. *sedakovii* Mén. This is, however, an Asiatic form of *P. phoebus* F. and the name has been replaced by ab. **mendica** Stich. *mendica.*

The egg is semispherical, somewhat depressed at the top, the upper surface thickly granulated, the colour ivory white with a faint greenish tint. Development variable, some eggs yield the larvae in the same year, others hibernate. The young larva is nearly cylindrical, of black colour, the body covered with small hairy tubercles. When fullgrown it attains a length of 23—25 mm (0.9—1.1 inch), the ground-colour is then black-brown, brown on the underside and the legs, the body covered with short stiff hairs and marked with 4 rows of yellow, sometimes white spots; it has a fork-shaped, eversible yellowish gland in the neck; the head is broad, with impressed suture, of black colour. Pupa cylindrical, stout, about 15 mm (0.6 inch) long, the upper surface finely granulated, of yellow-brown colour with greenish reflection. When the larva is about to pupate it draws a leaf or several leaves together into a sort of cocoon by some silken threads, but pupae have also been found on the ground under pieces of wood without a trace of a cocoon. Duration of the pupal stage unknown. The time of flight of the butterflies lasts from May to September, but appears to depend on the temperature and other climatic conditions and the principal time of emergence is the month of July (COURTIS). The oviposition seems to be irregular and regardless of place, and it is left for the newly-emerged larva to find its food-plant: it was observed that the eggs were laid on the stalks of grass or other plants (Composites, Artemisia, etc.), or even on stems or on the ground itself, but always near to this. Various opinions have been advanced as to the food-plant; thus, among others, BRUCE suspected it was *Castelleia integra*, and also suggested *Saxifraga*, later he assigned *Sedum stenopetalum* as the true food-plant; W. H. EDWARDS reared the larvae on *Sedum ternatum*, but they also accepted other species of *Sedum*. By night they live concealed in secure hiding-places on the ground, not coming out until the sun shines; they are commonly attacked by parasites (Tachinids). The imagoes are common where they occur, but are difficult to catch, not only on account of the natural obstacles of the ground, but also on account of their rapid and high flight. Newly emerged males emit, particularly at the time of copulation, a peculiar, pungent and disagreeable odour, which reminds one of mice (W. H. EDWARDS, WRIGHT, REAKIRT, FRUHSTORFER, etc.). Habitat of the typical race: the Rocky Mountains in Wyoming and Colorado.

The species is very variable, but according to our experience with the European and Asiatic species the formation of races in certain restricted localities is to be assumed as in the highest degree probable. These races nevertheless intergrade with one another and in the region of flight of the one form are found individuals with characteristics of the others and vice versa, so that the characters assigned to the following forms are only to be taken in a very general sense. In doubtful cases the locality of the insect must settle the question. — As **hermodur** H. Edw. only a strongly darkened form of the ♂ is usually *hermodur.* described. The original is recorded from the Southern part of the distribution-area. ♂♂ (17e) from that district for the most part differ in that the glossy border of the forewing is not interrupted by white spots at the margin, the submarginal band is only very weakly developed, and the costal spots are occasionally much reduced; ♀♀ occur in a more or less darkened form. The name may be applied collectively to the Southern race. South Colorado, Northern New Mexico. — In **sayii** W. H. Edw. (17d) the ♂♂ are usually *sayii* larger, with larger deep red ocelli, and otherwise approach the Asiatic *intermedius* Mén.; in the ♀♀ as a rule a more copious sprinkling with black scales is noticeable, so that they agree in this with the ♀♀ of the previous form; the costal spots of the forewing are large and quite filled in with red, the glossy border broad, only separated from the submarginal band by a row of luniform spots, the submarginal crescents of the hindwing especially strongly marked and merged together into a broad band. Montana, Judith Mountains. — From the Northern parts of the Rocky Mountains there is a smaller form described as **nanus** *nanus.* Neumoeg. The type-specimen of this resembles the ab. *mendica*; in the ♂ the red colour is entirely absent on the upper surface of both wings, the greater part of the outer margin is glassy grey, on the hindwing only the hindmarginal area is blackish and in the disc there is a black spot instead of the ocellus. The ♀ is similar to that of *hermodur*, darkly dusted, with 2 costal spots filled in with red, hindwing with glassy grey border, the red ocelli with white pupils, all the black markings vivid. British Columbia and Montana. — In the West the species is represented by **behrii** W. H. Edw. (17d): a rather large form, in which the ♂ *behrii.* usually has somewhat longer wings, the submarginal band is marked anteriorly by sharp black luniform spots, which become obsolete posteriorly, the anterior ones of the costal spots usually centred with red, the glossy border is confined to the anterior half, narrowed and so restricted by the white marginal spots that it only remains as a row of blackish wedge-shaped spots; ocelli of the hindwing small. The red-

yellow colouring of the ocelli and the development of small submarginal spots on the hindwing are given as special characteristics, but these features are not constant. The ♀♀ as a rule have the costal spots on the forewing strongly filled in with red, a strongly marked submarginal band, the disc more or less dusted with black, on the hindwing the submarginal lunules are confluent as a sort of band and there are grey spots at the margin itself. In aspect on the whole like *sayii*-♀ or a lighter *hermodur*-♀. California (Sierra Nevada), Utah. Ab. **niger** Wright is an individual form of this local variety corresponding to the ab. *mendica*; this has on the forewing only two black cell-spots, an insignificant costal spot, traces of a submarginal band, the outer margin has no glossy border, both ocelli of the hindwing are reduced to black points. Summit, South California, 2600 m. Another large form of the species is **magnus** Wright, which is only slightly different from *behrii* in that the submarginal band of the forewing is almost complete but less sharply marked, and the glassy border is broader, extending to the hinder angle and less restricted by white marginal spots; hindwing in the type-specimen without anal and submarginal spots, the anterior ocellus very small, the posterior one also only moderately large, the latter with white pupil, the former entirely red; ♀ with costal spots copiously filled in with red and red-dotted hindmarginal spot on the forewing, blackish shading in the disc, border broadly glassy grey; ocelli of the hindwing large, the posterior one with white pupil, submarginal band not extra strongly marked, but the margin itself glassy. Enderby, British Columbia. -- The most northerly representative of the species is **apricatus** Stch. (17d); distinguished by the roundish shape of the wings and very strong black spotting; on the forewing the costal spots changed to a short band, in which there is an almost square red spot anteriorly; submarginal band sharply marked, a large black spot in the hindmarginal area; on the hindwing the hindmarginal area broadly black, a small anal spot, the ocelli large and filled in with deep red, in the posterior one some white dusting. ♀ similarly marked to the ♂, somewhat dusted over with blackish, submarginal band of the forewing and the glossy border broader and complete, hindwing with broader submarginal band and blackish glossy border. In general very similar to the Asiatic *phoebus* forms. Kadiak Island (Alaska).

By older authors (MORRIS, BOISDUVAL) *P. nomion* Fisch. d. W. is recorded from the Rocky Mountains and California, according to more recent accounts (DYAR, WRIGHT) the species occurs in Alaska. However, a more certain confirmation of these records is wanting, and there appears to be a confusion with a form of *smintheus*, especially as regards the records of earlier date.

Alphabetical List

with references to the original descriptions of the forms of the American Papilionidae.

* signifies that the form is also figured in the place cited.

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2. Family: **Pieridae**, Whites.

In comparison with the other faunistic regions, America shows a great abundance of genera. Of the 40 odd genera of Pierids represented in this region 28 have no representatives in other regions, whilst of the 23 Palaearctic genera only 12, of the 14 Indo-Australian only 4 and of the 13 African genera also only 4 are not represented in other faunistic regions. The American Pierid-fauna has consequently quite a character of its own, so much the more as several of the endemic genera are very rich in species and the species for the most part show a great abundance of individuals. Of the 28 American genera only one (*Neophasia*) is confined to North America (accepting the Tropic of Cancer as its southern boundary), and even this wears the garb of allied Palaearctic and Nearctic members of this family, whilst the remaining 27 genera are indigenous to South America. Of these again 3 genera inhabit exclusively the high mountain ranges, 1 genus (*Tatochila*) is principally met with in the southernmost part of the continent and 2 genera (*Sphaenogona* and *Enantia*) are island-dwellers. North America is relatively poor in species of Pierids, since it only possesses about 50, the Palaearctic Region on the contrary showing about three times as many. The whole of the genera which are represented in North America, but yet are not peculiar to this region, occur also in the Palaearctic Region, with one exception (*Nathalis*).

Although the great majority of the American species only belong to the medium-sized butterflies, yet the genera *Catopsilia*, *Amyntia* and *Gonepteryx* show also species which are not inferior in size to the largest forms of this family from other regions. Though there is no large number of species in America which equal in the beauty of the colour of the wings especially Oriental Pierids, the American Region is not wanting in strikingly beautiful forms.

Whilst the other faunistic regions can only show a very small number of Pierid-species which pass as so-called mimics (species of *Pareronia*), tropical and subtropical America possesses a great abundance of them, as for example numerous species of the genera *Dismorphia*, *Pereute* and *Archonias*, which show so-called mimicry in both sexes, whilst in the genus *Perrhybris* only the ♀♀ of some species exhibit this convergent development, the ♂♂ of only a few species having on the underside indications of a resemblance to protected species of other families. Not only these, however, but also species of the genera *Pieris*, *Tatochila*, *Dismorphia*, *Pereute*, *Hesperocharis*, *Appias*, *Terias*, *Catopsilia*, *Euchloë*, *Anthocharis* etc., show striking sexual dimorphism. Seasonal forms occur in North America much as in the Palaearctic Region, in the tropical part of South America on the contrary they are practically non-existent on account of the want of seasonal changes. Sharply defined local forms could only be developed to a very small extent owing to the geographical conditions of the region; on the other hand the high mountain-ranges of South America show a fauna of their own, whilst the large steppe-district in the most southerly part has some forms in common with the south of North America as well as a few endemic ones.

Most of the American Pierids are not rare, many are even very common, although in comparison with the richness in species and individuals of some other families of Lepidoptera they are not so conspicuous as in the Palaearctic Region. Frequently large swarms of different species have been observed, even of such as are by no means of common occurrence. Thus among others at the beginning of October 1874 on the Bermuda Islands an immense swarm of *Terias lisa* was observed, thousands of which fell victims to the birds; these small butterflies flew further westward and had to travel about 600 miles to the next resting-place (Cape Hatteras). The larvae of some species of Pierids on account of their abundant occurrence do serious damage to field and garden plants both in North and in tropical America; the north of the United States has a dangerous enemy to the pine-forests in *Neophasia menapia*, and *Pieris rapae*, which was introduced into North America about 1860, has increased to such an extent that it does even greater damage there than in its original habitat, the Palaearctic Region.

In general the Pierids are of medium size, but some species are large butterflies. The main character of the pattern consists in white colouring with dark, blackish stripes and spots; yet there are also, particularly among the Exotics, a large number of species which in the size of the wings and the gorgeousness of the colours equal the most beautiful forms of other families of Lepidoptera. In these brightly coloured species the contrast between upper and under surface is very striking. Whilst a large part of the species have on the whole the characteristic marking of the family (white-black), there are among the tropical species also many with yellow, blue, red or black ground-colour on the upperside, and on the other hand some with white upper, but variegated under surface. Thus the South American *Pereute*-species, with their black ground-colour and red bands on the forewing both above and beneath, completely belie their Pierid nature, and *Archonias critias* and allied species resemble the species of the *aeneas*-group of the South American Papilios.

Sexual dimorphism is well developed in many species from all the faunistic regions, seasonal dimorphism naturally only in those species which inhabit districts with sharply marked seasonal changes.

Antennae of varying lengths, e. g. in *Leptidia* rather short, in the South American genus *Leptophobia* on the contrary very long, the club clearly defined or gradually thickened. Forelegs normally developed, therefore capable of use, with bifid claws. Proboscis well developed. The butterflies feed at flowers and moist places on the ground. Palpi well developed, but variable. Male secondary sexual characters (seent-organs) occur in the species of several genera, e. g. in *Colias* as a specially scaled spot on the hindwing, in *Catopsilia* as broad patches of thick scaling, in *Appias* (*Tachyris*) as a pencil on the underside of the abdomen, in *Dismorphia* as large chalky spots of scales on the under surface of the forewing, from which the scent is given off by rubbing against the strongly widened anterior part of the hindwing. Other species (e. g. *Pieris brassicae* and its allies) possess feather-brush scales (Aurivillius), which are extended over the greater part of the wing and apparently are the cause of the suppression of the dark markings in the $\sigma\sigma$, and other species again (e. g. *Pieris buniae* from South America) broad stripes of thick chalky scales along the veins.

The Pierids — like most *Rhopalocera* — are sun-loving insects, but, in common with a few other butterflies (mostly Satyrids), nevertheless extend into the Arctic, Antarctic and Alpine regions, without losing anything in brilliancy of colouring in comparison with allied genera from warmer districts. The high mountains of South America and the south-eastern boundary of the Palaearctic Region each even possess two genera quite peculiar to themselves, namely the former *Phulia* with about six species and *Andina* with one *Colias*-like species, and the latter *Mesapia* and *Baltia*, of which the last-named is very nearly allied to *Phulia*.

The Pierids are as a rule moderate fliers, but some also fly unusually swiftly (*Appias*) and others so slowly that they can be caught with the hand when on the wing (*Leucidia*). They occur in one or more generations.

The intellect is obviously very different in the various Pierids, for whilst for instance *Pieris brassicae* and the *Colias*-species are capable of very quickly recognising danger when pursued by the collector, this is much less to be observed in others (*Pieris napi* and *rapae*).

The swarming and migration of the butterflies, already referred to, have been regarded as nuptial flights; *Catopsilias* and *Pieris brassicae* especially have been observed to form such swarms.

The eggs are oblong, are laid in an upright position singly or in clusters, sometimes in large numbers, on the underside of the leaves of the food-plant, and are of different colours.

The larvae are cylindrical, mostly of green or greenish ground-colour with light longitudinal stripes and short hairs; none have yet been observed with spiny or such like processes. They do not possess the fork on the neck characteristic of the Papilionid larvae, which is said to afford the insects protection from their enemies by the emission of an unpleasant odour, neither has it been proved that — like many Papilionid larvae — they acquire poisonous or at least nauseous properties from their food; nevertheless they are not only unpalatable to birds, but it has also been observed that fowls which had been fed on these larvae died, evidently in consequence of a poison contained in their bodies. They live on various shrubs and herbaceous plants, such as Papilionaceae, Mimosas, Crucifers and Caparideae.

The pupa is attached to plants etc., by its abdomen, in an upright or hanging position, and is held in this position by a girth. Some are of very singular form, such as the tube-shaped pupae of the species of *Anthocharis*; but in general the Pierid pupae show few differences. The Palaearctic *Zegris eupheme* — and probably not only the other Palaearctic species (*Z. fausti*), but also the North American *Z. olympia* — pupates in a rather thick cocoon, but still possesses a remnant of the girth. This characteristic (recalling the »Bombycids») is much more pronounced in the Mexican *Eucheira socialis*. The larvae of this species are gregarious and go out at night in a procession to feed. The common web hangs down from a bough, in the form of a pouch; the pupae are fastened in it head downwards (J. ALEMAN).

Some of the Pierids hibernate as pupae, some as larvae, and some — e. g. the Palaearctic *Gonepteryx*-species — as butterflies.

In the Palaearctic and Nearctic Regions the Pierids preponderate by their great number of individuals, in the tropics they are more restricted. Some Pierids have a very extensive range, thus *Pieris rapae* and *napi* occur in the whole Palaearctic and the Nearctic Regions, *Belenois mesentina* in the southern Palaearctic, Indian and African Regions.

Although — as already mentioned — the larvae do not appear to absorb poison from their food-plants, the butterflies are very little pursued by the birds, and are therefore apparently unpalatable to them or at least not much appreciated.

Several fossil Pierids have been found, which do not differ in size from the present-day species.

1. Genus: **Neophasia** Behr.

This genus is nearly allied to the Palaearctic *Aporia Hbn.* It differs principally in the direction of the precostal, which is not straight, but curved slightly inwards, the longer and slenderer palpi and the more distinctly clubbed antennae. The costal of the forewing only extends a little beyond the middle of the costal margin, the subcostal is four-branched with two branches before the closing nervure of the median cell, the third and fourth branches form a short fork and the third runs to the apex. The upper radial is coincident with the subcostal almost to one-half, hence the upper discocellular is wanting. The middle and lower discocellulars are about equal in length, the former is curved inwards, the latter is straight and closes the middle cell, joining the third median*) in an acute angle at its bend. The middle cell of the fore- as well as of the hindwing is rather narrow. The upper and middle discocellulars of the hindwing are about equal in length, and form together an almost straight line, the lower discocellular is longer, weaker, and meets the third median vein at the bend. Two purely North American species belong to this genus.

N. menapia Fldr. (= tau Scudder, ninonia B.) (18a) is white above and beneath, thinly scaled, *menapia* therefore somewhat transparent, the forewing has black markings at the apex and the anterior part of the distal margin, with white subapical spots, the costal margin is broadly black to the apex of the cell, also the discocellulars, the rest of the costal margin narrowly black. Hindwing almost without markings. On the similarly marked under surface of the forewing the black markings are paler, the veins of the dirty-white hindwing are black, there is also a submarginal band of the same colour. The ♀ has on the upperside paler black markings, some submarginal markings, and sometimes on the underside small red spots at the distal margin of the hindwing. — Egg flask-shaped, fluted at the sides. Full-grown larva about 25 mm. (1 inch) long, head cylindrical, abdomen terminating in two short tails, dark green with a broad white band at each side and a narrow white band on the back, abdominal legs black, thoracic legs greenish yellow. Pupa dark green, striped with white, similar to the *Colias*-pupae, but somewhat more slender. Larva on various conifers, sometimes so abundant as to cause considerable damage. In the north-west of the United States.

N. terlooii Behr (= epyaxa Poling, Archonias lyceas Skinner) (18a) is very similar in pattern to *terlooii*. *menapia*, but the black markings are more extended; the ♂ has white, the ♀ red-brown ground-colour. The larva lives in a common web on *Arbutus*. California. — **princetonia** Poling, from Illinois, is probably *princetonia*. only a form of *terlooii*. In the ♂ both sides of the hindwing are sprinkled with pale red at the margin, the ♀ is deeper red beneath than above, and the veins are more broadly edged with black than in the ♀ of *menapia*. — From lack of material I have not been able to decide with certainty whether this species belongs to this genus, but the agreement of the markings with *menapia* suggests a *Neophasia*.

2. Genus: **Eucheira** Westw.

Although this genus differs essentially from the preceding in the neurulation, yet it is closely allied to it in the life-history of the larva. The larvae live gregariously in a web, go out at night in a procession to feed, and pupate in the web with the head downwards. The subcostal of the forewing is entirely free, hence the cell is closed by three discocellulars. The cell is very narrow and long. Only one species.

E. socialis Westw. (18a), from Mexico, is a smoky grey butterfly with a white central macular band; *socialis*. the ♂ has in addition more distinct white submarginal spots on the upper and under surface of both wings.

3. Genus: **Tatochila** Bth.

This genus is almost confined to the southern part of South America and is closely allied to the following genus, *Pieris*; it differs from this in the shorter middle discocellular and the almost straight lower discocellular of the forewing, but principally in the uniform character of the markings. The species of this genus appear to occur only in one generation. The butterflies fly from November to April.

T. volxemi Capr. (= ahamantis Berg) (18a). Upper and under surface of the ♂ white with a *volxemi*. large black spot on the discocellulars of the forewing and slight blackish markings at the apex of the forewing above and beneath. ♂ similar to the ♀ of *theodice* Bl., but the marginal markings somewhat narrower, the submarginal markings on the contrary somewhat broader, also a black stripe in the cell of the hindwing. — Argentina.

*) What the author calls the „third median“ is really the third radial, there being three radial and two median branches in the butterfly-wing. — Transl.

autodice. **T. autodice** *Hbn.* (= demodice *Stgr.*) (18b), from the most southerly part of Brazil (Rio Grande do Sul, Argentina, Uruguay, Chile and Bolivia (3—4000 m), is differentiated from the following species chiefly by the yellowish red border of the eyes; markings and colouring are stronger on the underside. — The pupa, found by Dr. SERTZ in Buenos Aires, is somewhat smaller than the pupa of *Pieris brassicae*, yellowish, with a number of minute dark spots, the spiracles appear as larger dark spots and there are similar dots also on the dorsum, the wing-cases are white, with a large dark spot at the discocellulars of the forewing, larger dark spots at the distal margin and numerous minute dark spots on the rest of the wings, the cases of the legs, palpi and eyes, at well as the thorax, are likewise dark (black-brown). The butterfly emerged on 22. February. The larva is apparently not yet known.

mercedis. **T. mercedis** *Eschsch.* (= polydice *Bl.*, autodice *Kirby*, autodice *Eluc.*) (18b), from Chile, differs from *autodice*, in addition to the previously mentioned characteristics, in the purer white upper surface, the weakly marked under surface and the entire absence of the elliptical marking at the costal margin of the hindwing beneath. The ♀ have a more or less developed streak-shaped black spot at the inner margin of the forewing above.

theodice. **T. theodice** *Bdv.* (= blanchardii *Btlr.*) (18c), from Patagonia, Peru and Chile, is cream-white above in the ♂, light yellow in the ♀, particularly on the hindwing; it is the most distinct species in the genus. —

gymnodice. **gymnodice** *Stgr.*, from Punta Arenas (Tierra del Fuego), is probably a local form. Ground-colour of the ♂ pure white, the black markings somewhat narrower, underside of the hindwing without saffron-yellow stripes, only the basal part of the costal margin sulphur-yellow and a similarly coloured stripe at the apex. The ♀ has likewise narrower, but sharper black markings, the arrow-like spots on both wings are sharper and are connected. — Larva: head grey and covered with very fine, short hairs, body grey, with broad yellow subdorsal lines and a lateral row of small orange-red spots, and with raised black dots, sparsely scattered over the whole body, each with a very short, fine hair, ventral legs and underside of the body dark greenish yellow with small black spots, thoracic legs black. Food-plant: *Tropeolum*. Larva full-fed end of November (A. G. BUTLER). Flies from December to April.

argyrodice. **T. argyrodice** *Stgr.* (18a) is only known in the female. This species is well characterised by the grey ground-colouring and the sharply defined tear-shaped yellow spots of the under surface. South coast of Tierra del Fuego (Uschuaia).

microdice. **T. microdice** *Bl.* (= xanthodice *Mab.*), from Chile and Patagonia, is smaller and with less markings, also beneath a paler colour than **macrodice** *Stgr.* (18c, d), from Bolivia. — **sterodice** *Stgr.*, from the east coast of Tierra del Fuego, is differentiated from this latter by a complete absence of yellow markings on the under surface, it is also white, almost without markings on the upper surface of the ♂, which is strongly glossy in the basal half. The ♀ has not a trace of yellow on the upper surface, whilst the markings are similar to those of the ♀ of *microdice*. — **arctodice** *Stgr.* occurs in Colombia and Ecuador. This form is very strongly marked with black, especially in the female; the upper surface of the ♀♀ is principally brown-black (with yellow spots).

pyrrhomma. **T. pyrrhomma** *spec. nov.* (18d), from Peru (Huancabamba, 3000 m), may be regarded as a distinct species on account of several important differences. The eyes are broadly (more broadly than in *autodice*) edged with fiery red-yellow, the black stripe at the costal margin of the forewing above extends to the base, the black spot on the discocellulars is distinctly smaller, the black marginal and submarginal markings are less developed, the latter almost square, the upper surface of the hindwing entirely without markings and strongly yellowish on account of the yellow colour of the under surface shining through. On the underside the veins are more broadly white, their margins more broadly grey-black than in *microdice*, the lower discocellular of the hindwing without white spot, the grey-black stripe in the cell very narrow and forked distally, besides the very sharply defined and broader saffron-yellow stripe at the costal margin there is also a similar one between the submedian and the first median. The under surface of the forewing is white, the veins are very finely black, those in the apex sharply white and very narrowly edged with black, the black spot at the end of the cell is small, the sulphur-yellow colouring of the apex reaches to the second median, and submarginal markings are completely wanting on both wings. ♂ unknown.

xanthodice. **T. xanthodice** *Luc.* (18d), from Venezuela, Colombia, Ecuador, Peru, Bolivia and Argentina, differs from *microdice* and *argyrodice* on the under surface chiefly in the saffron-yellow stripes between the veins of the hindwing, from *microdice* also in the absence of the white spot on the discocellulars on the underside of the hindwing. On the under surface the apex of the forewing has saffron-yellow stripes and the anterior veins are sharply edged with black to the apex of the cell.

demodice. **T. demodice** *Bl.*, from Chile, South Patagonia and Tierra del Fuego, is distinguished from the following form by the absence of the arrow-spots on both wings. It must be noticed that according to

BLANCHARD'S insufficient description the name *demodice* cannot be employed with certainty for this species. I have seen no specimens which agree with this description, which may be translated thus: "Wings of the above white, of the ♀ yellow-blackish, in both sexes marginal spots, a row of arrow-spots and a black discoidal half-band; beneath the forewing yellowish at the apex, the hindwing entirely yellow, veins margined with black, gold-yellow lines — 20—21 lines." — **sagittata** *form. nov., spec. nov.?* (18e), from Peru (Huancabamba, 3000 m.), differs from this supposed *demodice* by the markings of the hindwing (shown in the figure), and further by the presence of four black submarginal arrow-spots on the forewing beneath, as well as by the colouring and pattern of the underside of the hindwing. The latter has a light yellow ground-colour, the veins themselves are very narrowly light, but edged with blackish about as broadly as in *orthodice*, there is a similar stripe in the cell, which shows no small white spot on the discocellular, between all the veins are saffron-yellow stripes and at the distal margin four very pointed blackish arrow-spots; at the distal margin there is an almost uninterrupted fine black marginal line, such as occurs in no other species of this genus. Underside of the forewing white, the veins becoming more broadly black towards the margin, the discocellulars not broadly margined with black, four submarginal arrow-spots, apex of both wings light yellow. ♀ unknown.

T. stigmadice *Stgr.*, from Bolivia (Cocapata, 3500 m.), differs from *immaculata* here figured by the *stigmadice*. much broader black spot on the discocellular and by the presence of 4—5 triangular black submarginal spots on the forewing and 2—5 of such spots on the hindwing, as well as the saffron-yellow colouring of the hindwing. — In **immaculata** *form. nov.* (18e), from the province of Tucuman in Argentina, the sub-*immaculata*. marginal markings are completely absent above and beneath; the under surface of the forewing is white with small yellow stripes in the apex, the veins are narrowly black, the black line on the discocellular is not widened; the hindwing is yellowish white, with bright yellow, sharply defined narrow stripes between all the veins and at the costal margin, the veins themselves are very finely light, being narrowly edged with grey-black, a similar stripe, indistinctly forked at the discal end, is placed in the cell, the discocellular is light like the ground-colour. ♀ yellowish, veins rather broadly dark, with submarginal arrow-spots on the forewing and more distinct ones on the hindwing.

T. orthodice *Weym.* (18e), from the high mountains of Bolivia, has a white upper surface with the *orthodice*. markings as shown in the figure. Under surface of the forewing white with yellowish apex, in which the white veins are dark-edged. Under surface of the hindwing sulphur-yellow, the veins broadly white, dark-edged, saffron-yellow stripes at the costal and hindmargins, as well as in the cell, which has likewise a blackish stripe. ♀ unknown.

4. Genus: **Pieris** *Schrk.*

This genus, distributed over the whole world, is considered as the typical representative of the family. The subcostal of the forewing is four-branched with 2 branches before the apex of the cell, the third branch is very short and runs into the costal margin shortly before the apex, the cell is large, not over broad, and is closed by 2 discocellulars; the upper discocellular is wanting because the upper radial is coincident with the subcostal for some distance. The precostal of the hindwing branches off from the costal almost at right angles and its pointed apex is curved distad. The costal margin of the forewing is smooth, the antennae have in general a distinct club and are mostly of medium length, very long in some species, the palpi mostly project beyond the head and are densely covered with stiff hairs in front, the end segment is as long as or longer than the middle segment, slender and pointed, the middle segment is but little shorter than the weakly curved basal segment. The larva is cylindrical, with very short hairs, and has light longitudinal stripes. Pupa moderately slender, with obtuse tip to the head and several small protuberances on the dorsum, sometimes with the wing-cases somewhat more produced. The species which belong here have probably all of them at least two broods, one of which in the temperate zones hibernates in the pupa.

P. monuste *L.* (= *hippomonuste* *Hbn.*, *feronia* *Stph.*, *phileta* *F.*, *albusta* *Sepp*) occurs in several *monuste*. forms from the south of North America (the Gulf states) to Argentina, also in the mountains of the west. The form from Surinam may be regarded as the nymotype of the species. — **orseis** *Godt.* (18e, f), from *orseis*. the southern states of Brazil, has the margin more broadly black with white apical spots, the ♀ mostly with yellowish ground-colour, especially on the hindwing, on the latter also rather large pointed black marginal spots. **cleomes** *Bdr.*, from the south of North America, is somewhat smaller and less blackly marked. — *cleomes*. **virginia** *Godt.* (= ♀ *eubotea* *Godt.*?) is the form from the Antilles. — Of **evonina** *Bdr.*, from Cuba, 3 forms *virginia*. are described: **evonina** with greenish white colouring of the ♂, marginal marking narrow, reddish, brown; *evonina*. underside at the apex of the forewing pale and dirty ochre-yellow, hindwing of the same colour, without spots; **valei** *Bdr.*, upper surface white, marginal pattern narrow, black and dentate: under surface of the *valei*. forewing brownish, of the hindwing whitish, faintly ochre-yellow; **joppe** *Bdr.*, smaller than *monuste*, above *joppe*. dull white, marginal pattern dark brown, a black spot at the apex of the cell. — **automate** *Burm.*, from *automate*. Argentina, has only small blackish markings at the apex and the distal margin of the forewing. — **suasa** *suasa*.

Bdr., from Chile, Peru and Bolivia, has somewhat more black markings than *autodice*. Larva violet, with citron-yellow longitudinal bands, head, legs and underside greenish yellow. Pupa pale yellowish, with blackish dots, a small hump on the middle of the dorsum. Lives on *Cleome pentaphylla* and other allied plants and causes the same damage to agriculture and horticulture as *brassicae* and *rapae* in the Palaearctic Region.

sevata. **P. sevata** *Fldr.* (18f), from Colombia, Venezuela and Central America, is similar to *monuste*, but is distinguished from it by a broad layer of scent-scales along almost all the longitudinal veins of the forewing and also two veins of the hindwing. The under surface of the ♂ is yellowish white, the apex of the forewing somewhat darker yellow, the costal margin of the hindwing narrowly edged with ochre-yellow. — In

tiburtia. **tiburtia** *Fruhst.*, from Guatemala, the black apical spot has almost entirely disappeared and the black median spot is reduced, apex of the forewing beneath yellowish white, hindwing beneath with more vivid gloss, rose-coloured instead of yellowish, veins not suffused with black. — *timotina* *Fruhst.*, from Peru, is larger, with broader and more extended black margin, which is deeply dentate, a large black median spot, under *amphissa*. surface darker, median spot sharper and the veins more distinctly streaked with brown. — **amphissa** *Fruhst.*, from Bolivia, is smaller than *tiburtia*, upperside yellowish white, entirely without markings, only the costal margin of the forewing lightly suffused with brown, without median spot, underside of the forewing white with yellowish apex and brown median spot, hindwing uniform pale yellowish white with orange-coloured basal spot.

sincera. **P. sincera** *Weym.* (18f), from Ecuador (Guayaquil), is greenish white above with black apical and distal-marginal area on the forewing as well as very small black marginal markings on the hindwing. The underside is lighter and without markings except a yellow stripe at the costal margin of the hindwing.

buniae. **P. buniae** *Hbn.* (= *endeis* *Godt.*) (19a) is the giant of the American species of *Pieris*. From this *ausia*. form, which occurs in the central provinces of Brazil, **ausia** *Bdr.*, from the southern provinces, is distinguished by a somewhat more extensive development of the black markings, which in both sexes sometimes occur *rusella*. also in the middle and at the distal margin of the hindwing beneath; to ab. **rusella** *Fruhst.*, belong ♀♀ in *digentia*. which the black band of the forewing is wanting (Bahia, Espiritu Santo). ♀-ab. **digentia** *Fruhst.*, from Bahia, *sabella*. is remarkable for the specially broad black band of the forewing. — **sabella** *Fruhst.* (= *ausia* *Stgr.*), from *pharetia*. the Upper Amazon, has no markings at all on the under surface of the hindwing. — **pharetia** *Fruhst.*, from Peru, is larger, the apical spot of the forewing beneath is effaced, the underside of the hindwing only with *imperator*. traces of a brown transverse band or without even these. — **imperator** *Kirby*, from the Upper Amazon, is the most darkly marked form; in it the ♀ has also on the upperside of the hindwing abundant black markings and on the upperside of the forewing a curved black band occupying half the costal margin and the discocellular. — **phaloë** *Godt.*, from the Upper Amazon, is smaller and with less markings than *imperator*. — *diana*. **diana** *Fldr.*, from Colombia, has the black apical and marginal markings diffuse. — **sublineata** *Schaus* (19a), *sublineata*. from Peru, is distinguished chiefly by the strongly yellow colouring of the hindwing beneath. — All the forms of *buniae* have an even broader layer of scent-scales at the veins than *sevata*.

amaryllis. **P. amaryllis** *F.* (19a), from Jamaica, differs from *josepha* by the 'café-au-lait' colouring. — **josepha** *Godm. and Sqr.* (19a), from Mexico and Central America, also discovered by Herr L. HARTMANN of Würzburg in Texas, is undoubtedly nearly allied to the preceding species, but must certainly be regarded as a separate species on account of the peculiar form of the ♂ and the style of marking of the ♀. On the under surface besides the black median spot of the forewing there are only quite small dark markings present in *gervasia*. the middle of the wings. ab. **gervasia** *Fruhst.* is a female form which has a white under surface with grey-yellow scales. — **josephina** *Godt.* is the form from San Domingo. — **protasia** *Fruhst.*, from Honduras and *josephina*. Nicaragua, has a much smaller black median spot. — **krugii** *Dew.*, from Porto Rico, is smaller, the distal margin of the forewing more incurved, the black spots almost completely effaced.

menacte. **P. menacte** *Bdr.* (19b), from southern Brazil and Paraguay, is white above with dark scaling (sometimes wanting) at the apex of the forewing. The ♀ has much darker markings. The under surface is yellowish white with more or less blackish scaling (sometimes absent) along the veins of the hindwing.

cruciferarum. **P. cruciferarum** *Bdr.* (= *casta* *Ky.*, *marginalis* *Scudd.*) (18f), from California, is plain yellowish white above, beneath more strongly yellow, with ochre-yellow stripe and narrow black edging to the veins of the hindwing.

rapae. **P. rapae** *L.* (19b) was introduced into Canada about 1860 and has since spread as far as Hudson's *novangliae*. Bay and South Texas. The larvae cause great damage every year. ab. **novangliae** *Scudd.* is a sulphur-yellow form. — Larva light green, velvety, with a fine yellow longitudinal line on the back, paler laterally with a narrow yellow stripe in which the black spiracles are placed, venter yellow-green, head brownish yellow, 20–30 mm. long. Lives on cabbages, Reseda, cress, etc. Egg pear-shaped with longitudinal ridges and transverse folds, laid singly. Pupa yellow, greenish grey or brownish with 3 yellow stripes.

P. napi L., although distributed over the whole of North America, is much rarer there than in the *napi*. Palaearctic Region. The summer form *napi* differs from the spring form **oleracea** Harris by more abundant *oleracea*. dark markings, especially on the under surface, whilst in the Palaearctic Region on the contrary the spring form has more markings; ab. **virginiensis** Edr. (19b) is distinguished from *oleracea* in that the forewing has *virginiensis*. an indistinct dark apical spot on the upper surface and on the under surface of the hindwing there is very fine but broad dark scaling along the veins, but specimens also occur in which the whole of the hindwing beneath is darkened except for the fine white veins: such specimens have also broad grey streaks at the veins at the apex of the forewing beneath; ab. **pallida** Scudd. is purer white above and beneath, only the *pallida*. ♀ has a small black spot on the upperside of the forewing. — The alpine and northern form **bryoniae** Ochs., *bryoniae*. which occurs in Alaska as well as in some parts of the Palaearctic Region, has in the ♀ yellowish ground-colour on the upper surface and rather broad dark margins to the veins. This form is considerably lighter than the Palaearctic form of the same name. — **acadia** Edr. is a large form, which comes between *pallida* *acadia*. and *bryoniae* in colouring and pattern. — **frigida** Scudd., from Labrador, is a whiter form and **hulda** Edr. *frigida*. (19b), from Alaska, is similar to *frigida*, but much smaller. — **castoria** Reak. (= *resedae* Bdr.), from Cali- *hulda*. fornia, is a form without much marking. — Larva brownish green, lighter at the sides, with small white *castoria*. tubercles, black dots and a yellow lateral stripe, above which the black, red-yellow edged spiracles are placed, head grey-green; 29–30 mm. long, on the same plants as *vapae*. Pupa greenish yellow, with black spots and dots and yellowish margin to the wing-cases. Egg pear-shaped, likewise laid singly.

P. protodice Bdr. (19c), distributed from Canada to Guatemala, has white ground-colour, a large *protodice*. median spot divided with white and in the ♂ slighter, in the ♀ stronger pattern of marginal and submarginal spots on the forewing. The upper surface of the hindwing in the ♂ is almost without markings, in the ♀ with submarginal dentate markings as well as black marginal spots. The under surface has much paler markings in both sexes. — In the winter form, **vernalis** Edr., the ♂ is smaller and less marked than the ♂ of *proto-* *vernalis*. *dice*, the ♀ on the contrary scarcely different from that of *protodice*. — Larva in the earlier stages unicolorous orange-yellow, head black, in the later stages the head light straw-colour, posterior half light purple, a gold-yellow spot on each side, the whole head sprinkled with black-brown, eyes purple, broadly edged with black. Body alternately glossy gold-yellow and dark greenish purple, sometimes with uniform, in other cases with unequally broad black band. The yellow colouring of the sides of the back and of the stigmatal band runs into the purple of the infrastigmatal band. Beneath dull light green with reddish tinge. On the whole body larger and smaller black spots, each of which bears a short black hair, also numerous small hairy tubercles (from specimens preserved in glycerine). Pupa light bluish green, slightly suffused with yellowish on the abdominal segments, a dull, broad yellowish lateral stripe on the abdomen, suprastigmatal ridges margined with yellow. Head with small, dispersed blackish spots, wing-cases with faint dark brown marks, veins marked with small, separated, distinct black spots, a black spot on the basal protuberance, segments of the antennae mostly marked in the same way. The spiracles are the same colour as the body. Larva on *Brassica oleracea*, *Lepidium virginicum* and other Crucifers.

P. occidentalis Reak. (19c), from the mountainous regions of the west of the United States, has the *occidentalis*. dark markings more extended and less interrupted than *protodice* and the under surface, especially of the hindwing, is strongly marked with green. — *occidentalis* is regarded by SCUDDER as the third generation of *protodice* (only occurring in the west?). Thus it would seem that the early stages do not differ from those of *protodice*.

P. sisymbrii Bdr. (19c), from the United States, is smaller than *occidentalis*, the black marginal mark- *sisymbrii*. ings are more sharply defined and divided by the veins, which are light here, but sharply dark in the rest of the wings. The underside of the hindwing has black-green markings, broken up in a peculiar manner. The ♀ is quite similar to the ♂. — Egg long, narrow, conical, ground-surface and vertex flattened and depressed, with longitudinal ridges, the interspaces hollowed out and crossed by numerous stripes; colouring at first light yellow, shortly before emergence red. Full-grown larva about 22 mm. long, cylindrical, moderately narrowed anteriorly and posteriorly, light yellow, with black stripes crosswise, each segment sometimes with a fold and in this case on the back small yellow protuberances of irregular size, each terminating in a small fine hair: on all the segments behind the 2. and inclusive of the 12. are 2 stripes. The larva varies very much. Time of development from the egg to the pupa in April – May 33 days, in May – June 30 days. Pupa cylindrical, narrow at the head, hollowed out at the sides, a short thick projection between the eyes, mesothorax projecting, rounded, slightly keeled in consequence of a depression as deep as the mesothorax is high, which however is not uniformly rounded but rather angular, on each side of the dorsum and the anterior abdominal segments are small, angular, inconspicuous elevations, the anterior ones the most distinct; colouring dark brown, the whole upperside except the wing-cases irregularly covered with small protuberances (the pupa is figured by EDWARDS, Butterflies of North America, hanging free).

P. beckeri Edr. (19c), from the United States, is similar to the *Euchloa*-species. Upper and under *beckeri*. surface white, on the upperside of the forewing a large black median spot, divided with white, and smaller

and indistinct marginal and submarginal spots. Under surface with a large black median spot and two black submarginal spots, as well as greenish markings at the apex of the forewing and at the distal margin, in the middle and at the base of the hindwing, veins for the most part yellow. — Full-grown larva about 33 mm., colouring greenish white, strongly mottled or sprinkled with grey, and with a very distinct orange-coloured belt between the segments, each segment with 16–18 pitch-black tubercles, terminating in black bristles, head yellow. Pupa in general like that of *protodice*, but less angular; the frons ends in an obtuse projection, the head part is rounded, with uneven upper surface, the dorsal side of the thorax is dark grey-brown, the elevation above the wing-cases, which *protodice* possesses, is wanting in *beckeri*, the rest is grey, on the wing-cases and the back of the first two abdominal segments almost white; a light stigmatal stripe runs from the margin of the wings to the anal extremity, between thorax and abdomen are 4 small spots dorsally. Duration of the pupal stage 15 days. Lives on Crucifers. The first generation flies in April, the second from the end of June for 3–4 weeks. No differences have been found between the butterflies of the two broods.

venosa. **P. venosa** Scudd. (19c), from California, is white on the upper surface with the veins scaled with black in the anterior part of the forewing and black dots at the ends of the veins on the hindwing, as well as a black spot on the forewing between the 2. and 3. median veins, on the yellowish white under surface all the veins are rather broadly and very darkly margined, but the veins themselves light.

itaticayae. **P. itaticayae** Foett. (19d), from Brazil, is white on the upperside with yellow stripes between the veins and black apical area on the forewing and small black marginal marking on the hindwing. The under surface of the forewing is white, yellow at the costal and distal margins, the hindwing is darker yellow and the veins with dark margins.

aripa. **P. aripa** Bdr. (19d), from Venezuela, has yellowish white upper surface, with black apical and distal-marginal marking, the under surface is somewhat lighter with a black median spot on the hindwing, at the apex of the forewing the black marking of the upper surface shows through. — **balidia** Bdr., from Mexico, is generally more yellow, especially on the underside of the hindwing. — **elodia** Bdr., from Mexico, is not essentially different. It would be most correct to unite all the three forms. *P. aripa* occurs from Mexico to South Brazil, is nowhere rare and varies somewhat. The ♀♀ have more yellowish ground-colour; probably *elodina*, which I only know from the figure, is an *aripa*-♀. — **elodina** Stgr. i. l., from Bolivia, is larger and on the under surface almost pure white.

eleusis. **P. eleusis** Luc. (19d), from Colombia and Venezuela, differs from *elodia* by its much more pointed forewing, broader apical and distal-marginal marking, and also by the black marking in the cell of the forewing above. The ♀ has a yellowish upper surface to the hindwing and broader black marking in the cell of the hindwing. — **helena** Luc., from Ecuador, has a narrower black margin, less black dusting at the costal margin and lighter, almost white, under surface.

pylotis. **P. pylotis** Godt. (19d), from Brazil, is white above with broad black apical and distal-marginal marking, and also a black median spot on the forewing, the hindwing has black spots at the distal margin, but is, however, not infrequently entirely white. The under surface is similar to the upper, but the distal margin of the forewing is light grey, the hindwing has a black spot at the discocellular and an ochre-yellow one at the base. The ♀ only differs by a yellowish tone on the hindwing beneath.

olympia. **P. olympia** Fldr. (19e), from Venezuela, Colombia and Peru, has white ground-colour with black distal-marginal area and a small black median spot on the forewing, the under surface is silver-white with black submarginal markings on the forewing and fine black veins on the hindwing.

tovaria. **P. tovaria** Fldr. (19e), from Colombia and Venezuela, differs from *olympia* in the more normal distal-marginal area and the absence of the black median spot of the forewing. The ♀ has broader, but paler marginal markings and the hindwing is yellowish beneath. — **subflavescens** Kirby, from Ecuador, has the hindwing yellowish beneath and the apex of the forewing sulphur-yellow. — **maruga** Fruhst., from Ecuador, is larger than *tovaria*, with much broader black margins, the underside of the forewing darker in the cell and the stripes between the veins are sharper. — **gina** Fruhst., from Peru, is larger than *maruga*, forewing more pointed, the black distal margin essentially broader, more deeply indented proximally, the base of the wing with less black scales, beneath the black band on the forewing broader.

philoma. **P. philoma** Hew. (19e), from the high mountain ranges of Ecuador and Peru, is white above with very broad black margins and a white subapical spot on the forewing. The under surface of the hindwing and the apex of the forewing are silver-white with sharp, thin black veins and stripes between the veins, the forewing has also the corresponding submarginal marking on the upper surface.

euthemia. **P. euthemia** Fldr. (19e), from Colombia and Venezuela, is distinguished from *philoma* by much narrower black markings; the hindwing is white except for a narrow black margin.

penthica. **P. penthica** Koll. (19e), from Colombia, is also similar to *philoma*, somewhat larger, with less black markings, the hindwing is blue in the posterior half, the under surface of the hindwing, in addition to the

very fine, much less conspicuous black veins, has only traces of the black stripes between the veins at the distal margin, on the other hand a rather large black spot on the discocellular. — **stamnata** *Luc.*, from Venezuela, *stamnata*. is somewhat smaller, but otherwise differs little from *penhica*. — **messala** *Fruhst.*, from Peru, has the forewing more pointed, beneath the cell of the forewing is more broadly scaled with black and the subapical black transverse band is somewhat narrower. — **basiliola** *Fruhst.*, from Bolivia, is smaller and lighter, the white subapical spot of the forewing broader, the black distal margin of the hindwing decidedly narrower and the anal area of the hindwing above almost without blue-grey scaling.

P. subargentea *Btlr.* (19e), from Peru, has the upper surface almost black, with white-yellowish markings. The under surface of the forewing is similar to the upper, only the apex is bluish instead of black. The underside of the hindwing is bluish with silvery sheen, the middle of the wing whitish, at the costal margin a yellow stripe and the veins and the stripes between them are narrowly black. — **lia** *Fruhst.*, from Bolivia, is larger and is less extended black.

P. caesia *Luc.*, from Ecuador, is distinguished from **tenuicornis** *Btlr. and Druce* (194), from Central America, by narrower black distal margins and the almost complete absence of the sulphur-yellow scaling at the apex of the forewing beneath. The ♀ is black-brown except for the white median and apical markings of the forewing and the yellowish middle of the hindwing, and has also a broad grey-brown submarginal band on the underside of the hindwing. — **semicaesia** *Fldr.*, from Colombia, is a small form with narrower, pale black-brown margins and impure blue on the under surface. — **phanokia** *Fruhst.* (= *semicaesia* *Fldr.*?), from Colombia, of which only ♀♀ are known, is larger than *caesia* and has on both wings a much broader margin above and beneath.

P. cinerea *Hew.* (19f), from Ecuador, has the upperside of the forewing white with the apical half black, in which a white apical spot is placed, the hindwing in the ♂ is blue and in the ♀ black with yellow-white costal margin. The under surface is quite similar except that there are small sulphur-yellow spots at the apex of both wings, a stripe of the same colour at the costal margin and small ochre-yellow spots at the base of the hindwing. The ♀ is paler coloured, the spots at the apices of the wings and stripe at the costal margin of the hindwing on the underside are white instead of yellow. — **litana** *Fruhst.*, from Bolivia, is smaller, the black distal margin narrower, the under surface of the forewing purer white, that of the hindwing paler yellow. — **menthe** *Hopff.* is the slightly different form from Peru.

P. mandela *Fldr.* (20a) is the oldest name for a species particularly rich in female forms. *P. mandela* is the form from Venezuela with moderately broad black apical marking, in which are one larger and several very small white subapical spots, and with very narrow black distal margin to the hindwing. The under surface of the hindwing is lighter than in the better known *locusta* from Colombia. ♀ more like the ♂ than the ♀♀ of the other forms, distinguished from the ♂ by the broader black margin and the yellowish tint of the rest of the hindwing. — **apicalis** *Btlr.*, from the Upper Amazon, Peru, Colombia and Ecuador, is larger in both sexes, in the ♂ the black apical margin more sharply angled proximally, the distal margin distinctly narrower posteriorly, the upper white subapical spot larger, the distal margin of the hindwing broader in the posterior half, the under surface lighter; the ♀ is similar to the *mandela* ♀, the proximal part of the hindwing grey-brown to the end of the cell, the under surface of the forewing not sulphur-yellow at the base, the hindwing has more red colouring, the brown parts are more coffee-brown and the submarginal spots larger. — **noctipennis** *Btlr. and Druce* (20a), from Costa Rica and Chiriqui, has in the ♂ a somewhat broader black distal margin to both wings than *mandela*. The under surface of the hindwing is somewhat darker and the yellow marginal spots are sharper and deeper yellow. The ♀ has the upper surface of the forewing more yellowish with black apical third in which a yellowish subapical spot is placed, the base is yellowish grey-brown, the hindwing is black-brown with two small yellow subapical spots. — **locusta** *Fldr.*, from Colombia, is scarcely different from *noctipennis* in the ♂, the ♀ on the other hand has the distal third of the forewing and the whole of the hindwing a deep purple-brown colour; a small white subapical spot on the forewing is sometimes present. The white colour of the middle part of the forewing is tinged with red. The under surface of the hindwing is darker and the yellow submarginal spots are more indistinct. — **rubecula** *Fruhst.* (20b), from Peru, has in the ♂ three distinct subapical white spots, the black apical and distal-marginal marking only reaches to the first median vein, the hindwing is more broadly margined with black and the under surface of the hindwing is very light, with much yellow marking and vermilion streaks at the base. The ♀ has a black central longitudinal band from the cell to the distal margin of the forewing. — **xanthomelas** *subsp. nov.*, from Ecuador (Coca), is in the female similar to *rubecula*, the hindwing has strongly yellowish ground-colour, which is also present on the basal part of the forewing, also the hindwing is much darker, the black central longitudinal band of the forewing is shorter and narrower, the under surface of the hindwing is much darker and the vermilion and yellow streaks are longer and stronger. — **pallida** *subsp. nov.*, from Bolivia (Yungas de la Paz, 1000 m.), has a smaller black apical part to the forewing above, with its proximal edge rather straight, and broad, diffuse black distal margin to the hindwing. The under surface, particularly on the hindwing, is very light and only diffusely marked. — **tithoreides** *Btlr.*, from Ecuador (Balzabamba), has in the ♂ a broad black distal margin to both wings, the hindwing

has a row of small white submarginal spots, under surface dark, yellow markings darkened, the red basal markings and yellow spots reduced. ♀ with yellow longitudinal central band on fore- and hindwing, a white transverse median band and white submarginal spots on both wings. — **cocana** *Fruhst.*, from Ecuador, is only distinguished from *rubecula* on the upperside by the narrower black distal margin of the hindwing. The under surface of the hindwing has white instead of reddish ground-colour, sharp dark marking and the yellow and red markings very much reduced. ♀ unknown. — **permagna** *Fruhst.*, from Peru (Chanchamayo), is similar to *cocana*, the red basal spots on the underside of the hindwing are enlarged and the submarginal spots larger and whitish yellow. — **molione** *Fruhst.*, from Paraguay, is the most southern subspecies and has the least markings of any; it is smaller than *rubecula* and has a much narrower, lighter grey-black distal margin to the hindwing, which is proximally broken up into fine blue-grey scaling; the light grey under surface of the hindwing recalls *viardi* in the fine yellow stripes between the nervures.

P. viardi *Bdr.* (= *habra* *Doubl.*) (20b), from Honduras, is white above in the ♂, with black, white-spotted apical and distal-marginal markings and a large black median spot on the forewing, which however is sometimes wanting, and entirely white hindwing. Underside of the hindwing similar to *mandela*, but much lighter and the light yellow submarginal spots diverging from the margin from the middle of the distal margin towards the inner margin, markings of the forewing beneath as above, only much paler. ♀ above and on the under surface of the forewing black-brown with vivid yellow bands and spots, under surface of the hindwing as in the ♂, only darker. — **laogore** *Godm.*, from Mexico and Guatemala, has lighter markings on the underside of the hindwing and has no sulphur-yellow markings there.

5. Genus: **Leptophobia** *Bthr.*

This genus cannot be maintained in the wide limits laid down by the author, but may be defined according to the characters observed in the genotype *eleone* *D.-H.*, with which only a few of the 15 species included by Butler are congeneric. The principal characters of this genus consist in the formation of the precostal, which is curved proximally, and in the shortness of the middle discocellular, which is scarcely $\frac{1}{4}$ as long as the weakly curved and less obliquely placed lower discocellular. The subcostal is four-branched with two branches before the apex of the cell, the upper radial is stalked with the subcostal almost to the half. The long antenna (reaching to $\frac{2}{3}$ of the margin of the forewing) is not characteristic for the *Leptophobia*-species, but occurs also in some species of *Pieris*.

L. eleone *D.-H.* (= *suadella* *Fldr.*) (20c), from Colombia and Venezuela, has the forewing pointed and the hindwing produced at the anal angle. The ♂ is lemon-coloured above with broad black distal margin and narrowly black hindmargin on the forewing, somewhat more than the anterior half of the cell being also black. The ♀ is light yellow on the hindwing, almost white on the forewing, but marked like the ♂, though ♀♀ also occur with light ochre-yellow forewing and lemon-yellow hindwing: ab. **ochracea** *form. nov.* The under surface of the hindwing and the apex of the forewing are yellowish white, with a pearly gloss, the rest of the forewing light yellow, the hindwing has two small black spots on the discocellular and small black marginal spots. — In **doubledayi** *Stgr. i. l.*, from Bolivia, the tooth in the black distal margin is shorter and the under surface of the forewing deeper yellow. — **luca** *Fruhst.*, from Bolivia and Ecuador, has a narrower black distal margin and no black border at the inner margin. — **conica** *Fruhst.*, from Colombia, is an aberration of *eleone*, in which the tooth in the black distal margin is prolonged. — **euremoides** is the name given by FRCHSTORFER to that form which is only margined with black towards the apex and in which the cell is lightly scaled with black only at the costal margin. — The butterflies fly over fields and in thickets and are fond of being driven by the wind.

L. smithi *Kirby* (20c), from Bolivia and Peru (3000 m.), has the wing-shape as in *eleone*, is lemon-yellow above in the ♂, light orange-yellow in the ♀, the distal-marginal markings are much narrower and the cell is not coloured with black. The under surface is more greenish than in *eleone* and the black marginal spots are wanting.

L. eucosma *Ersch.* (20c), from Peru, is larger than *smithi*, has the same yellow upper surface with black apical marking on the forewing, the underside is much lighter and has small black dots on the veins at the distal margin of the hindwing. — This species is only known to me from the figure, consequently I cannot state positively whether it belongs in this genus.

L. pinara *Fldr.* (20c), from Colombia (and Peru?) (3000 m.), has the peculiar form apparent in the figure. Upper surface white with black apical and distal-marginal markings, black median spot on the forewing and slight traces of black colouring at the anal angle of the hindwing. Under surface white, on the discocellular of each wing a black spot, as well as small black marginal spots on the hindwing, the latter and the apex of the forewing glossy. — **oiantheia** *Fruhst.*, from Peru, is smaller and has a narrower black distal margin on both wings, smaller median spot on the forewing and pure white apex to the forewing beneath.

L. nephthis *Hopff.* (20 c), from the mountains of Peru (3000 m.) and Bolivia, does not differ materially in shape from the *Pieris*-species. The upper surface is white, the forewing has rather broad black marking at the apex and the distal margin, the anterior half of the cell being also black, and the hindwing has a narrow black margin. The under surface is white, on the hindwing somewhat glossy, the forewing has the marking as above, but somewhat reduced, the apex is light, the hindwing has a small black median spot as well as a few very small black marginal spots at the posterior part of the distal margin. — **aymara** *aymara*. *Fruhst.* is an aberration with quite narrow black distal margin on the hindwing and interrupted subapical band on the forewing.

L. erinna *Hopff.* (20 d), from Peru, is likewise only known to me from the figure, hence I am not certain of its generic position. The upper surface is slightly yellowish white with rather broad black markings at the apex and the distal margin and large black median spots on the forewing, the hindwing with only very small black marginal markings. Underside similar, only with bluish instead of black apical and marginal markings on the forewing; hindwing with small black dots at the distal margin. The ♀ is yellower above and beneath and has paler and somewhat more copious black markings at the distal margin of the forewing.

L. cinnia *Fruhst.* (20 d), from Ecuador, has white upper surface with rather broad black markings at the apex and the distal margin, a black median spot and black costal margin on the forewing and also an interrupted black marginal line on the hindwing. The under surface is white with a black median spot on the forewing and strongly silvery gloss on the whole of the hindwing and at the apex of the forewing. ♀ unknown. — **falledra** *Fruhst.*, from Colombia, has a broader black costal margin on the forewing, especially in the distal part of the cell, and a broader black distal margin.

6. Genus: **Itaballia** *Kaye.*

The character of this genus consists in the formation of the precostal, which is not placed at right angles to the costal as in *Pieris*, but is strongly curved and in its distal part runs almost parallel to the costal; otherwise it has no structural differences from *Pieris*. From *Perrhybris*, with which it was united until recently, it is distinguished by the four-branched subcostal.

L. demophile *L.* (= *molphea* *Cr.*) (20 e), occurring from Colombia to Paraguay, is white above in the ♂, with black apex and black subapical half band, hindwing very narrowly margined with black, under surface of the forewing white, marked as above, but the subapical band reaching to the costal margin, hindwing yellowish with very broad black-brown margin. ♀ above and beneath yellowish, the subapical band broader and reaching the costal margin above also, costal and distal margins of the hindwing broadly grey-black. — **calydonia** *Bdr.*, from Central America and Venezuela, is somewhat smaller, less marked with black and the under surface of the hindwing without any dark markings. — **amathonte** *Cr.* is a very dark (perhaps rainy seasonal) form of the ♀. — **charopus** *Fruhst.*, from Rio Waupes, is distinguished by a narrow black costal margin of the forewing and the lesser development of the subapical spots, distal margin of the hindwing with moderately broad black scaling, veins suffused with black, beneath the subapical band of the forewing and the distal margin of the hindwing narrower. — **niphates** *Fruhst.* has the black spots much narrowed, hindwing with quite narrow antimarginal line, under surface of the forewing also less marked with black, hindwing diffusely margined with brown-black. Para. — **nimietes** *Fruhst.*, from Bahia, is distinguished from *demophile* by narrower and more sharply defined yellowish transverse bands on the forewing, under surface with longer subapical band. — **huebneri** *Fruhst.*, from Rio de Janeiro, is similar to *amathonte*. **niseias** *Fruhst.*, from Paraguay, is similar to *calydonia*: small, distal margin of the upper surface broader, markings otherwise as in *charopus*, under surface similar to *niphates*, but the black distal margin extending to the anal angle, hindwing with a rather broad, complete band of uniform width, which is sharply defined proximally. — **minthe** *Fruhst.*, from Ecuador, is essentially smaller than *charopus*, the wings are more roundish, the upper surface of the forewing with extended black apical spot, the hindwing however more narrowly margined with black and in the anal angle with a narrow, densely scaled area, under surface of the hindwing pure white, the black distal margin narrower; ♀ above with very broad white areas, the base of the cell yellowish with grey scaling, hindwing mostly white, the black distal margin deeply indented. — **lucania** *Fruhst.*, from Peru, is approximately as large as *niseias*, apical spots of the forewing narrower than in *minthe*, black scaling on the hindwing less extended; ♀ with light ochre-yellow ground-colour, black distal margin of the hindwing less indented, very broad at the anal end, beneath the distal margin of both wings brown, the ground-colour suffused with ochre-yellow. — **mustica** *Fruhst.*, from Bolivia, is very similar to *huebneri*, but the white central area of the hindwing more extended beneath; ♀ differing from *lucania* in the pale and diffuse yellowish ground-colour, under surface of the forewing whitish, yellowish towards the margin, cell suffused with yellowish, distal border of the hindwing obsolescent and in the middle part much narrowed.

L. pandosia *Hew.* (20 d), from Venezuela, is white above and beneath, with black margins and above with black base, on the under surface of the hindwing with small red-yellow spots in the dark distal margin.

leptalina. **leptalina** Bates (= *pisonis* Stgr.) is the form from the Upper Amazon. — **sabata** Fruhst., from Colombia, is smaller than *pandusia*, has a diffuse transverse band on the discocellular and more deeply incised black distal margin, the underside is yellowish, the white spots of the forewing are smaller and the black bands sharper. — **ophelia** Fruhst., from Peru (October), shows a stronger development of the black markings, larger white spots on the under surface of the forewing and a more intensively red band on the underside of the hindwing. — **ludovica** Fruhst. is the dry-seasonal form of *ophelia*; it is decidedly smaller and has the subanal band on the hindwing narrower (February).

marana. **I. marana** Doubl. (20d), from Ecuador, is similar to *pandusia*, but has on the upperside broader black margins and on the underside of the forewing a black subapical band as well as a similar median band on the under surface of the hindwing, which in the basal part is divided by a red-yellow band; the ♀, which is yellowish white above, stronger yellow beneath, has on the upper surface of the forewing a black subapical band and broader black margins.

pisonis. **I. pisonis** Hew. (20d), from Colombia and Peru, differs from **kiçaha** Reak., from Honduras, in that *kiçaha.* the black subapical band is complete above and beneath. Both forms have beneath at the margin of the forewing small white spots and at the distal margin of the hindwing a red-yellow macular band.

7. Genus: **Perrhybris** Hbn.

This genus differs from *Pieris* by the three-branched subcostal, there are no other sharp structural differences, but it is well characterised by the Heliconine-like style of marking, strongly developed in the ♂♂ only beneath but in the ♀♀ on both sides, which makes it probable that it belongs to another evolutionary stirps than the *Pieris*-species. Following the example of KAYE, we have removed the species with four-branched subcostal, which are also well differentiated from *Perrhybris* in facies, especially by their slighter sexual dimorphism, and placed them with the preceding genus *Itaballia*.

lypera. **P. lypera** Koll. (20e), from Colombia (and Central America?), is in the ♂ white above with black apical part of the forewing and broad black distal margin on the hindwing, under surface of the forewing like the upper, hindwing yellow with broad black margin, a similar longitudinal band in the anterior part, in which is placed a short red band starting from the inner margin, and a black stripe at the costal margin. ♀ black above and beneath, similarly marked on both sides, on the under surface of the hindwing as in *paravicinii.* the ♂ a red half band. — **paravicinii** Fruhst., from Ecuador (Balzabamba), has longer and narrower wings, a decidedly narrower black distal margin, on the underside of the forewing the cell is lighter, the apical spot somewhat smaller, on the underside of the hindwing the margin narrower in the posterior half, the subbasal band white and pointed, central area light yellow proximally, distally white instead of dark yellow.

pyrrha. **P. pyrrha** F. (= *iphigenia* S hufz) is distributed from Central America to South Brazil (São Paulo) and from the east coast to the Upper Amazon. The upper surface of the ♂♂ presents the facies of a typical White, whilst the ♀♀ are similar to the Heliconines. The so-called type-form *pyrrha* occurs in Surinam, from *digitata.* which **digitata** Fruhst., from Espiritu Santo, is distinguished in the ♂ by a narrower black distal margin and in the ♀ by an uninterrupted yellow band on the forewing. — The ♂♂ of **pandora** form. nov. (20e, f), from Rio de Janeiro and São Paulo, have a completely black hindwing except for a black marginal line, and reduced black markings on the forewing, the ♀♀ a much broken, light yellow (commonly sulphur-yellow) band on the forewing. — **ecieidias** Hbn. is probably a seasonal form from Surinam, with entirely white hindwing in the ♂ and very narrow black median band on the hindwing in the ♀. — **lucasi** Fruhst., from Cayenne, is a ♀-form with very broad yellow band on the forewing, the red median band on the hindwing being almost without dentition. — **pamela** Cr. is a ♀-form with strongly developed black markings on the *amazonica.* hindwing. — **amazonica** Fruhst. (= *pyrrha* Stgr.), from the Upper Amazon, has in the ♂ a narrow black margin on the hindwing and in the ♀ a moderately dentate band, red above and yellow beneath, on the *incisa.* hindwing. — **incisa** Fruhst., from Bahia, has in the ♂ a broader margin on the hindwing than *amazonica*, in the ♀ the much broken yellow band of the forewing is broadly margined with black near the base and *malenka.* the red band of the hindwing is produced into fine points. — **malenka** Hew., from Venezuela and Colombia, has in the ♂ the upper surface of the hindwing entirely white and the under surface with only a few pale markings, the ♀ has narrower wings, two red-brown bands reaching almost to the margin and only small *ostrolenka.* subapical spots, whilst **ostrolenka** Stgr., from Chiriqui and Panama, is almost without markings beneath in *bogotana.* the ♂ and the ♀♀ are much darker beneath than *malenka*-♀♀. — **bogotana** Bthr. (= *Mylothris bogotana* Bthr.), from Santo Fé de Bogotá, is in the ♀ similar to *malenka*; the yellow-brown median spots of the forewing and the somewhat shorter submedian longitudinal stripes are sulphur-yellow at the margins; above and well separated from them are two yellow, obliquely placed spots and above the cell three oblong spots of the *glessaria.* same colour in the oblique subapical row instead of the quadripartite band in *malenka*. — **glessaria** Fruhst., from Ecuador (Napo and Coca), has in the ♂ above the marginal band deep black, but moderately broad,

on the under surface of the hindwing with very broad and deep black markings, the ♀ is a beautiful red-brown on the proximal two-thirds of the forewing above, with small but deep black markings, the yellow band occupying all the distal part of the area between the first two median veins very broad and brightly coloured, the hindwing is dark red-brown with broad and prominent black markings. The underside of the forewing is marked like the upper, only with somewhat paler colour, the underside of the hindwing is almost entirely black-brown and has only three narrow brick-red longitudinal stripes and at the anterior part of the distal margin three large lighter spots (not flame-shaped). — **flammula** *subsp. nov.*, from Peru (Chanchamayo), *flammula*. is a large form, in the ♂ almost without any black at the distal margin of the hindwing, also beneath much less marked than *glessaria*, but with a considerable amount of sulphur-yellow at the distal and inner margins of the hindwing and some markings of the same tint also at the distal margin of the forewing. The ♀ has on the upperside but little red-brown colouring, strongly mixed with yellow, the four flame-shaped spots placed at the distal margin of the hindwing are lighter (yellowish) than the proximal part and the black markings are much reduced, there is a conspicuous yellow spot at the base before the subcostal, the yellow band on the forewing is narrow and strongly dentate and the black markings are moderately developed. The under surface of the hindwing has a distinctive grey-yellow colour, the black markings at the distal margin are very pale in contrast to the rest of the black markings. — **fruhstorferi** *form nov.*, from Panama, *fruhstorferi*. is a ♀-form with almost entirely black forewing. — **carmenta** *Fruhst.*, from Peru, is probably the dry-seasonal *carmenta*. form of *flammula*; it is considerably smaller and has fewer markings. — **austriana** *Fruhst.*, from Bolivia, is *austriana*. marked like *glessaria* on the forewing, the hindwing has a very narrow black distal margin. ♀ above with lighter and more vivid yellow bands and spots than *carmenta*, distal margin of the hindwing somewhat broader, under surface of the forewing with more yellow spots, the under surface of the hindwing yellowish and the red median band more distinct. — The ♂♂ of this species, like most Pierids, are fond of moist places on the ground, the ♀♀ of the forest.

P. flava *Oberth.* (20f), from the provinces of Leopoldina, Espiritu Santo and Bahia, must be regarded *flava*. as a separate species. The ♂ is yellow above and beneath with black apex to the forewing, in which the tooth-shaped projection between the 2. and 3. median veins, which all the forms of *pyrrha* possess, is wanting, the ♀ has on the forewing a band which is sharply defined at both sides and on the hindwing a median band which is likewise yellow but of a deeper tint.

P. lorena *Hew.* (20f), from Ecuador and Colombia, is white in the male above and beneath with *lorena*. black bands, the under surface of the hindwing, in addition to the black markings of the upper surface which may be seen in the figure, has also a black median band extending from the base to the middle of the wing, which is divided longitudinally by a red stripe, and a black stripe at the costal margin. The very differently coloured and marked ♀ has the markings beneath much as above. — **jumena** *Fruhst.*, from Ecuador, *jumena*. is distinguished by a much narrower white subapical band which has the black bordering much broader; on the under surface the red band is reduced and its black border broader. — **luteifera** *Fruhst.*, from Peru *luteifera*. (Chanchamayo), shows in the ♂ the white subapical band running to a point posteriorly, so that a wedge-shaped instead of rectangular spot is formed, underside yellowish instead of white, underside of the hindwing in the marginal and basal areas more extended yellowish. — **peruncta** *Fruhst.*, from Bolivia (Yungas *peruncta*. de la Paz), has broader black bands and the white subapical transverse spot is more symmetrical and narrower, the under surface of the hindwing is more broadly margined with black than in *luteifera* and the subapical band much lighter red.

8. Genus: **Pereute** *H.-Schäff.*

The species of this genus differ widely from the typical Pierids in facies; in the style of marking they have a distant resemblance to some Heliconines, but the form of the wings is quite different; among the Pierids they stand with *Archonias* completely isolated. In venation they agree with *Leodonta*: the subcostal is three-branched with one branch before the discocellular, the 2. and 3. branches form a moderately long fork, the precostal is weakly curved basad. The genus has its home about between 20° N. lat. and 30° S. lat.

P. autodyca *Bdv.* (21a), from the Brazilian province of Rio de Janeiro, is in the ♂ black above, *autodyca*. scaled with grey at the apex and on the posterior part of the forewing as well as on the hindwing with the exception of the distal margin, in the middle of the forewing the red band of the under surface shows through indistinctly. The ♀ is only scaled with grey on the basal part of both wings and bears on the middle of the forewing a broad brick-red transverse band, which is divided by the black veins. The dark under surface shows at the costal margin of the hindwing a large tear-shaped sulphur-yellow spot and at the base two red spots; in the ♂ the red band of the forewing is narrowed in the anterior part, the ♂ has further a white-red longitudinal band on the middle of the posterior part of the forewing. — **bardela** *Fruhst.*, *bardela*. from Rio Grande do Sul, which according to the description is smaller, on the upperside darker and therefore with less grey and rose-coloured scales, also on the underside of the forewing on the red transverse band towards the costa whitish instead of rose-colour, can scarcely be distinguished from *autodyca* according

to my material; on the other hand a ♀-aberration from Rio Grande do Sul with the band more pale red deserves to be named separately as ab. **rosa form. nov.** — **paula subsp. nov.**, from the province of São Paulo, is in both sexes above more plentifully scaled with grey, also at the distal margin of the hindwing in both sexes are large spots of grey scales, the ground-colour of the ♀♀ is not pure black, but black-brown, and the under surface much lighter both in the ground-colour and in the colouring of the red band.

swainsoni. **P. swainsoni** Gray (21 a), from Parana, Santa Catharina and São Paulo, differs from *autodyca* by its larger form, above by a more distinct transverse band on the forewing and by the difference in the grey scaling, which is confined to the inner margin of the forewing and the basal half of the hindwing, and further by a yellow spot at the costal margin of the hindwing. On the under surface of the ♂♂ the red median band present in the *autodyca*-♂♂ is wanting on the posterior part of the wing. Both species fly together in Rio Grande do Sul and São Paulo. — FRUHSTORFER has based the subsp. **phalera** (21 b) on specimens from Rio Grande do Sul and Santa Catharina, but with the exception of the darker colouring of the under surface I have not been able to confirm the characters given by him.

cheops. **P. cheops** Stgr. (21 b), from Chiriqui, has a bluish black upper surface with slight gloss, the ♂ has a median band of yellow scales, a similar one in the anterior part of the cell and sparse yellow scales at the inner margin of the forewing and on the basal part of the hindwing. On the lighter (black-brown) under surface the yellow band of the forewing is much broader and more distinct, at the costal margin of the hindwing stands a yellow band and at the base are two red spots. The ♀ has a broad red band and yellow costal margin on the upperside of the forewing. Both sexes have yellow antennae.

charops. **P. charops** Bdv. (21 b), occurring from Mexico to Panama (Chiriqui), is distinguished from the other forms of this species by copious grey-white (♂) or reddish (♀) dusting at the distal margin of the forewing. The median band of the forewing is brilliant yellow (♂) or red (♀) beneath. Both sexes have on the underside of the hindwing a long yellow stripe at the costal margin and a very small yellow stripe at the base.

subvarians. — **subvarians** Stgr. i. l., from Colombia, has in the ♂ less grey dusting on the upperside, and the median band of the underside is for the most part dull red instead of yellow. In the ♀ the submarginal red dusting is absent from the upperside of the forewing. — **columbica** Fruhst., from Colombia, is distinguished by a general reduction of the grey dusting, which remains more distinct, however, in the middle cell; yellow spots are placed at the discocellular; median band of the forewing beneath yellow. This form appears to be only a ♂-aberration of **cauca** subsp. nov., from the Cauca Valley in North Colombia. In this the grey dusting of the ♂ is uniformly reduced everywhere, the median band is red instead of yellow for more than its basal half, and shows through on the upperside. The ♀♀ have a very broad light red band on both sides of the forewing. — **peruvianus** Stgr. i. l., from Peru, has a broad yellow median band on the upperside of the forewing and distinct grey scaling on the apical part and the inner margin of the forewing; the hindwing has but little grey scaling. The under surface of the forewing has a sharp, sulphur-yellow median band.

meridana. ♀ unknown. — **meridana** Fruhst., from Northern Venezuela, has a strongly darkened upper surface without grey scales in and behind the middle cell and on the distal part of the hindwing, distal part of the median band on the underside of the forewing red. Amongst this form occurs ab. **praemeridana** Fruhst., which has the band of the forewing beneath entirely yellow. — This species has white antennae.

leucodrosime. **P. leucodrosime** Koll. (21 c). With this species, from Colombia, begins the series of those species which have also in the ♂ a red band on the upper surface of the forewing. Ground-colour black, proximal half of the hindwing and basal part of the inner margin of the forewing with blue-white scales, thorax and abdomen with white hairs. The red band of the forewing above ends at the subcostal and is not prolonged basad. The under surface is black-brown, the veins and the stripes between them are black, at the base of the hindwing there are two small red spots. Antennae white. Specimens with the red band much reduced are ab. **reducta** form. nov. — In **bellatrix** Fruhst., from Peru, the red band of the forewing is lighter and is not narrowed towards the margin, on the other hand the blue-white scaling on the proximal part of the wing is reduced, under surface somewhat darker. — **beryllina** Fruhst., from Ecuador, has a narrower and deep red band on the forewing. — **latona** Btlr., from Venezuela, has on the upperside of the forewing only a red spot at the end of the cell instead of the red band. Among this form occur also specimens with entirely black forewing: ab. **unicolor** ab. nov.

callinira. **P. callinira** Stgr. (21 c), from Peru, has black antennae. The upper surface as in *leucodrosime* is scaled with blue-white, the band of the forewing is of uniform breadth and in the middle cell continued somewhat towards the base, the basal half of the costal margin is finely, but sharply yellow, on the under surface of the hindwing the red basal spots are absent. ab. **musia** Fruhst., from North and Central Peru, is larger, the red band much narrowed at both ends and rounded off. — **sabrina** Fruhst., from Colombia, has an essentially narrower red band on the forewing and more abundant blue scaling at the base, at the costal margin of the forewing the red band is tinged with yellowish. — **numatia** Fruhst., from Bolivia, is smaller and paler, the red band broader, above in the middle more copiously scaled with black.

P. callinice *Fldr.* (21 c), from Venezuela, Colombia and South Peru, has likewise black antennae. *callinice*. The upper surface is black brown, the bluish scaling occupies the whole basal half of the hindwing but is completely wanting on the forewing. The light red median band of the forewing is only represented behind the discocellulars by a very small spot, is distally rounded and does not reach the distal margin. The under surface is as in *callinira*, but much lighter. The butterfly flies on forest-paths and is fond of drinking at moist places on the ground.

P. telthusa *Hev.* (21 c), from Peru and Ecuador, differs much from the preceding species. Antennae *telthusa*. white. Upper surface black, with subapical yellowish macular band, small light submarginal spots, bluish white inner-marginal part of the forewing and blue-scaled basal part of the hindwing, which also shows small bluish marginal spots. The under surface is black, the forewing has the pattern of the upperside and the hindwing a small yellow stripe at the costal margin and also three red basal spots. — **magna** *subsp. magna*, *nov.*, from the Lower Amazon (Obidos), is larger, the light area at the inner margin of the forewing is smaller and completely scaled with blue, the blue spots at the distal margin of the hindwing are larger, the under surface is darker and the yellow stripes at the costal margin of the hindwing very small. — **boliviana** *subsp. nov.*, from Bolivia, has a broader and more strongly yellow subapical band on the forewing above and beneath. The light area at the inner margin of the forewing is larger on both surfaces and only scaled with blue at the margins, the blue spots at the distal margin of the hindwing are smaller, the under surface is somewhat lighter (more brown) and the yellow stripes at the costal margin of the hindwing longer and broader.

9. Genus: **Archonias** *Hbn.*

The characters of this genus are rather uncertain, the facies of the butterflies forms the best criterion for deciding as to their genus. The subcostal is four-branched, the 2. branch originates beyond the apex of the cell and the 3. and 4. branches form a short fork in the apex of the wing; yet this character is not constant even in one and the same species. It will be advisable to place in this genus only the *tereas*-like forms which mimic *Papilio*.

A. tereas *Godt.* (= *iulus* *Hbn.*, ♀ = *marcius* *Hbn.*). The specimens from Rio de Janeiro and Espiritu *tereas*. Santo may be regarded as the so-called typical form. It can scarcely be separated from **uniplaga** *Fruhst.*, (21 d), from Rio Grande do Sul and São Paulo. This form is said to have only one white median spot on *uniplaga*. the forewing, which however among the material before me only occurs in one specimen from Santa Catharina; the remaining eight specimens from Santa Catharina and São Paulo have three median spots, one of which is placed in the cell. The ♀ has always somewhat more white marking on the forewing and more red, of a deeper colour, on the hindwing. — **critias** *Fldr.* (21 d), from Venezuela and Colombia, is very variable as *critias*. regards the white marking on the forewing, the red marking of the hindwing is more extended and of a deeper tone than in *tereas*. To ab. **hades** *Fruhst.* belong specimens with the forewing entirely black above *hades* and to ab. **nigripennis** *Bthr.* entirely black specimens — **approximata** *Bthr.* is the form from Central America. *nigripennis*. — **papilionides** *Fruhst.*, from Honduras, has somewhat modified white spots on the forewing and three *approximata*. intensively carmine-red spots on the hindwing; beneath the spots on the wings are yellowish. — **regillus** *Fruhst.*, from Ecuador, is smaller than *tereas*, the forewing has two white spots placed one under the other, *papilionides*. the hindwing three small pale red, lighter-margined ones. — **archidona** *Fruhst.*, from Ecuador (Balzabamba), *regillus*. has a completely black forewing or at least but little white marking, and on the hindwing above and beneath yellowish or white instead of red spots. — **rosacea** *Bthr.*, from Ecuador (Quito) and Colombia, has light red *archidona*. spots on the upper surface of the hindwing. — "In Santa Catharina *tereas* begins to fly early in September as one of the first heralds of spring, and animates in well-watered valleys almost all the sweet-scented flowering shrubs with its quiet beauty and its delicately coloured garb" (*FRUHSTORFER*). *rosacea*.

A. bellona *Cr.* (= ♀ *erycinia* *Cr.*, *brassolis* *F.*, *braselis* *Godt.*), from Guiana, although regarded as a *bellona* separate species, is probably really another form of *tereas*, which is extraordinarily modified in the wooded west. **A. bellona** is but little different from **negrina** *Fldr.*, from the Rio Negro. The ♂ is black above with *negrina*. large light yellow spots on the forewing and red streaks on the under surface of the hindwing, whilst in the ♀ the upper surface of the hindwing is also for the most part red. — **cutila** *Fruhst.* (21 d), from Ecuador, *cutila*. has large yellow spots on the forewing and three red streaks on the upper surface of the hindwing. — **phaloreia** *Fruhst.*, from Peru, has black upper surface with small yellow spots on the forewing. — **hyrneto** *Fruhst.* (21 d), from Bolivia, has more rounded wings than the preceding forms, the spots on the forewing are somewhat lighter yellow and a little larger, the upper surface of the hindwing is black, but the under surface has narrow red streaks, a yellow stripe at the costal margin and yellow marginal spots. In the ♀ the hindwing above is for the most part red. — **sabrina** *Fruhst.*, from Argentina (?), has very intensive yellow *hyrneto*. spots on the forewing, of which the curved one in the cell is very large; the underside of the hindwing is similar to that of *hyrneto*, the yellow marginal spots are very small. Baron G. von PLESSEN observed this species in large numbers and in both sexes in a thicket, so it may be assumed that the butterflies had emerged in this thicket; hence we may further conclude that the larva is gregarious. The butterflies are fond of settling on leaves. *sabrina*.

pharnakia. **A. pharnakia** *Frühst.* (= *archoniaoides* *Stgr. i. l.*) (21 e), from Peru, is very different from all the above mentioned *Archonias*-forms, and is probably a separate species. The upper surface is black-brown with yellow spots on the forewing as on the underside, the hindwing is entirely without markings; ♀ in the middle part of the forewing above and beneath brick-red.

10. Genus: **Charonias** *Rüb.*

For the reasons given under *Archonias* it is necessary to place the following species in a separate genus. In the neurulation there is a slight difference in that the two discocellulars of the forewing are of equal length and the upper discocellular of the hindwing is considerably shorter than the other two. The palpi are somewhat longer and stronger than in *Archonias*. Above all the external appearance is important in determining the genus.

eurytele. **Ch. eurytele** *Hew.* (21 e), from Ecuador and Colombia, is brown on the proximal part of the wing and black on the distal part, in the latter are placed yellow spots; specimens with white spots may be described as ab. **albimaculata** *ab. nov.* The under surface is quite similar to the upper, but there are rather large white submarginal spots at the distal margin of the hindwing. — In **lyceas** *Godm. and Salv.*, from Panama (Bugaba), there is only a streak-shaped spot of the brown colour of the forewing above present at the inner margin, the under surface of the forewing is entirely black. — **dismorphitis** *Btlr.*, from Chiriqui, has the forewing deep black with light yellow spots and the hindwing light brown. — **dismorphina** *Stgr. i. l.*, from Colombia, likewise has the forewing very dark all over, with larger deep yellow spots, the hindwing being dark brown. — **nigrescens** *Godm. and Salv.*, from Guatemala, is a still further darkened form. — The ♀♀ are only somewhat larger, otherwise not different.

theano. **Ch. theano** *Bdr.* (21 e), from Brazil (e. g. São Paulo) is black with whitish streak-shaped spots. The ♀ instead of white marks has dark yellow ones in the proximal and sulphur-yellow in the distal part of the wings. The under surface is similarly, but more copiously marked, the hindwing is yellow with black veins and black distal margin in which white spots are placed.

11. Genus: **Appias** *Hbn.*

In the neurulation this genus agrees entirely with *Pieris*, but the ♂♂ have a special characteristic, namely two stiff tufts of hair (secondary sexual organs) on the anal claspers at the underside of the abdomen; the ♀♀ are easily distinguished from those of *Pieris* by the peculiar colouring of the under surface, which is weaker-marked and has a slight pearly gloss. The genus is represented in India by numerous species, some of them beautifully coloured, and also in Africa by several species, but in America there is only one certainly distinct species, which until recently was classed with the genus *Daptonoura*. As the synonymous generic name *Tachyris*, given by Wallace, indicates, the insects belonging to this genus are extraordinarily active. According to the observations of Dr. A. SEITZ the *Appias* (especially *drusilla*) are only equalled in swiftness of flight among the butterflies by the representatives of the Hesperid genus *Spathilepia*; in a few seconds they traverse long distances. They not only fly extremely fast but also manage to take up their nourishment from flowers in the greatest haste. Only in imbibing water from the damp ground, where these insects, particularly the males, sometimes settle in large crowds close together, do they allow themselves time, and engage in this activity for the moment as an amusement.

drusilla. **A. drusilla** *Cr.* (= *ilaire* *Godt.*, *margarita* *Hbn.*, *albunea* *Dalm.*) (21 f) is distributed from Southern Florida to South Brazil, and is common. The ♂ is white above, with slight blackish apical marking on the forewing, sometimes entirely without marking, beneath yellowish white without marking, only with a small yellow stripe at the costal margin of the hindwing. The ♀ is white above on the forewing, on the hindwing yellowish, and has broad black margins, beneath white with a reddish sheen and very weakly developed markings similar to those on the upperside, as well as yellow dusting at the base of both wings, especially the forewing. The specimen figured by W. J. HOLLAND in his *Butterfly Book* on plate XXXV as ♀ is according to the shape of the wings a ♂ with strongly yellowish upper surface and more strongly developed black marking at the apex and basal part of the forewing; this form deserves special mention as ab. **hollandi**. *janeira*. **landi** *ab. nov.* — **janeira** *Bönnigh.*, hitherto only observed in the Botanical Gardens at Rio de Janeiro, has also in the male yellow colouring at the base on the underside of the wings; v. BÖNNINGHAUSEN regarded it as a distinct species. — **poeyi** *Btlr.*, from the Antilles, has in the ♂ no markings above and is somewhat more yellowish beneath; the ♀ has more strongly yellow ground-colour and slighter marginal marking on the hindwing above, the underside is likewise more yellow than in *drusilla*-♀.

12. Genus: **Cathaemia** Hbn.

The forms belonging here were until recently united with *Hesperocharis*, but RADCL. GROTE erected the genus *Unizsa* for them. This name, however, must give way to the older one given by HÜBNER. It is true that the only difference in the neuration is that in *Hesperocharis* the upper discocellular of both wings is angled and has a short spur running into the cell, in *Cathaemia* on the contrary these veins are only slightly curved and have no spurs, but the great difference in the style of marking and the shape of the wings confirms the generic independence of the two.

C. hirlanda Stoll., probably from Surinam, is distinguished from the better known **ninguida** Fruhst. *hirlanda*. (= *hirlanda* Stgr.) (21 f), from Peru, by the broader black distal margin of both wings. — **obnubila** Fruhst., from *ninguida*. South Peru, has the hindwing almost black, so that only the cell and a few postmedian spots remain white. — **fulvinota** Btlr., from Rio de Janeiro, is completely white above except for the yellowish basal part of *fulvinota*. the wings and the black costal margin of the forewing, the under surface is quite similar to that of *hirlanda* except that it has a red-yellow instead of a red marginal band on the hindwing. — **praeclara** Fruhst., from *praeclara*. Espiritu Santo, is in the ♂ of a beautiful light yellow on the upperside of the forewing, on the hindwing lemon-yellow with red band of the under surface showing through slightly, forewing with broad black distal margin, which at the 1. median vein is united with a black band starting from the costal margin, hindwing with narrow black margin, under surface similar to that of *hirlanda*, the black apical spot not joined to the subapical band, but separated from it by a yellow band. In the ♀ the black margin of both wings is broader. — **apicalis** Fruhst., from Ecuador, is intermediate between *ninguida* and *obnubila*. — **helvia** Latr. (21 f), said to *apicalis*. be from Mexico (?), of which only specimens from Colombia are before me, generally regarded as a separate *helvia*. species, is in my opinion also a *hirlanda* form, because I have specimens which unmistakably form a transition. In this form the red marginal band of the hindwing beneath is wanting, yet most specimens have traces of it. The aberration which is suffused with light yellow on the upperside of the forewing and on the underside of the forewing coloured with yellow over the whole surface is named by FRUHSTOEFER *ab. serda*; transitional forms, however, also occur. *serda*.

13. Genus: **Leodonta** Btlr.

The species of this genus were formerly classed with *Perente*. Although the two genera show no essential difference in the neuration and in the organs, they are yet sharply separated by their external appearance. But another character which is doubtless worthy of note consists in the formation of the anal claspers of the ♂♂, which are much smaller in *Leodonta* than in *Perente*. So far seven forms have been described, which have all been regarded as separate species, but I have only been able to recognise in them two species, one of which forms local races. — The butterflies fly over foot-paths and are fond of drinking at moist places on the ground.

L. dysoni Doubl. (21 e), from Venezuela, is the form which has the most white markings on the *dysoni*. upper surface, the hindwing is white with obsolete yellow spots at the base and broad black distal margin, which occupies about $\frac{1}{4}$ of the surface of the wing, at the distal margin are placed larger white spots, the median band on the underside of the hindwing is white with one yellow streak in each marginal cell, and the rest of the hindwing beneath is lighter than in the other forms. — **zenobina** Hopff. (21 e), from Peru *zenobina*. and Bolivia, has a broader black distal margin on the hindwing above and darker distal and basal parts on the hindwing beneath. — **intermedia** subsp. nov., from Northern Colombia (Cauca Valley), is smaller, the *intermedia*. black distal margin of the hindwing is somewhat narrower than in *zenobina* and the basal part darkened, the median band on the under surface of the hindwing is broader and yellow, only the veins being very narrowly whitish, on the upper surface of the forewing in the cell at the point of origin of the 2. median vein there is a white spot, which also beneath is much larger than in the preceding forms. — In **chiriquensis** Stgr., from Chiriqui, the black distal-marginal band of the hindwing reaches the discocellulars and at the distal margin there are larger white spots, the white median band of the forewing is narrower. — **zenobia** Fldr., from Colombia, is a smaller form with yellowish median band on the upperside, the basal *zenobia*. part of the hindwing is black, the light median band on the underside of the hindwing narrower, being interrupted in the middle. — In **tagaste** Fldr. (21 f), from Peru and Ecuador, the upper surface is for the *tagaste*. most part white, the hindwing has only a black margin. — **marginata** Schaus, from Venezuela (Merida), has *marginata*. half the forewing white, and 2 rows of small white subapical spots, the hindwing being similar to that of *dysoni*.

L. tellane Heur. (22 a), from Colombia, is yellow above with broad black margins, in which are *tellane*. placed yellow spots, the proximal part of the hindwing beneath is yellow, the base itself grey-brown.

14. Genus: **Catastieta** Btlr.

The only apparently certain difference in the neuration of this genus from that of *Archonias* consists in the second subcostal vein branching off either immediately at the upper angle of the cell or shortly before or after it. The external appearance of the representatives of this genus differs from that of *Archonias*

to such an extent that their generic separation seems fully justified. Although the *Catasticta*-species exhibit a fairly uniform facies yet they form various groups, which however are mostly connected by transitions. The genus is distributed from Mexico to South Brazil, but has its proper habitat in the mountains of the west. The species doubtless vary considerably according to the locality, whether they also show seasonal forms has not yet been ascertained. According to PAUL HAHNEL the ♂♂ of the *Catasticta*-species have a habit of settling in the sunshine on water-washed stones at the banks of rivers, and drinking so greedily that the water comes out again in drops at the anus at short intervals. Not infrequently they are washed away by the water, which however does not harm them in the least, for immediately afterwards they rise like a water-bird out of the waves, in order to settle anew on the stone where they can reach the refreshing liquid.

notha. **C. notha** Luc. (22a), from Venezuela, is above white with black apical and distal-marginal marking, very similar to the following species, beneath with white forewing, the apex of which is reddish grey, with small yellow stripes, hindwing diffusely red-white with yellow stripes in the cellules, distinct triangular yellow marginal spots and red basal spot.

corcyra. **C. corcyra** Fldr. (22a), from Venezuela and Bolivia, is above very similar to the preceding, except that on the hindwing the dark markings of the under surface show through. Underside of the forewing white with black apex, in which yellow stripes are placed, hindwing yellow with black-brown veins edged with white, black-brown dentate median band and vestiges of a marginal lunate macular band. — In *staudingeri* Btlr., from East Peru, the latter is completely developed. In this form the under surface of the hindwing is much lighter yellow and the black apical marking of the forewing only reaches to the second median vein. The ♀ has broadened black-brown apical marking of the forewing and black-brown spots at the distal margin of the hindwing above.

peris. **C. peris** Hopff. (22a), from Peru, is above white with black apical and subapical marking on the forewing and also a black marginal line on the hindwing. The under surface is white with brownish and yellow markings on the apex of the forewing. The underside of the hindwing is white, with a lunate line at the distal margin and in the middle, as well as similarly coloured markings at the base, where there is also a dark red spot; each area of the wing has a yellow longitudinal stripe. — *innuba* Stgr. i. l., from Bolivia, has yellow ground-colour above and beneath.

eurigania. **C. eurigania** Hew., from Ecuador, is undoubtedly only a local form of *straminea* Btlr. (22a), from *straminea* Peru; the latter is distinguished by deeper yellow ground-colouring, the presence of three subapical yellow spots on the forewing and somewhat different marking at the distal margin of the hindwing. The under surface has the typical *Catasticta*-marking.

theresa. **C. theresa** Btlr. (22a), from Chiriqui, has the outer margin of the forewing concave. The ground-colour is dark brown and the yellow markings are narrower than in *eurigania*. The under surface is similar, but the yellow markings are reduced in favour of the slightly glossy reddish-bluish colouring.

nimbice. **C. nimbice** Bdv. (22b), from Mexico, has in the ♂ straw-yellow, in the ♀ ochre-yellow markings on the upperside. — *bryson* Stgr. i. l. (22b), from Chiriqui and Guatemala, has broadened yellow markings on the upper surface, the under surface is somewhat lighter, especially at the base.

sinapina. **C. sinapina** Btlr., from Peru, resembles *nimbica* on the upper surface, but the median band is more distinctly divided by the veins and the spots of which it is composed are smaller, the submarginal spots of the forewing and the marginal ones of the hindwing are larger, hindwing produced at the anal angle, under surface entirely uniform, ground-colouring mustard-yellow and the veins and markings purple-brown. Only known to me from the description.

pinava. **C. pinava** Dbl. (22b), from Bolivia and Peru, is above similar to the preceding species, but has narrower yellow markings and the wings more rounded. The hindwing beneath is suffused with more glossy white, and consequently lighter. The ♀ has above much lighter yellow, almost white markings.

vapina. **C. vapina** Btlr., from Ecuador, is most closely allied to *pinava*, to which it is very similar on the upper surface. All the pale markings are lighter, more sandy yellow, except those at the distal margin, which are white. On the under surface colouring and markings are very similar to *philotheta*, but all the light areas are larger and sharper, the ground-colouring of the forewing is light chamois, of the hindwing pearly white. suffused with sulphur-yellow on the proximal half, the white marginal markings are as in *manco*, apex and distal margin of the forewing similarly coloured. Only known to me from the description.

colla. **C. colla** Dbl. (22b), from Bolivia and Peru, has above black-brown ground-colour with deep yellow macular median band and a submarginal row of small yellow dots on the forewing, broader yellow median band and some yellow marginal spots on the hindwing. The under surface is very gay on account of its

silver-white, sulphur- and orange-yellow, and also brownish and black spots, the arrangement of which may be seen from the figure. — **jacinta** *Btlr.* (22b), from Bolivia (seasonal form?), has much more yellow on *jacinta*. the upper surface. The under surface is less variegated on account of the almost complete absence of the *plesseni*. silver-white markings. — **plesseni** *subsp. nov.*, discovered by Baron G. v. PLESSEX in Ecuador (Baños), is somewhat smaller than *colla*, and has above lighter yellow median bands and more distinct submarginal spots; beneath all the yellow markings are likewise lighter and the ground-colour of the hindwing purer white, without reddish flush.

C. chelidonis *Hopff.* (22c), from Bolivia, has broader and more distinct yellow markings than **philomene** *Stgr. i. l.*, from Bolivia (seasonal form?). The under surface in both forms is quite similar, only *chelidonis* has more yellow markings on the forewing, particularly in the middle. — The small form from Ecuador with sharper yellow markings may be differentiated as **aequatorialis** *form. nov.*

C. hopfferi *Stgr. i. l.* (= *pinava* *Ittr.*, nec *Dbl.*) (22c), from Bolivia, is much smaller than the preceding species, but the submarginal yellow spots are much larger and both wings have small yellow marginal spots. On the underside of the hindwing the median markings are separated from the marginal spots by a sharply defined band of silver-white heart-shaped spots, the yellow markings are not orange, but sulphur-yellow. — Specimens with darkened upper surface are in the market as forma **obscurior** *Stgr. i. l.*

C. teutanis *Hew.* (22c), from Peru and Ecuador, gives on the upper surface the impression of a small *Pareronia*. Upper surface white, on the basal part of the forewing and the whole of the hindwing bluish white on account of the dark colouring of the under surface showing through, the apical half of the forewing black with small bluish white subapical and submarginal streaks, the hindwing with rather broad, deeply indented black distal margin. Under surface with the exception of the middle part of the forewing brown-black with slight yellow marginal and submarginal markings and two dark red basal spots on the hindwing.

C. ctemene *Hew.* (22c), from Ecuador, has the apex of the forewing produced. Upper surface white with black-brown apical and basal parts and black-brown marginal spots on the forewing; in the dark apex of the forewing are placed small white subapical spots. The underside of the forewing is white, that of the hindwing bluish brown with diffuse *Catantacta*-markings.

C. prioneris *Hopff.* (22c), from Peru, is white above with black-brown markings at the margin and at the base. Under surface white with bluish brown and sulphur-yellow *Catantacta*-markings and two red basal spots on the hindwing. ♀ has much broader marginal markings, particularly on the hindwing. — **caucana** *subsp. nov.*, from Cauca in Colombia, is distinguished by the want of the white submarginal spots of the forewing and slight black marking at the distal margin of the hindwing. The under surface is paler. The ♀♀ have above larger white spots at the discocellular than *prioneris*-♀♀.

C. sisamnus *F.*, from Peru, has black upper surface, a broad white median band and white marginal and submarginal dots and spots. The markings of the under surface correspond to those of the upper, median band yellowish white with small yellow stripes, marginal and basal areas black-brown with small marginal and submarginal spots and two red basal spots on the hindwing. — **telasco** *Luc.*, from Chiriqui, has on the hindwing narrower black distal margin and the white submarginal spots on the forewing are larger, the median band of the forewing is narrower and the under surface somewhat lighter. — **pitana** *Fldr.* (22c), from Colombia, has the median band still broader and very sharply defined, being in the ♂ white, in the ♀ white or yellowish; ♀♀ with lemon-yellow median band and spots of the same colour may be distinguished as ♀-f. **flava** *form. nov.*

C. bithys *Hbn.* (22d) occurs from Mexico to South Brazil. Upperside black-brown with narrow whitish macular median band, small white marginal and submarginal spots; sometimes one or the other row is wanting. Underside with small yellow stripes in the white median band of the hindwing, marginal part reddish black-brown, with small marginal and submarginal yellow spots edged with black. ♀ not different.

C. troezene *Fldr.* (22d), from Colombia, has black-brown upper surface with white macular median band, darkly dusted over, distinct submarginal and indistinct (in the forewing sometimes absent) marginal spots which on the hindwing are small but distinct. Under surface much marked with sulphur-yellow.

C. troezenides *Stgr. i. l.* (22d), from Colombia, though very similar to *troezene* beneath, has less yellow marking and broader black-brown marginal marking. Above differing somewhat in the greater part of the hindwing being white. In contrast to the hindwing the forewing shows less white markings than *troezene*.

C. hebra *Luc.* (22d), from Colombia, is similar to *troezenides* above, but the black margin of the hindwing is broader and dentate, the under surface however is rather different through the want of sharp *Catantacta*-marking. The underside of the hindwing is reddish brown with light submarginal and median bands, distinct triangular sulphur-yellow marginal spots, oblong sulphur-yellow submarginal ones and sulphur-yellow stripes in the proximal part of the wing.

strigosa. **C. strigosa** *Btlr.*, from Peru, is in form, size and general appearance like *hebra*, deep olive-brown, the last third of the middle cell of the forewing shows sparse sulphur-yellow scaling, the cell is surrounded by a row of oblong, pointed sulphur-yellow-brown streaks, the outer part of the first six streaks is divided by the ground-colour, hindwing sulphur-yellow-brown, but the veins and the distal margin olive-brown, three elongated light yellow spots bound the 2. to 4. interneural stripes. Under surface similar to that of *ctemene*, but the yellow spot on the forewing divided into narrow streaks by the broadly brown-edged veins. Only known to me from the description.

crowleyi. **C. crowleyi** *Btlr.*, from Venezuela (Monte Sierra and Culata), is similar to *strigosa*. Upperside dark purple-brown with whitish ash-grey areas and spots, the distal margin of the hindwing and the veins are sharply prominent; an orange-yellow spot at each side of the prothorax; under surface almost as in *actinotis*, but the hindwing of light reddish brown colour, without sharp median band, the yellow spots only edged with dark brown marks. Only known to me from the description.

semiramis. **C. semiramis** *Luc.* (22d), from Colombia, is above obscure grey-black with indistinct yellowish white submarginal and central spots, but beneath brilliantly marked. The hindwing is remarkable for the abundant sulphur-yellow markings, which are paler on the forewing, and the sharp black and snow-white markings.

niobe. **C. niobe** *Stgr. i. l.* (22d), from Bolivia, is above black-brown with indistinct yellowish submarginal and central spots on the forewing and light subbasal band on the hindwing. The ground-colour of the hindwing beneath is a light sulphur-yellow, on which the black and the dark sulphur-yellow, black-edged markings stand out well. The forewing has black-brown ground-colour with light marginal, submarginal and central spots, which are sulphur-yellow in the anterior part and white in the posterior.

suasa. **C. suasa** *Stgr. i. l.* (22e), from Bolivia, has very dark, black-brown upper surface, with obsolete whitish submarginal and central spots. The under surface of the hindwing is very variegated, with silver-white, sulphur-yellow, reddish brown and black-brown markings. The under surface of the forewing has black-brown ground-colour and white submarginal and central spots, as well as very small, white, anteriorly yellow, oblong marginal spots. — **suasella** *subsp. ncv.*, from Peru, is above much lighter (yellowish grey) and beneath much less sharply marked; the light markings on the underside of the forewing are yellowish and much more extended in the middle.

modesta. **C. modesta** *Luc.* (22e), from Peru, has the upper surface grey-brown with slight obsolescent light submarginal and central markings. The under surface of the forewing is yellowish with brown and dark yellow marginal markings, the underside of the hindwing is reddish brown with diffuse silver-white submarginal and central bands and dark yellow markings. — **actinotis** *Btlr.* (22e ♀), from Costa Rica and Chiriqui, has more extended yellowish markings above and darker coloured under surface. The ♀ is above black-brown with yellow disc on the forewing, which is intersected by the dark veins; the underside the same.

manco. **C. manco** *Dbl.* (= incerta *Dogn.*) (22e), from Bolivia, has black-brown upper surface with submarginal and central markings on the forewing, and on the hindwing marginal and submarginal markings, all ashy grey, as is also the base. The underside of the hindwing is silver-white with narrow black markings and broad sulphur-yellow ones. The ground-colour of the forewing beneath is impure white with a marginal lunate line, which is sharp and black in the anterior part, black-brown and not sharp in the posterior, the black-brown submarginal band and similar coloured basal part with light stripes; in the apex there are sulphur-yellow spots. — **philotheta** *Fldr.*, from Colombia, is above somewhat more yellow, on the underside of the hindwing less yellow, but more strongly marked with black. — **philoscia** *Fldr.*, from Venezuela, is less yellow on the whole upperside and on the underside of the forewing still more yellowish; can scarcely be separated from *philotheta*.

anaitis. **C. anaitis** *Hew.* (22e), from Ecuador, has ash-grey-yellowish upper surface with black-brown margins and small light submarginal spots. The under surface is silver-white with sulphur-yellow, black and brownish markings.

reducta. **C. reducta** *Btlr.*, from Ecuador, is above like *anaitis*, but much smaller and all the spots of the upperside are ochre-yellow, irregularly coloured with purple-brown, the veins are much more broadly blackish, the hindwing has a row of small white marginal spots, the macular band on the underside of the forewing is lighter ochre-yellow and the forewing is more falcate. — **boliviana** *Btlr.* differs in the light ochre-coloured spots on the under surface, which shows scarcely any admixture of dark. Only known to me from the description.

sordida. **C. sordida** *Btlr.*, from Bolivia, has the general colouring of *anaitis*, but is less yellow, the spot at the end of the cell and the spots of the central row of the forewing next to the costal margin are smaller. Distal margin of the hindwing blackish, occupying almost half the wing and crossed by spots of the ground-colour. Beneath all the light marks are reduced and the brown areas much broader, the light bands are cream-coloured, not pure white, and the yellow stripes and spots of a deeper colour.

C. flisa *H.-Schäff.* (22e), from Colombia, has black-brown upper surface with white macular median *flisa*. band, submarginal and very small marginal white spots; in the ♀ the anal area of the hindwing is yellow. The under surface is black-brown with a white macular median band, in which on the hindwing yellow spots are placed, the marginal spots being present as above, but whitish yellow.

C. chrysolopha *Koll.* (= *xeque Mengel*) (22f), from Ecuador, has black upper surface, on the *chrysolopha*. forewing a white macular median band and small diffuse submarginal white spots, the hindwing has a median band which is bright ochre-yellow in the middle and white anteriorly, and likewise small, diffuse submarginal white spots. The under surface of the hindwing is yellowish white with sulphur-yellow and black markings. The ♀ has rounder wings, is paler above and beneath and has on the hindwing also small light spots.

C. apaturina *Bth.* (22f), from Ecuador, is very similar to the preceding species, but has smaller *apaturina*. white spots and on the hindwing a narrower and light yellow median band. The under surface of the hindwing has almost snow-white ground-colour and ash-grey submarginal markings and more black markings in the middle.

C. toca *Dbl.* (22f), from Bolivia and Colombia, has black upper surface with white macular median *toca*. band and diffuse white submarginal spots. Under surface of the hindwing white with black marginal band of lunate spots and black median band composed of wedge-shaped spots, and also black basal markings; in each cellule is a sulphur-yellow streak. Under surface of the forewing black with white submarginal and median bands as well as yellow marginal spots. — **detrita** *form nov.*, from the Upper Amazon, is much *detrita*. paler above and beneath.

C. scaeva *Stgr. i. l.* (22f), from Peru. Upperside dark brown with yellow or yellowish macular *scaeva*. median band and submarginal spots of the same colour, underside paler yellow than in *toca* with brownish and (particularly on the hindwing) somewhat different markings; the line at the margin is composed of acute triangles.

C. tomyris *Fldr.* (22f), from Colombia and Venezuela, is above similar to *toca*, but larger. Upper *tomyris*. surface black with white macular median band and small white submarginal spots on the forewing, hindwing with yellowish median band. Under surface of the forewing black with submarginal and median macular bands and yellow marginal spots. Hindwing light yellow with black lines of lunate markings at the distal margin, black central and basal spots and a sulphur-yellow stripe in each cellule. ♀ not different. — **tamina** *tamina*. *Stgr. i. l.*, from Bolivia, has above a broader median band on both wings and on the under surface of the hindwing reddish-bluish colouring at the distal margin and in the basal area, with pure white ground-colour.

C. cora *Luc.* (= *zancle Fldr.*) (22f,g), from Venezuela and Peru, is above dark grey with marginal *cora*. and submarginal black bands. The under surface of the forewing has submarginal and median white macular bands with small yellow spots and yellowish white marginal spots. The under surface of the hindwing is marked with a confusion of white, yellow, black, brown and bluish.

C. uricoecheae *Fldr.* (22f), from Colombia, one of the most beautiful species of the genus, is very *uricoecheae*. similar to *cora* on the upperside of the forewing, but has dark red hindwing with black distal margin and black macular median band. The under surface is also very similar to that of *cora*, but much lighter.

C. cinerea *Bth.*, habitat unknown. Forewing above ashy grey, costal margin and veins broadly *cinerea*. black, distal quarter of the wing occupied by a broad black margin, in which are placed a row of whitish green spots and a row of very small white marginal spots, basal half of the hindwing ashy grey, irregularly scaled with black, distal half black with a row of whitish grey spots and a row of small sulphur-yellow marginal spots. Body blackish, palpi with two white lateral lines, throat with a small yellow spot at each side. Under surface very similar to that of *uricoecheae*, but the grey areas more slate-coloured, the yellow marks deeper in colour, all the light markings sharper and those on the forewing broader. Only known to me from the description.

C. vulnerata *Bth.*, from Ecuador, is similar to *uricoecheae*, but the basal area of the forewing also *vulnerata*. is red, the median band narrower, the red of the hindwing more restricted and greyer, the median bands are smaller, lighter red and diffuse, the inner margin is whitish. On the under surface the markings are sharper, the yellow marks more glossy, the grey central band of the hindwing is fairly straight on its inner side and is on that account broader, its white and yellow borders are narrower, the marginal spots broader, somewhat less angled. Only known to me from the description.

C. tricolor *Bth.*, from Ecuador, is also similar to *uricoecheae*, but all the spots on the upper surface *tricolor*. of the forewing are glossy lemon-yellow, the scarlet of the hindwing is less brilliant, the spot towards the base more reduced, a row of yellow marginal spots present. On the under surface the white and yellow markings are so much reduced that the ground-colour appears grey.

C. paradoxa *Stgr. i. l.* (22g), from Peru, is likewise a very beautiful species. Underside shiny black *paradoxa*. with light yellow submarginal and central spots on the forewing and bright yellow median band and submarginal spots on the hindwing. Under surface of the forewing black with submarginal and median white

macular band and small yellow marginal spots. Under surface of the hindwing white with black marginal line and black lunate line before it, black median sagittate spots and markings of the same colour in the basal area, all the black markings edged with pale ochre-yellow and small ochre-yellow stripes in all the cellules.

teutila. **C. teutila** *Dbl.* (= *sebennica* *Luc.*) (22 g). Sexes rather different. Upper surface glossy blue-black, ♂ with narrow white median band sprinkled with dark, and small marginal and submarginal spots of the same colour, in the ♀ the median band at least double as broad and dark yellow. Under surface grey-black, forewing with the markings as above and small yellow marginal spots, hindwing with yellow, white and black spots. From Mexico.

marcapita. **C. marcapita** *Thieme i. l.* (22 g), from Bolivia, has the forewing black above with wedge-shaped central yellow spot and yellow submarginal spots, upper surface of the hindwing yellow with black marginal lunate line, blackish, diffuse central spots and narrowly black veins. Under surface yellow with black marginal lunate line on both wings, black submarginal band and blackish basal part of the forewing, black wedge-spots and black markings in the basal part of the hindwing.

clara. **C. clara** *spec. nov.* (22 g), from Ecuador, has the upperside of the forewing light yellow with broad, glossy black margin, in which are placed a row of light yellow submarginal spots and two light yellow spots at the costal margin on the discocellulars. Upper surface of the hindwing light sulphur-yellow, strongly dentate, the dentition edged with black and the veins narrowly black, basal part of both wings likewise black. Under surface of the forewing white with black marginal and submarginal dentate markings, small yellow spots in the apex, the discocellulars and the basal area black. Hindwing yellow with narrow black marginal, medial and basal markings, all the veins narrowly black.

eximia. **C. eximia** *spec. nov.* (22 g), from Bolivia, is similar to the preceding species, but smaller, hindwing likewise dentate, though not so strongly. Above on both wings with larger black basal area, forewing light yellow with black marginal and submarginal bands as well as black median spot, hindwing deeper yellow with dentate black marginal band and submarginal black spots. Under surface of the forewing yellower, that of the hindwing lighter, the latter with less deeply dentate black markings, likewise all the veins narrowly black.

radiata. **C. radiata** *Koll.*, from Colombia, is similar to *nimbice*, but yellower, the under surface of the hindwing is much marked with red, and in the centre of the hindwing are two white spots.

emeris. **C. emeris** *Bdr.* Size and shape as *nimbice*. Forewing whitish yellow with blackish, proximally dentate margin, the apex uniformly blackish, a small blackish streak at the discocellular, joined to a larger spot at the apex. Hindwing ochre-yellow, distal margin with a row of small, wedge-shaped black spots along the veins. Under surface of the forewing as the upper, but with a row of yellow spots at the margin. Under surface of the hindwing blackish with a row of yellow marginal spots and ten or eleven white spots marked with yellow, the largest of which fills up the whole of the cell, a large blood-red spot at the base. Chile and Brazil. — Only known to me from the description. This and the preceding species might well be placed after *nimbice*.

susiana. **C. susiana** *Hopff.* differs from *chelidonis* by the longer, narrower forewing, which has exactly the same shape as in *nimbice*, and further by the ochre-yellow spots and bands of *chelidonis* being white, as well as by the form of the discal band. The latter is considerably narrowed in *susiana*, especially in the forewing, where it is only half as broad as in *chelidonis* and more divided into spots, the veins being broader. Its white colour, which in the forewing is dusted with black atoms, has in the hindwing a slightly yellowish tinge. The marginal dots at the end of the internervular folds, which are only indicated in *chelidonis*, here become distinct but very small white triangles, on the other hand the small white spot in the cell is extremely minute and indistinct. — Only known to me from the description; might be placed after *chelidonis*.

alma. **C. alma** *Hopff.*, from Bolivia, is rather unlike the other species on the upperside. It is distinguished by its yellowish white ground-colour, by the deep black veins of both wings, by the broadly black costal margin of the forewing, which occupies the greater part of the cell and of the base, and by the distal margin of the forewing, which is broad at the apex, narrows behind and is proximally bounded by a sharp, straight line and adorned in its whole length with small, fine, wedge-shaped yellowish white spots, whilst the rather broad black distal margin of the hindwing mostly shows yellowish white dots between the veins; the under surface of the hindwing resembles that of *telasco* and *pitana* *Fldr.*, but its markings are much more diffuse and indistinct. — Only known to me from the description. Might well be placed after *sisamnis*.

suadela. **C. suadela** *Hopff.*, from Bolivia, has the forewing broader than in *suasa*, the ground-colour of the upper surface is darker, the median macular band reduced to small obsolescent spots, the submarginal spots are very small, dot-like, but sharp, on the hindwing the median band is completely obsolete, the submarginal spots are very small and indistinct. The under surface has smaller white spots and less yellow markings. Should be inserted after *suasa*.

15. Genus: **Daptonoura** Btlr.

The species of this genus resemble *Appias*, but do not show such strong sexual dimorphism. The secondary sexual character peculiar to the *Appias*-♂♂ (tuft of hair on the underside of the abdomen) is wanting in those of *Daptonoura*. In the neuration this genus agrees with *Pieris* except in the shape of the precostal, which is curved proximad. This genus is confined to tropical America. Recently the name *Melete Swains.* has been employed for this genus, but it would be better to continue to use the well-known name *Daptonoura* instead. *Heliochroma* Btlr. appears to belong here. The species of *Daptonoura* are extraordinarily prone to the formation of local and aberrational as well as seasonal forms, but it is very difficult correctly to fix the limits of either the species or the individual forms. The butterflies, which are very common locally, love the shade of the woods, are fond of congregating at water and have a slow, gentle flight. They fly principally in December to January, singly all through the summer.

D. lycimnia Cr. (= *flippantha* F.) (23a) presumably comes from Surinam; the form from Venezuela, *lycimnia*, a specimen of which is figured, is probably not essentially different. Upper surface white with black apical and distal margin of the forewing and narrow ones of the same colour on the hindwing; sometimes a black spot in the middle of the costal margin of the forewing. Under surface yellow with broader black-brown distal margin and a black-brown spot at the costal margin of the forewing on the discocellulars; ground-colour yellow, lighter posteriorly on the forewing. — **harti** Btlr., from Trinidad, is smaller than *curymnia harti*. *Fldr.*, has the distal margin of the forewing more concave and the marginal band somewhat narrower, especially behind the 2. median vein; the hindwing sulphur-yellow, the dark brown distal margin very narrow; ground-colour of the under surface glossy canary-yellow, the basal area deep orange. The ♀ differs but little. — **phazania** Fruhst., from Bahia, comes between *lycimnia* and *pantoporia* Hbn. — **pantoporia** Hbn., *phazania*, from South Brazil, is a very variable form; it has the distal margin of the hindwing sprinkled with yellow *pantoporia*. or sometimes only a narrow black marginal line. It includes the following forms: ♀-f. **fiora** Fruhst. (23d), *fiora*. with dark yellow ground-colour on both surfaces, broader marginal bands and larger spots in the distal margin of the hindwing above; ♀-f. **pertho** Fruhst., with pure white forewing and dark lemon-yellow *pertho*. hindwing margined with bright red. — **limnoria** Godt. forms the transition to *pantoporia* Hbn. (from Espiritu *limnoria*. Santo and Rio de Janeiro), which again is only a little different from **petronia** Fruhst., from Santa Catharina, *petronia*. Theresopolis and Rio Capivary. Upper surface of the forewing slightly yellowish white with narrow black apical and distal-marginal markings, the hindwing light sulphur-yellow with very narrow black margin. Under surface deeper yellow with broader dark brown distal margin and spots of the same colour at the middle of the costal margin of the forewing; as always, the posterior area of the forewing is much lighter, almost white. With it occurs ♀-f. **daulia** Fruhst., with the forewing white above instead of light yellow. — *daulia*. **paulista** Fruhst., from São Paulo, has broader black apical and distal-marginal markings on the forewing, *paulista*. pure white upper surface and straw-yellow colour on the under surface. But ♂♂ also occur in which the upperside of the hindwing is a beautiful lemon-yellow and the underside almost the same, but deeper yellow: **paula** form nov. (23a). The ♀♀ vary likewise; if the almost white ♀♀ are referred to *paulista*, the strongly *paula*. yellow coloured ♀♀ with broader black markings must be treated as *paula*-♀♀. — **gargaphia** Fruhst., from *gargaphia*. Rio Grande do Sul, is smaller than *petronia*, has the brown-black distal margin of the hindwing scarcely visible in the ♂ and only about 1 mm. broad in the ♀ and narrower markings at the apex and distal margin of the forewing. Under surface in the ♂ whitish yellow, in the ♀ pale straw-colour; rare. Among it occurs: f. **amarella** Fruhst., entirely yellow in both sexes, also the ♂ with black cell-spot on the forewing. — *amarella*. **calymnia** Fldr. (= *leucadia* Fldr.), from the Rio Negro, is yellow and has a broad distal margin to both *calymnia*. wings above and beneath and in the margin of the hindwing 4 yellow spots; f. **theodora** Fruhst., the rainy- *theodora*. season form, is more beautiful yellow, has still broader dark margins, is suffused with light yellow on the basal half of the hindwing above and the underside, with the exception of the posterior half of the forewing, is almost canary-yellow. — **marica** Fruhst. (= *leucadia* Stgr.), from the Upper Amazon, has very broad *marica*. apical border and more or less yellowish ground-colour, also very narrow distal margin of the hindwing. f. **moesia** Fruhst. differs from it in the much broader distal border of both wings. — **euryminia** Fldr., *moesia*. from Colombia, has above mostly an apical spot which is almost rectilinear towards the base, and very narrow *euryminia*. black distal margin on the hindwing. The under surface is sulphur-yellow. The dry-season form, **asta** Fruhst., *asta*. has narrower and more deeply incised apical spot on the forewing, yellowish instead of white upper surface and pale ochre-yellow under surface. — **aelia** Fldr., from Ecuador and Colombia, has the upper surface *aelia*. white with rather broad apical spot, unevenly defined proximally, and very narrow black margin on the hindwing. The under surface is greenish yellow with conspicuous ochre-yellow basal spot on the hindwing. — **huebneri** Btlr. (23d), from Brazil (Leopoldina), is smaller than *limnoria*, the black apical margin narrower, *huebneri*. regularly dentate proximally, the hindwing is glossy sulphur-yellow with broad orange-yellow, black-edged distal margin. The ♀ is likewise smaller than *limnoria*, the median spot is sometimes connected by a stripe with the distal margin, the hindwing as in the ♂, but the orange-yellow distal margin broader. — **napona** *napona*. Fruhst., from Ecuador (Rio Napo), is larger than *aelia*, distal margin of both wings broader, that of the hindwing as in *moesia*, showing through from the underside, in the ♂ the apical third of the forewing beneath

light yellow like the hindwing, in the ♀ the forewing pale yellowish, the hindwing sulphur-yellow, the black distal margin with five diffuse canary-yellow spots, under surface of the forewing sulphur-yellow, of the *pistoria*. hindwing canary-yellow. ♂-f. *pistoria* *Fruhst.*, from the Rio Napo (Ecuador), has still broader distal margin of both wings and pure white under surface. In ♂-f. *latilimbata* *Btlr.*, from Ecuador, the distal margin of *hypoxantha*. both wings is broad and brown. — *hypoxantha* *subsp. nov.*, from Cuba, is smaller, has narrower black *palaestra*. margins and yellow under surface. — *palaestra* *Hopff.*, from Peru (Pozuzo), has deep black apical third, regularly defined proximally, narrow, sometimes extremely narrow black margin, pure white upper surface and very light yellow under surface with broader distal margin on the hindwing. With it occurs f. *ped-* *pedrosina*. *maeotis*. *rosina* *Btlr.*, with the under surface completely white. — *maeotis* *Fruhst.*, from Peru, has the wings narrower. Upper surface in both sexes entirely white, ♂ with obliquely placed black apical spot, which extends to the 1. median vein, ♀ with rectangular black median spot on the forewing, under surface light ochre-yellow. Among them occur the following aberrant forms: *iphigenia* *Fruhst.*, with broader, deep black apical spot, wings on both sides pure white, ♂ with thread-like black distal margin, widened into small spots at the middle veins, ♀ with broad black discocellular on the forewing and broader distal margin on the hindwing. *velia*. wing, marked with five white dots, under surface with grey-black distal margin on both wings; *velia* *Fruhst.*, from Tarapoto, has the shape of *maeotis*, ♂ above purer white with equally broad, deep black distal margin on both wings above and beneath as in *iphigenia*, under surface of the forewing pure white except the subapical area, hindwing above beautiful light yellow; *radiata* *Fruhst.*, from Tarapoto, has the apex of the forewing slightly rounded, upper surface in the ♂ yellowish white, distal margin moderately broad, hindwing above yellowish, distal margin brown, running off proximally into fine streaks along the veins. — *myrtis* *Fruhst.* (= *lycimnia* *Stgr.*), from South Peru (Cuzco), has the upper surface white with narrow black apical part and also narrow black margin on the hindwing, underside of the hindwing lemon-yellow, margin grey-brown. — *donata* *Fruhst.*, from Bolivia (Coroico), recalls *peruviana* *Luc.* Upper surface white, hindwing especially at the inner angle slightly suffused with light yellow; under surface similar to *maeotis*, underside of the hindwing and (as usual) the costal margin of the forewing canary-yellow, apical spot narrow, black-brown, proximally strongly undulate, black cell-spot pointed posteriorly, hindwing with very narrow black marginal line, which only at the veins assumes the form of small pointed teeth; probably a dry-season form. *bianca*. f. *bianca* *Fruhst.*, from Bolivia (Yungas de la Paz), is above entirely white without any yellowish tinge, with extended deep black apical spot and the distal margin of the hindwing scarcely 1 mm. broad, under surface pure white with pale yellowish subapical area and the anterior half of the hindwing slightly suffused with yellow; distal margin grey, on the hindwing about 2 mm. broad, cell-spot distinct. — *pseudomyrtis* *Fruhst.*, from Yungas de la Paz, recalls *maeotis* and in the shape of the wings *aelia* and *myrtis*, but differs from *myrtis* by a somewhat more extended black distal margin on both wings and by the apical spot on the underside of the forewing being brown instead of black. — *monica* *Fruhst.*, from Bolivia, recalls *iphigenia* by the very broad apical margin of the forewing and the ventricose projection in the middle of the hindwing; the dull chalk-white hindwing has a light yellow distal margin about 2 mm. broad, which is adorned with some black spots. Under surface with brown distal margin and triangular spot at the apex of the cell of the forewing, otherwise washed-out straw-yellow. — *leucadia* *Fldr.* (23a), from the Rio Negro and Bolivia, is white above, with moderately broad black apical spot on the forewing and very narrow distal margin on the hindwing; the black median spot of the forewing shows through somewhat above; underside of the forewing light sulphur-yellow, darker at the costal margin, hindwing light ochre-yellow, the narrow distal margin of the hindwing, the apical and the oblong median spot as well as the costal margin of the forewing are grey-black.

peruviana. **D. peruviana** *Luc.* (23a), from Peru (Pozuzo), occurring up to 10,000 ft., has white upper surface, a narrow, sharply dentate apical spot on the forewing and very narrow, sharp distal margin on the hindwing; under surface whitish yellow with slight gloss, sharp black veins on the hindwing, diffuse apical spot and similarly indistinct discocellular on the forewing. f. *yolanda* *Fruhst.*, from Peru (Chanchamayo), is *galatia*. small, has larger black apical spot, and the under surface of the hindwing is straw-yellow. — *galatia* *Fruhst.*, from Bolivia, has the upper surface yellowish, the black apical spot reduced and the under surface almost without markings except for the black veins of the hindwing, only the apex of the forewing being slightly tinged with grey. — *regnidas* *Fruhst.* (23c), from Ecuador, shows extended black apical margin of the forewing, which, however, is more feebly dentate. ♀ orange-yellow.

laria. **D. laria** *Fldr.* is the Colombian form of *louisella* *Fruhst.* (23a), from Peru, from which it differs *louisella*. but little. Both, as also the following Bolivian form, are probably only forms of *peruviana*. In *louisella* the upper surface is pure white, the not very broad apical spot of the forewing and the sharp and very narrow distal margin of the hindwing are deep black; the under surface of the forewing is yellowish white with grey-black apical spot, the hindwing is somewhat darker yellowish with ochre-yellow basal spot, grey-black marginal line and the extremities of the veins black. — *boliviana* *Fruhst.*, from Bolivia, has the wings still more rounded than *louisella*, the apical spot less narrow and more strongly dentate, hindwing with scarcely perceptible black distal margin, ground-colour pure white, underside with light grey-brown apical spot, hindwing with narrow black marginal line and the extremities of the veins slightly tinged with black.

D. polyhymnia *Fldr.* (= *phaenna Fruhst.*) (23b), from Colombia, is lemon-yellow above with broad black margins, the discocellular of the forewing is slightly suffused with black, under surface deeper yellow with broader grey-black margins, in which are placed diffuse yellow spots, rather broad grey-black discocellular spot and similar costal margin of the forewing, as well as ochre-yellow basal spot on the hindwing.

D. isandra *Bdr.* (23b), from Mexico, is impure white above with small grey-black distal-marginal markings on the forewing. Under surface of the hindwing light ochre-yellow with deep ochre-yellow basal spot, forewing somewhat lighter, in the posterior part almost white, with grey scaling on the discocellular: ♀ light orange-yellow. — FRUHSTORFER has named the Honduras form **kleta**. Its ♀♀ are above pale yellowish white, beneath either light canary- or ochre-yellow.

D. florinda *Btlr.* (= *chiricana Stgr.*) (23b), from Veragua and Chiriqui, has somewhat darker yellow ground-colour than *polyhymnia*, very narrow black apical and distal-marginal markings on the forewing and black marginal line on the hindwing. The under surface is deeper yellow with broader black distal margin on the forewing, in which yellow spots are placed, similar black marginal band on the hindwing and black discocellular on the forewing. The female has broader marginal markings and the hindwing ochre-yellow above and beneath. — **monstrosa** *Btlr.* (= *panamensis Stgr.*), from Veragua and Panama, has the upper surface of the forewing white in the ♂, in the ♀ the hindwing somewhat ochre-yellow. Larva according to H. RIBBE similar to that of *Gonepteryx rhamni*, lives on the calabash tree. — **anceps** *Stgr.*, from Chiriqui, has in the ♂ only a yellowish tinge at the inner angle, the hindwing otherwise white, the ♀ has dull yellow hindwing. — **chagris** *Stgr.*, from San Juan on the Rio Chagres, has the forewing white beneath with yellow costal margin, the ♀ has larger yellow spots in the black distal margin of the hindwing.

D. limbata *Ky.*, from Ecuador, is white in the female, ash-grey at the base and the costal margin of the forewing, the brown distal margin reaches to the anal angle, forewing with narrow ash-grey margin; under surface white, without spots, hindwing somewhat yellowish, club of the antenna spotted with yellow. ♂ unknown.

D. leucanthe *Fldr.*, from Ecuador and Colombia, differs from **inaequalis** *Btlr.*, from Bolivia and Peru, by its larger size. In *inaequalis* the distal margin of the forewing is straighter, the black apical margin narrower and proximally dentate, only the fringes (not the margin also) of the hindwing are blackish. ♂ above white, ♀ glossy orange, at the costal margin and in the cell of the forewing canary-yellow, beneath the apical area of the forewing and the whole of the hindwing are ochre-yellow, the ♀ is beneath saffron-yellow.

D. salacia *Godt.* (= *vectclusa Btlr.*) (23c,d), from Mexico, is above white with narrow black apical margin on the forewing and similar marginal line on the hindwing, at the costal margin of the forewing is a subapical black spot, the markings of the under surface show through somewhat. The under surface of the hindwing is yellow with brown distal margin and a similarly coloured median band, which extends from the costal margin to beyond the 1. median vein, becoming gradually narrower, the forewing is white, with ochre-yellow basal area, a large subapical yellow spot which is bounded by the brown apical marking and proximally by a diffuse spot, and brown discocellular. The ♀ is of more compact shape, with paler ground-colour above and beneath and more developed brown markings (only known to me from figures). — **cubana** *Fruhst.*, from Cuba, is above purer white, on the under surface of the hindwing purer yellow, and has on the forewing less black-brown markings in the ♀, while on the other hand at the distal margin of the hindwing, especially above, they are somewhat broader.

D. idiotica *Btlr.* (23c) (locality unknown), for which BUTLER has erected the genus *Heliochroma* and which is only known to me from the figure, probably belongs in this genus (not to *Hesperocharis*). Upper surface of the forewing lemon-yellow, of the hindwing orange-yellow, under surface likewise orange-yellow except for the yellow posterior part of the forewing; no markings on the under surface of the hindwing except two small brownish spots at the costal margin; body blackish.

16. Genus: **Mathania** Oberth.

This genus differs sufficiently from *Pieris* and *Daptonoura* not only in the peculiar contour of the wings but also in neuration. The 2. subcostal vein does not arise as in *Daptonoura* at the upper angle of the cell, but far beyond it, not far from the apex: *Mathania* further differs from *Pieris* by the subcostal being only four-branched and by the precostal being curved proximad. The palpi are strikingly hairy. The butterflies have mostly a leaf-like under surface. They appear to be purely inhabitants either of the high mountains or of districts in western South America with temperate climate.

M. leucothea *Molina* (= *gayi Blanch.*) (23b), from Chile, is the most like the *Daptonoura*-species. The upper surface is pure white, the under surface yellowish white with more strongly yellowish apex to the forewing and more or less inconspicuous dark clouded markings on the hindwing. It is true this species does not altogether agree with the others in neuration and wing-contour, but unless a separate genus is erected it is probably best to place it in *Mathania*. It is possible that the name *leucothea* really covers two species; my material, however, is insufficient to settle this question.

agasicles. **M. agasicles** Hew. (23b), from Bolivia and Peru, is above lemon-yellow with grey apex to the forewing, the underside of the hindwing and the apex of the forewing bear undulate grey-green lines, through the middle of the hindwing runs a distinct stripe (as in the Indian *Hebomoia*-species), the costal margin of the hindwing is somewhat darker, the greater part of the forewing beneath is impure yellow and the veins are distinctly visible.

gaujoni. **M. gaujoni** Pouj. (= *agasicles* Hew?), from western Ecuador (Loja), is as large as *esther*, similar in shape to *Dapt. idiotica*, but the shape of the forewing more falcate, hindwing somewhat lengthened at the distal margin. Upper surface light lemon-yellow, apex of the forewing light brown-green. Under surface of the forewing as above, but paler, apex marbled with white-yellow. Under surface of the hindwing olive-coloured, anteriorly much darkened and marbled like the apex of the forewing; it has a transverse, yellowish olive longitudinal line. Between the three median veins are strongly darkened oblique lines, which give the hindwing the appearance of a leaf. Only known to me from the description.

aureo-maculata. **M. aureomaculata** Dogn. (23d), from western Ecuador (Loja), is similar to *gaujoni*, but the hindwing is rounded at the anal angle. Upper surface light lemon-yellow, the apex of the forewing olive-brown, very similar to that of *gaujoni*. Under surface of the forewing uniform lemon-yellow, the apex as above, but almost the whole of the cell is occupied by an orange-yellow spot, which extends along the costal margin and sends out rays between the adjacent veins. Under surface of the hindwing yellow, finely powdered with olive-coloured atoms, more strongly so at the costal margin, and four yellowish submarginal dots. — A ♂ before me from North-East Peru (Huancabamba) answers to this description; another ♂ from Hillapani is above very light yellow, almost white, also beneath much more whitish, the orange-yellow spot in the cell of the forewing somewhat smaller and the yellow interneural stripes are narrower in the anterior part of the wing and altogether absent in the posterior part: **pallida** subsp. nov. (23d).

esther. **M. esther** Oberth. (= *aureomaculata* Dogn.?) (23b), from Bolivia, is deeper yellow than *agasicles*, particularly on the proximal part of the forewing, the apex of the forewing has even less grey marking. The under surface of the hindwing is grey-greenish, darker at the costal margin, through the middle of the hindwing from the base to beyond the cell extends an indistinct yellowish stripe; between the median veins are placed four yellowish submarginal dots. The anterior proximal part of the forewing beneath is orange-yellow, the rest light yellow.

17. Genus: **Hesperocharis** H.-Schäff.

This genus is distributed from Mexico to South Brazil. They are plain white or yellowish insects with mostly small markings on the upper surface and characteristically modified lunate markings beneath. Of the four subcostal veins only the first branches off proximally to the discocellulars, the second nearer to the apex, the third and fourth branches form a short fork in the apex. Both radials run free, but the upper discocellular is very small. The costal margin of the hindwing is somewhat flexuose, the precostal curved proximad. The *Hesperocharis* are lively little insects, which fly in the most burning sunshine (between 10 and 1 o'clock), and therefore scarcely deserve their generic name.

antipator. **H. antipator** Druce. Upper surface of both wings pure white, hindwing very long. Under surface of the forewing white, base, veins and apex spotted with yellowish scales; hindwing yellowish white with dark veins. Nearly allied to *leucania* Bdv., but differing from it by the elongated hindwing, whiter colouring and complete absence of markings on the underside. Vera Paz. — Only known to me from the description.

leucania. **H. leucania** Bdv. Shape as in *ilaire* (*drusilla*-♂), wings rounder. Upper surface without spots, greenish white as *Catopsilia florella* and *pyranthe*. Under surface of the forewing of the same colour, distal margin broadly yellowish. Under surface of the hindwing anteriorly greenish yellow, in the middle more grey, but little prominent oblique, curved, flexuose markings at the distal margin, interrupted by the veins. Brazil. — Only known to me from the description.

catasticta. **H. catasticta** spec. nov. (23e), from São Paulo, is superficially nearly allied to the *Catasticta*-species. Upper surface of the forewing pale sulphur-yellow, of the hindwing light ochre-yellow. The forewing has a rather broad black distal margin, in which small yellowish subapical spots are placed, and also a very irregular black spot on the discocellular and a black costal-marginal stripe, the hindwing has black triangular spots at the distal margin. Under surface of the hindwing yellowish white with black and yellow marginal spots, ground-colour of the hindwing white with black triangular distal-marginal spots, a submarginal lunate band of the same colour, a large indistinct black spot near the inner margin; in all the cellules there are placed yellow spots, at the base a red spot.

nera. **H. nera** Hew. (23e), from Ecuador and Bolivia, is above white, at the base of the hindwing yellowish and at the apex of the forewing grey-black. Under surface of the forewing white, apex paler grey than above and yellowish, ground-colour of the hindwing white with diffuse grey-blackish marginal, submarginal and median spots, as well as yellow streaks in the cellules of the hindwing and orange-yellow *boliviana* basal spot. — The somewhat smaller **boliviana** form. nov., from Bolivia, which has very weak markings

beneath, appears to be a seasonal form. — **nereis** *Fldr.* (23f), from Colombia, has the apical marking of *nereis*. the forewing above broken up into stripes and the under surface of the hindwing somewhat lighter. — **amazonica** *Fruhst.*, from the Upper Amazon, has broader black apical marking on the forewing and rather *amazonica*. broad black distal margin on the hindwing. The under surface is white with grey-black markings and sharp orange-yellow basal spot. — **flavescens** *form. nov.* (23e) (aberration or seasonal form?) differs from it beneath *flavescens*. by a large light yellow spot in every cellule of the hindwing and yellowish stripes at the proximal part of the dark apex of the forewing. — **nilios** *Fruhst.*, from the Rio Waupes, has a broader, dentate distal margin of *nilios*. the hindwing and also darker and broader markings on the hindwing beneath, by which it is distinguished from the less marked **nymphaea** *Möschl.*, from Surinam. — **flaveola** *Fruhst.*, from Ecuador, is above and *nymphaea*. beneath a beautiful dark yellow, apex of the forewing beneath with obsolescent yellowish spots. — **aphaia** *flaveola*. *Fruhst.*, from the Rio Waupes, is a form of *nilios* with the upperside of the hindwing light yellow. — **aida** *aphaia*. *Fruhst.*, from Peru, is smaller than the preceding forms and has the upper surface of the hindwing yellow. *aida*. — Among it occurs **minia** *Fruhst.*, from Southern Peru, probably as a dry-seasonal form. Upper surface *minia*. white, hindwing without black distal margin. — **nirvana** *Fruhst.*, from Bolivia, has the upper surface pure *nirvana*. white with only moderately broad black apical spot, under surface almost pure white with completely diffuse black markings, only the apex of the forewing broadly suffused with light grey and a few remnants of black spots at the costal and distal margins of the hindwing, where also a few traces of the interneural stripes are preserved. To it belongs as a rainy-seasonal form **vitha** *Fruhst.*, similar to *amazonica*, but the hindwing *vitha*. with narrower black distal margin, otherwise entirely white, slightly suffused with ochre-colour at the base. Beneath at the apex of the forewing broadly grey-black with large whitish pointed spots, under surface of the hindwing with thick grey-black reticular marking and the apex of the cell broadly margined with grey; without orange-coloured interneural stripes.

H. costaricensis *Bates* (23f), from Costa Rica and Chiriqui, is above white with very slight dark *costaricensis*. markings at the apex of the forewing. Under surface of the hindwing and of the apex of the forewing dingy light yellow with indistinct dark markings, veins slightly dark, posterior part of the forewing white.

H. nereïna *Hopff.* (23f), from Peru and Bolivia, is above yellowish white with blackish markings in *nereïna*. the apex of the forewing and light yellow interneural stripes. The under surface of the forewing has yellow apex with dark markings and much more distinct yellow stripes; the latter are still more conspicuous on the hindwing and the hindwing has also blackish distal-marginal spots, a submarginal lunate line and black veins. — **elea** *Fruhst.*, from Bolivia and Peru, has dark yellow ground-colour above and beneath. — **phainia** *elea*. *Fruhst.*, from Peru, is a variety of *nereïna* with white upper surface and delicate orange-coloured interneural *phainia*. stripes beneath, — In **chloris** *form. nov.*, from Bolivia (Coroico), the upper surface is delicately greenish *chloris*. yellow-white and the black apical marking of the forewing is broken up into separate small spots. The under surface is purer white and the dark and yellow markings less sharp:

H. anguitia *Godt.* (23f), from South Brazil (Rio de Janeiro, São Paulo, Santa Catharina, Rio Grande *anguitia*. do Sul), is above white, sometimes (especially in the ♀) yellowish white and very little or scarcely at all marked with black at the apex and the distal margin of the forewing. The under surface of the hindwing and of the apex of the forewing is yellowish, the rest of the forewing white, on the hindwing and at the apex of the forewing blackish hook-shaped markings. Both the colouring and the markings of the under surface are somewhat variable. The ♀♀ have rounder wings and mostly even less markings. Seasonal forms appear to occur, which, however, differ very little.

H. catogramma *Koll.*, from Colombia, is allied to *anguitia*, larger; hindwing obtusely dentate, upper- *catogramma*. side white with a slightly yellowish tinge, distal margin and apex spotted with black; hindwing without spots. Under surface with pale saffron-yellow scaling on the forewing as above, only the spots are here changed to fine streaks, veins of the hindwing black, a zigzag line parallel to the distal margin. — Only known to me from the description.

H. erota *Luc.* (23e) occurs in the same localities as *anguitia*. It is somewhat larger, with more mark- *erota*. ings and has as characteristic mark a short, broad black streak, directed basad, on the under surface of the hindwing at the lower discocellular.

H. marchalii differs from the preceding species by its somewhat elongated and dentate hindwing; the distal margin of the forewing is also not smooth as in the other species. — **marchalii** *Guér.* (23f), from *marchalii*. Colombia and Venezuela, is above slightly yellowish white with small, pointed marginal and submarginal black spots on the forewing and a black distal-marginal line on the hindwing, which is somewhat thickened at the ends of the veins. The under surface is marked quite similarly to the preceding species, but the black streak at the lower discocellular is absent. — **coloë** *Fruhst.*, from Peru and Bolivia, has the under surface *coloë*. pale sulphur-yellow and the hindwing more deeply dentate. — **sulphurescens** *form. nov.*, from West Colom- *sulphu-* *rescens*. bia (Cauca Valley), has the upperside light sulphur-yellow and the underside somewhat deeper yellow. — **masonia** *Fruhst.*, from Ecuador, has dark sulphur-yellow upper surface and “more pointed” (more elongated *masonia*. posteriorly?) hindwing. Flies in April and again in October.

18. Genus: **Leucidia** *Dbl.*

This genus contains the smallest forms of Pierids and is confined to tropical America, for the statement that one species (*impura* *Voll.*) also occurs on Timor in the Indian Ocean is undoubtedly incorrect. The Leucidias have an extremely weak flight, for they fly so slowly that they can be caught with the hand in the air. The cause of this want of swiftness in flight lies probably (apart from the weakness of the body) in the form of the wings: the forewing is so very much rounded that it can hardly be said to have an apical angle. In structure this genus is more nearly allied with the superficially similar *Pontia* from India and Africa. The antennae are scaled along the whole length and gradually thickened to a small club. The subcostal is four-branched, the first branch arising far before the end of the cell and the second soon after it, the third and fourth branches form a short fork. The upper radial anastomoses to the half with the subcostal, consequently the upper discocellular is wanting. The hindwing has an almost straight costal margin, only very weakly emarginate, the simple precostal is curved proximally and the subcostal and upper radial have a common stalk. It is doubtful whether the forms erected as separate species are really independent or only forms of one or two species.

brephos. **L. brephos** *Hbn.* (= *leucoma* *Bates?*) (24f), occurring from Venezuela to South Brazil (São Paulo), is white with a very slight yellowish tone, sometimes there is a fine blackish line at the anterior part of the forewing. The under surface is white.

pygmaea. **L. pygmaea** *Frittw.* (24f), from Brazil (Rio de Janeiro, São Paulo, etc.), is above and beneath yellowish white with narrow blackish distal margin on the upperside of the forewing.

exigua. **L. exigua** *Frittw.* (24f), from Venezuela and the Brazilian province of Rio de Janeiro (Corcovado and Leopoldina) is larger, yellow, and has a considerably broader black distal margin on the forewing, which extends to the inner angle.

elvina. **L. elvina** *Godt.* (= *impura* *Voll.*) (24f), from Brazil (e. g. São Paulo), has slightly yellowish white upper surface and more strongly yellowish under surface; with rather broad black distal margin of the forewing above. My specimens of this species completely agree with the description and figures of *impura*, said to be indigenous to Timor.

19. Genus: **Terias** *Swains.*

This genus, which in the eastern hemisphere only extends a little beyond the tropics, occurs in America much further north, a few species advancing as far as the southern boundary of Canada. Though the *Terias* are mostly only small species, their richness both in species and individuals makes them quite a feature of the fauna. Their agility varies considerably; whilst the species with the apex of the forewing pointed (e. g. *gundlachia*) are good fliers, the round-winged species (e. g. *albula*) scarcely surpass *Leucidia*. With this genus begins the series of those Pierids which E. SCHATZ includes under the general name of "Dryads"; these are Pierids with the antennae short, strong, mostly without clubs, only gradually thickened towards the end and but rarely having a distinctly formed club. The species of *Terias* are mostly small, only exceptionally medium-sized, yellow or orange-coloured butterflies. The head is retracted; the eyes are naked and very little prominent, the palpi moderately long and laterally compressed, with large basal joint and small pointed terminal joint. The antennae are delicate, with gradually thickened, more or less distinct club. The subcostal is four-branched, with two branches before the end of the cell, the upper radial is partly coincident with the subcostal, consequently the upper discocellular is wanting. The hindwing is rounded or bears a short tail. On the position of the upper radial of the hindwing BUTLER has based the genera *Sphaenogona* (with *ectrica* *Dbl.* as type) and *Pyrisitia* (with *proterpia* *F.* as type). The origin of this vein is however rather variable: it either arises from the cell or at the origin of the subcostal or it has a common stalk with the latter. But as all sorts of transitions occur between these positions, the position of the upper radial is of no use as a generic character. — The larvae are slender, with short, soft hairs and mostly green. The pupae are somewhat curved, weakly compressed laterally, keeled on the dorsum, without lateral spines and narrowed to a point anteriorly. — The species of *Terias* prefer open situations with low shrubs and moist places, on which they often appear in large numbers, sometimes they congregate in great crowds, which often traverse long distances, even over the sea. They probably occur without exception in at least two generations, which are sometimes very different superficially, but the identity of the seasonal forms has only been proved in very few exotic species. Doubtless they have likewise developed local forms, but concerning this also very little is known with certainty. — A large number of *Terias*-species have been erected which very probably might be united with those dealt with below. In many cases mere individuals, and often also scarcely tenable local forms have been described as separate species. We cannot here go into the classification of all these unimportant forms, that would rather be a task for a monographic work on the genus. For the large African Region CHR. AURIVILLIUS only accepts eight species (including two doubtful ones). As in the following pages 43 species in 86 forms are dealt with, no principal form at any rate will be left unnoticed.

T. gundlachia *Poey* (24a), from Cuba, Mexico, Texas and Arizona, has the forewing rather sharply pointed and the hindwing prolonged into a tail. Upper surface orange-yellow with sharp, broad costal margin and narrower and less sharp distal margin on the forewing. Under surface paler orange-yellow, on the hindwing with brownish spots and reddish yellow dusting.

T. longicauda *Bates* (24a), from California, has the hindwing more pointed. The upper surface is lighter orange-yellow and the black margin of the forewing is essentially different in form from that of *gundlachia*. The ground-colour of the under surface is somewhat lighter, but the marking does not differ from that of *gundlachia*.

T. proterpia *F.* (24a), from the Antilles and the north of South America (Mexico to Venezuela), has the hindwing weakly angled and the forewing less pointed than in the preceding species. Upper surface somewhat darker orange-yellow than *gundlachia*, in the ♀ more yellowish and the black apical markings somewhat broader. Under surface of the forewing light orange-yellow, of the hindwing yellow with small and indistinct macular marking.

T. nicippe *Cr.* (24a) occurs from New England to the northern part of Brazil and on the Antilles. Ground-colour of the upper surface quite similar to that of *proterpia*, but *nicippe* is distinguished by the broad dark margins. The ♀ has paler ground-colour, sometimes yellow specimens occur: ab. **flava** *Holl.*; *flava*. The under surface is yellow, slightly sprinkled with brownish, on the hindwing with larger red-brown spots. Little is known of the first stages; the larva lives on *Cassia* and other Leguminosae.

T. mexicana *Bdr.* (= *boisduvaliana* *Fldr.*) (24a), from Mexico, Arizona and Texas, is white above, sulphur-yellow on the anterior part of the hindwing, and has very broad, deeply sinuate black margins. The underside of the forewing is white with yellow margin, that of the hindwing sulphur-yellow with brownish markings in the centre and at the costal margin. — In **bogotana** *Fldr.*, from Colombia, the yellow colouring on the anterior part of the hindwing is wanting.

T. gratiosa *Dbl. & Hor.* (24b), from Venezuela (known to me from Honduras), has the upper surface of the forewing sulphur-yellow, the hindwing white, and at the costal angle a large light orange-yellow spot and broad black-brown margins. The under surface is uniformly yellow with a small black spot at the discocellular and slight, indistinct brownish markings at the distal margin. — **ingrata** *Fldr.* (= *gratiosa* *Reuk.*), from Mexico and Central America, has yellow upperside of the hindwing and still broader dark margins.

T. arbela *Hbn.* (24b), from South Brazil, is above dark sulphur-yellow with rather broad black margin on the forewing and narrower margin on the hindwing; the latter varies somewhat, and is entirely wanting in the ♀, which has also paler ground-colour. Under surface yellow with more or less developed red-brown marginal and central markings. — **gaugamela** *Fldr.*, from Colombia and Mexico, has deeper yellow ground-colour, broader and darker distal margin to the forewing and beneath more, but smaller red-brown spots. — **boliviensis** *Stgr. i. l.*, from Bolivia, has a large light orange-yellow spot at the apex of the hindwing and broader dentate distal margin of the latter; the ♀ is paler and has more markings. — **fabiola** *Fldr.*, from Venezuela, has narrow black margins and the hindwing above is light orange-yellow and less pointed. — **chloë** *Fldr.*, from Colombia, has broader black margin to the forewing, the hindwing sharply pointed but less suffused with orange-yellow. — **damaris** *Fldr.* (= *mexicana* *Bdr.*, *damarina* *Stgr.*), from Mexico and Arizona, has deep yellow forewing and light orange-yellow hindwing, with sharply defined black distal margin on the hindwing. Under surface of the hindwing straw-yellow with large and small brownish spots. — **pomponia** *Hopff.*, from Peru, is large, brilliant yellow, with strongly dentate black distal margin on the forewing and very narrow distal margin on the hindwing. — **salome** *Fldr.*, from Ecuador, is very similar to *pomponia*, but smaller, and with the hindwing more strongly suffused with orange-yellow. — **limoneus** *Fldr.*, from Venezuela, is differentiated by longer wings, more acutely angled hindwing, lighter colour on the upperside, broader, more deeply incised distal margin of the forewing and narrower, shorter bordering of the hindwing. — **theodes** *Fldr.*, from Venezuela, is probably only the ♀ of *constantia*. — Also **theona** *Fldr.*, described from a ♀, appears to be only a somewhat aberrant female specimen.

T. ectriva *Bth.* Above very similar to *salome*, but the wings longer; forewing with broader dark brown distal margin, its irregularities less pronounced, angle of the hindwing less produced. Under surface similar to that of *constantia*. Ecuador (Archidona). — Is the type of BUTLER's genus *Sphaenogona*. Only known to me from the description.

T. sybaris *Hopff.*, from Peru (Chanchamayo), is very large, in the female sulphur-yellow, with broad black distal margin on the forewing, which has proximally four excisions. Hindwing angled, at the costal margin whitish, at the apex spotted with black. Forewing beneath with a black stripe at the costal margin, apex reddish. Hindwing marbled with red-brown, at the apex a large red-brown patch of scales and extending from the cell a reddish stripe.

T. xanthochlora *Koll.* (24b), from Colombia and Chiriqui, has the hindwing only feebly angled. Upper surface sulphur-yellow with black-brown distal margin on the forewing, on the hindwing in many

cases a black distal-marginal line. ♀ much paler. Under surface uniformly yellow with slight brownish markings on the hindwing. — **constantia** *Fldr.*, from Venezuela, is paler yellow in both sexes and has somewhat reduced black distal margin to the forewing. The under surface of the hindwing has larger and more reddish spots and the apex of the forewing margined with dark rose-red.

graduata. **T. graduata** *Btlr.* Forewing above saffron-yellow, base blackish, distal margin rather broadly and irregularly black, more than in *constantia*, but the irregularities less pronounced; hindwing on the abdominal half white, apical half saffron-yellow, at the apex gold-yellow: distal margin with distinct black border. Peru. — Only known to me from the description.

westwoodi **T. westwoodi** *Bdr.* (24b), from Mexico, Costa Rica, Texas and Arizona, is above lemon-yellow, with orange-yellow tinge at the distal margin of the hindwing, or else entirely orange-yellow. The dark brown, dentate margin of the forewing is moderately broad, the border of the hindwing very narrow or only indicated. The under surface is yellow with slight orange-yellow tinge at the distal margin and two black dots at the discocellular of the hindwing; sometimes the hindwing shows slight, indistinct orange-yellow markings. — **citrina** *Poey.*, from Cuba, is a small form with strongly orange-yellow colour at the distal margin of the hindwing.

reticulata. **T. reticulata** *Btlr.* (24b), from Peru, is a conspicuous species, one of the largest of the genus. The upper surface is canary-yellow with black-brown apex to the forewing and small black dots at the distal margin of the hindwing at the extremities of the veins. The under surface of the forewing is somewhat paler than the upper, at the costal and distal margins somewhat darker, and with a black spot on the discocellular. The hindwing has dark yellow ground-colour and thick red-brown reticulate marking, also some large spots of the same colour. — **marmorata** *Pouj.*, from Ecuador, has beneath less distinct reticulate markings.

doris. **T. doris** *Stgr. i. l.* (24b), from Bolivia, is perhaps only a gigantic form of the following species. It is vivid yellow above with broad black-brown apical markings. The under surface is likewise vivid yellow, with red apical margin on the forewing and some large red-brown spots on the hindwing.

deva. **T. deva** *Dbl.* (24c), from South Brazil, Uruguay and Argentina, is above paler yellow than the preceding species and has narrower apical marking. The less vivid yellow upper surface has on the hindwing much more red-brown macular marking, — **chilensis** *Blanch.*, from Chile, is smaller than *deva* and the apical spot is straight on the proximal side. It flies in two broods: in November and again February to April. The larva lives on Cassia. — **hahneli** *Stgr.*, from the Upper Amazon, is somewhat larger than *deva* and the black marginal marking of the forewing extends almost to the inner angle.

leuce. **T. leuce** *Bdr.* (24c), from South Brazil and Uruguay, differs from *deva* by the narrower but longer apical and distal-marginal marking of the forewing and the fuller yellow ground-colour. The under surface has no red-brown markings on the hindwing, but sometimes slight blackish ones.

dina. **T. dina** *Bdr.* Upper surface beautiful chrome-yellow, orange at the margin of the hindwing. The forewing has a straight black distal margin, which extends to the inner angle and the costal margin. The hindwing has the black distal margin before the fringes more than usually narrow. Under surface of the forewing of a beautiful yellow with a small black median spot, under surface of the hindwing uniformly yellow with a blackish dot near the base, two small blackish median spots, then an oblique row of irregular brownish spots of scales. ♀ somewhat larger, with broader margin. Cuba, common. — **athalia** *Fldr.*, from Colombia, is larger, costal margin of the hindwing more convex.

calceolaria. **T. calceolaria** *Btlr. & Druce.* ♂ above deeper yellow than *dina*, black distal margin almost obsolete. in the ♀ the black apical area almost as in *deva*, triangular, hindwing with a golden yellow apical spot. Honduras.

hecabeoides. **T. hecabeoides** *Mén.* (24c), from Haiti, is so like the extraordinarily variable Indian *hecabe* *L.* that according to MÉNÉTRIE's figure scarcely any distinguishing characters can be found. Upper surface yellow with broad, deeply sinuate distal margin of the forewing and narrow black margin of the hindwing. Under surface yellow with blackish markings.

aesiope. **T. aesiope** *Mén.* (24) has the forewing marked quite similarly to that of the preceding species, but the hindwing instead of the black distal margin has only black dots at the extremities of the veins. The yellow under surface shows irregular red-brown spots. — Haiti.

jaegeri. **T. jaegeri** *Mén.* (24c), from Haiti, is very similar to the Indian and Japanese *laeta* *Bdr.* Upper surface yellow with broad black apical and distal-marginal border, sharply cut off at the first median, under surface grey with darker markings, proximal part of the forewing yellow.

thymetus. **T. thymetus** *F.* (= *perimede* *Prittw.*) (24c, d), from South Brazil (also recorded from Haiti), is above very similar to *leuce*, only somewhat lighter yellow, and has at the distal margin of the hindwing brownish spots, but is sharply distinguished by the style of marking of the underside. This is yellow with slight blackish markings in the middle of the hindwing and a large brownish spot at the apex of the forewing and at the distal margin of the hindwing.

T. stygma Bdr. (24d). Size and shape of *brigitta*. Upper surface lemon-yellow, the forewing with a broad triangular black spot, which is somewhat produced at the costal margin and reaches to the inner angle. Under surface of the forewing yellow, with the band as above, but light rust-brown and slightly reddish. Under surface of the hindwing ochre-yellow, with two brown dots at the anterior margin of the cell, followed by a row of brown, interrupted zigzag markings, a large rust-brown spot at the outer angle as in *lisa*, but larger. Peru. — **stygmula** Bdr., from Cuba, is very similar, but has smaller spots on the underside. — **nisella** Fldr., from South Brazil (Rio), is based on a single female specimen whose principal difference appears to be the sulphur-yellow colouring of the upper surface. Only known to me from the description.

T. neda Godt. (24d), from Guiana, Venezuela and Nicaragua, is vivid lemon-yellow with black-brown apical area to the forewing; at the distal margin of the hindwing are placed black dots. Under surface yellow with very slight blackish markings on the hindwing. — **tenella** Bdr., from Brazil (Bahia, Santa Catharina, São Paulo), is above lighter yellow and has continuous narrow black distal margin on the hindwing. Also the underside is lighter yellow. — **circumcincta** Bates, from the Amazons, **venustula** Stgr., from Chiriqui, and **nelphe** Fldr., from Mexico, as well as several other forms, differ so little that reliable characteristics cannot be adduced.

T. nise Cr. (24d), from Surinam and Dominica, is also very similar to *neda*, but has narrower black distal margin on both wings and extraordinarily light hindwing. The under surface is lighter yellow, the markings not different.

T. venusta Bdr. Similar to *nise*, but smaller, the margin of the forewing proximally less dentate, border of the hindwing reduced to some black marginal dots. Under surface light yellowish on both wings and in both sexes, in the middle of the hindwing one or two small blackish dots as in *nise* and *tenella*, and a row of distinct, oblique brownish spots. Jamaica, Colombia.

T. musa F. (= *gentilis* Bdr.). The same size as *venusta*, upper surface white, forewing with a broad black marginal band, slightly sinuate proximally, base dusted with grey. Hindwing with beautiful lemon-yellow margin, separated from the fringes, the latter white with small black spots. Under surface whitish, slightly yellow distally, base of the forewing lemon-yellow, in the middle of the hindwing two very small black dots. South America.

T. limbia Fldr. (24d), from Venezuela, has vivid canary-yellow forewing and almost white hindwing, somewhat more strongly sulphur-yellow at the distal margin. The black-brown distal border of the forewing is rather broad, proximally dentate, the black distal border of the hindwing narrow. The under surface of the forewing is yellow, without markings, the under surface of the hindwing very light yellow, at the margins somewhat deeper yellow, with two black dots on the discocellulars. The ♀ has the upperside pale sulphur-yellow, no dark distal margin to the hindwing, the underside yellower, with blackish macular marking on the hindwing.

T. lisa Bdr. & Lec. (= *smilax* Godt.) (24d) occurs from New England to Honduras and has also been found on the Antilles and Bermudas. The upper surface is vivid yellow with rather broad black-brown margins and a black dot at the discocellular of the forewing. The under surface is somewhat lighter yellow with reddish distal margin, a large reddish spot at the apex of the hindwing, two small black dots on the discocellulars of the hindwing, a similar one on those of the forewing and indistinct blackish spots on the hindwing. The ♀ is paler yellow and has broader dark margins, which on the posterior part of the hindwing are broken up into spots, the under surface is darker yellow and somewhat more marked than in the ♂. Although this species is very common in places (cnf. the note on migration in the Introduction) the earlier stages are still very insufficiently known. Larva green with two whitish stripes at each side, head yellowish. Pupa dark green, slender, breast prominent. The larva lives on Cassia and clover. — **euterpe** Men., from Nicaragua, has broader black distal margin on both wings.

T. delia Cr. (= *demoditas* Hbn., *daira* Godt.) (24d), from the Gulf States of North America, is above yellow with broad black apical marking and a broad black inner-marginal stripe on the forewing, as well as a large black spot at the apex of the hindwing. The under surface is sand-brown with the exception of the yellow proximal part of the forewing, the hindwing has slight dark macular markings. — **lydia** Fldr., from Venezuela, has shorter, broader wings, the apex of the forewing more obtuse and the distal margin less arched, broader hindmargin, proximally more deeply convex, and considerably narrower proximal band on the forewing, the distal margin of the hindwing almost twice as broad.

T. jucunda Bdr. & Lec. (= *ebriola* Pogy, *albina* Pogy) (24e), from the Gulf States of North America, differs from *delia* in the longer marginal band of the hindwing and the lighter, grey to white under surface, almost without markings. — **lemnica** Fldr., from Bahia, is distinguished not only by the broader border of the forewing, the larger apical spot of the hindwing which is joined to the other marginal spots, and the quite different under surface, which is glossy white, sparsely dusted with red-brown, but also in the greater length of both wings.

- persistens*. **T. persistens** *Blth. & Druce*. Allied to *delia* and *eugenia*, upper surface yellow, costal margin and base broadly ash-grey, apex and distal margin broadly black-brown, a black-brown inner-marginal band distally bordered with gold-yellow; hindwing with black-brown apical spot, under surface as in *delia*. Honduras.
- hyona*. **T. hyona** *Mén.* (24e), from San Domingo, is beautiful orange-yellow in the male above with black margin, which is moderately broad on the forewing, narrow and sharply defined proximally on the hindwing. The ♀ has much paler upper surface. Beneath both sexes are almost alike; forewing in the middle orange-yellow, at the distal margin and in the basal part yellow, with a subapical row of small black spots, fringes reddish; hindwing yellow with some blackish dots near the base, some small red-brown spots at the apex, to which extends a narrow band of red-brown spots running towards the inner margin, and small, very indistinct red-brown submarginal spots.
- pyro*. **T. pyro** *Godt.* Shape and size as *hyona*. Upperside of the forewing vivid orange-yellow, slightly blackish at the base. Forewing with a black margin, proximally indented. Hindwing at the distal margin slightly dusted with blackish. Under surface of the forewing lighter than above, with a black dot in the middle and a dark apical spot. Under surface of the hindwing light yellow, with an orange-yellow central spot, some brownish scales and a very large round rust-brown spot at the apex, and also a row of small black marginal dots. Antilles or South America.
- eleathea*. **T. eleathea** *Cr.*, from Surinam, is not essentially different from **plataea** *Fldr.* (24e), from South Brazil (São Paulo, Santa Catharina, Rio Grande do Sul). The latter has yellow forewing and white hindwing, broad margin on the forewing and narrower one on the hindwing, also a black stripe at the inner margin of the forewing, which is posteriorly edged with orange-yellow. The under surface is rather variable, whitish to grey, the anterior part of the forewing yellow, mostly only with black dots at the discocellular of both wings, not seldom with somewhat darker markings. The ♀ has yellow or yellowish ground-colour on the hindwing above, the black and orange-yellow stripe at the inner margin of the forewing is absent. The under surface is mostly darker and more abundantly marked. This species also shows a number of local forms, which have almost all been described as separate species, thus **vitellina** *Fldr.*, from Venezuela and Honduras, with white-scaled inner-marginal stripe and the under surface entirely without markings; — *eugenia*. **eugenia** *Wall.* (= *rhodia* *Fldr.*), from Venezuela, Colombia and St. Josef, with very dark yellow forewing and sharp and broader orange-yellow inner-marginal stripe; — *cubana*. **cubana** *H.-Schäff.*, from Cuba, with broad black distal margin on the hindwing; — *palmyra*. **palmyra** *Pocoy* (= *lydia* *Fldr.*), from Cuba and the Gulf States, in which the black distal margin of the hindwing is reduced to a spot at the apex; — *phoenicia*. **phoenicia** *Fldr.*, from Colombia and Ecuador, has orange-yellow inner-marginal stripe reaching to the base and rather broad distal margin on the hindwing; *elathides*. **elathides** *Stgr.*, from Venezuela, is larger, and has no orange-yellow inner-marginal stripe; the ♀ is darker beneath. — All these forms can scarcely be separated from one another. Considerably different on the other hand are: *sidonia*. **sidonia** *Fldr.*, from Mexico, in which the black inner-marginal stripe is merged together with the black distal margin and the hindwing has very broad black distal margin; — *ella*. **ella** *form. nov.*, from Ecuador, has no orange-yellow inner-marginal stripe, also the black inner-marginal stripe is merged together with the black distal margin and the hindwing has a broad black distal margin which is sharply defined proximally. — *tegea*. **tegea** *Fldr.*, from Colombia, is larger than *vitellina*, with broader wings, and may be recognised by the greater width of the inner-marginal band of the forewing and the distal-marginal one of the hindwing. — *medutina*. **medutina** *Fldr.*, from Venezuela, has narrower wings, the forewing is more elongated and the hindwing shorter.
- priddyi*. **T. priddyi** *Lathy*, from Haiti, differs from *eleathea* in the yellow upper surface of the hindwing, the shorter dark distal-marginal band of the forewing and the absence of the yellow stripe at the inner margin of the forewing and of the dark distal margin of the hindwing, which is only represented by marginal spots.
- mycale*. **T. mycale** *Fldr.* (24e), from Brazil (Bahia, São Paulo), is very similar to *eleathea*. The dark distal margin of the forewing is broader and confluent with the hindmarginal stripe, also the distal margin of the hindwing is much broader. The under surface of the forewing is less yellow, otherwise not different.
- smilacina*. **T. smilacina** *Fldr.*, from Colombia, was described from a ♀. Upperside pale sulphur-yellow with black-brown distal margin, hindwing with black marginal dots. Underside glossy white, at the discocellular a crescent-shaped spot, a subapical red-brown macular band, a black dot at the costal margin near the apex of the forewing; hindwing with spots at the discocellular, a subapical macular band and black marginal dots.
- albula*. **T. albula** *Cr.*, from Surinam, probably scarcely differs essentially from **marginella** *Fldr.* (24e), from Venezuela. This is white above and has moderately broad black margin on both wings. The under surface is white, entirely without markings. — *sinoë*. **sinoë** *Godt.* (= *cassiae* *Sepp.*, nise *Hbn.*), from South Brazil, has more or less broad distal margin on the forewing and entirely white wings. The under surface is white or sometimes yellowish. The ♀ has narrower and shorter distal margin on the forewing and some dark markings on the hindwing beneath.
- deflorata*. **T. deflorata** *Koll.*, from Colombia, is similar to *albula*. Upper surface white, forewing with a yellowish tinge, apex black, irregularly defined proximally, at the distal margin of the hindwing three to four blackish

streaks. Under surface of the forewing at the base lemon-yellow, at the apex slightly dusted with red-brownish. The hindwing has a scarcely perceptible yellow tinge and before the distal margin a stripe composed of brownish atoms, which, however, is not at all conspicuous. Only known to me from the description.

T. agave Cr. (= *jodutta* Hbn., *phiale* Godt., *mana* Bdr.) (24f), from Surinam, has the forewing much *agave*, rounded and very narrow. Upper surface white with black markings at the apex and blackish dusting at the base of the forewing. Under surface white on the proximal part of both wings, otherwise yellow, with a black dot at the discocellular of the hindwing and slight blackish markings on the hindwing.

T. messalina F. Shape and size as *rahel*. Upper surface white, distal margin of the forewing and *messalina* a marginal spot on the hindwing black. Under surface yellow, with a brown spot at the apex of the forewing, a marginal spot and black scales on the hindwing. — Jamaica.

T. gnathene Bdr. Shape and size of *albula*. Upper surface white with a very slight greenish tinge, *gnathene*, black distal margin, which is rather strongly widened at the apex and terminates in the anal angle of the hindwing. Under surface of the forewing white, at the base and apex lemon-yellow, a longitudinal row of reddish spots at the inner margin, a blackish spot at the apex, a violet subapical spot. Under surface of the hindwing yellowish, with a small, light rust-brown lunular spot at the margin of the cell, a deep rust-brown and a deep red-brown spot (less sharply defined) at its posterior margin. — Yucatan and Cuba.

T. phiale Cr. (24f), from the eastern part of tropical South America, is white with black margin to *phiale*, the forewing and narrow black distal margin to the hindwing, before which is placed a light yellow band. The under surface is light yellow and almost without markings except for two black dots at the discocellular of the hindwing. — **columbia** Fldr. (= *phialina* Stgr. i. l.), from Colombia and Bolivia, has somewhat *columbia*, narrower distal margin on the forewing, proximally almost rectilinear, and the black distal margin of the hindwing less developed. — Whether **paula** *form. nov.*, from São Paulo, is a separate species or a form *paula*, (perhaps a seasonal form) of *phiale*, I cannot say from the two male specimens before me. The black distal margin of the forewing only reaches to the first median vein, that of the hindwing is broken up into small dots and the under surface of the hindwing is dark yellow. Has two conspicuous black dots at the discocellular and copious grey-brown macular marking. The apex of the forewing is likewise dark yellow.

20. Genus: **Catopsilia** Hbn.

This genus has about the same range as *Terias*. In the mountains no species appears to ascend beyond 2000 m. The species which belong here are mostly of considerable size and fine, sometimes conspicuous, colouring. The powerfully built body and the shape of the wings make the insects particularly adapted for swift flight. They use this capacity for distant migrations, in which extraordinarily large crowds sometimes participate, their passage often lasting for hours. Apart from this the common species occur in large swarms, enliven the damp banks of the rivers and contribute materially to the character of the fauna of their district. The *Catopsilia*-♂♂ are not only immoderate water-drinkers, but are also attracted by human sweat and urine, as Dr. FR. OHAUS proved during his travels in South America. He also observed swarms of *Catopsilia* on the stranded bodies of fishes. The ♀♀ mostly remain in the woods and visit flowers, on which of course ♂♂ are also to be met with when they seek the company of the ♀♀. — The rather large head has prominent naked eyes, the palpi only project a little beyond the head, the antennae are short and moderately soft, without distinct club, with truncate or indented tip. Subcostal four-branched, the first branch beyond half way between the base and the discocellular, the second branch arising shortly before the discocellular, the fourth branch running into the distal margin, the upper radial coincident with the subcostal to $\frac{1}{4}$, the middle discocellular shorter than the proximally curved lower one. Hindwing rounded, in some species prolonged into a tail at the submedian. The precostal is a mere knob. The larvae have the usual Pierid shape and granulated skin, are grey or green and have a light lateral longitudinal stripe; they live on Cassia. The pupae are rather variously shaped; as far as they are known they will be described under the respective species. — Contrary to the usual custom I refer (with A. G. BUTLER) *menippe* to the following genus, from which it only differs in neuration by an unimportant deviation, whilst in its other characters *menippe* agrees with *Gonepteryx*. — This genus contains some species which in beauty must be considered as the climax of development among the Pierids.

C. eubule L. (= *marcellina* Cr.) (25a) occurs from New England to Argentina, also on the Antilles. *eubule*. Upper surface in the ♂ lemon-yellow, lighter at the distal margins, and with black marginal line. Beneath somewhat paler yellow with a silvery "eight", edged with red-brown, on each wing at the discocellular, a black marginal line and irregular dark markings on both wings. The ♀ is somewhat paler yellow, has a row of marginal spots on both wings, a large black median spot on the forewing and sometimes more or less dark brown marking. The under surface is deeper yellow and more marked than in the ♂. — **sennae** L. *sennae*. (= *yamana* Reak.) is beneath deeper yellow and more abundantly marked, the ♀ being pale orange-yellow

drya, above. — ***drya* F.** (= *amphitrite* Blanch.), from Peru, Chile, Cuba and Haiti, is a small, weakly marked form. — *ebule* flies in June and again from September to October, *drya* in November to December and from March to April. The ♂ has as scent-organ on the upper surface of the hindwing near the costal margin a spot of scales, over which the soft, widened inner margin of the forewing is stretched out to stir up the scent, scattering it with a pencil (retractile into a fold in the skin).

cipris. ***C. cipris* F.** (= *bracteolata* Bth.) (25c), from Brazil and Peru, has the hindwing prolonged into a tail in both sexes. The ♂ is very light orange-yellow, the broad distal margin of the forewing, which is thickly covered with chalky scent-scales, and the considerably narrower distal margin of the hindwing lighter; the upper surface has no markings except small marginal spots on the forewing. The under surface is darker yellow with a silvery eight on both wings and more or less dark markings. The underside is very variable. The ♀ is lemon-yellow and has a large black median spot on the forewing, the under surface

neocypris. is more greenish than in the ♂. — ***neocypris* Hbn.**, from the same localities, is in both sexes suffused with

irrigata. orange-yellow above at the margins and is also darker beneath. Probably a seasonal form. — ***irrigata* Bth.**,

virgo. from Brazil, is an aberrant female form, more strongly marked above and beneath. — ***virgo* Bth.**, from Central America, is more strongly marked, has black marginal spots in both sexes, also in the ♂ a large black median spot on the forewing, and the ♀ is white above with narrow red distal margin.

rudina. ***C. rudina* Fldr.** (25b), from Venezuela, Colombia, Ecuador and Peru, occurs apparently only at elevations of 1000 to 2000 m. The forewing in the ♂ is orange-yellow except for the distal margin of lemon-yellow scent-scales which occupies almost half the wing, the hindwing lemon-yellow with broad, light orange-yellow distal margin, at the distal margin of both wings are placed small black-brown spots. The under surface is yellow with a silvery double spot at the discocellular of each wing and more or less black-brown markings. The ♀ is very variable, from bright yellow to almost white ground-colour, stronger distal-marginal markings and a large black-brown median spot on the forewing and also large red distal-marginal spots or broad red distal margin on the hindwing. The under surface has paler ground-colour and more red-brown markings, often united into large spots. — ***intermedia* Bth.** is the Central American form: the orange-yellow colour of the forewing of the ♂ is almost entirely absent and the ♀ has whitish ground-colour.

philea. ***C. philea* L.** (= *argante* Hbn., *corday* Hbn., *aricie* Cr., *melanippe* Cr., *lollia* et *aricia* Godt.) (25c), distributed from Texas to South Brazil, very common in some places, also observed in Illinois as a migrant, is one of the most beautiful species of this genus. The upper surface in the ♂ is a fine canary-yellow with a large orange-yellow median spot on the forewing and broad orange-yellow distal margin on the hindwing. The under surface is pale yellow with silvery median double spot and brownish markings. The secondary male characters consist of a spot of scent-scales on the upperside of the hindwing, to which corresponds a pencil found on the underside of the inner margin of the forewing, and a moderately broad band of scent-scales on the upperside of both wings, only slightly contrasting in colour. The ♀ is less brilliant yellow, the large orange-yellow median spot of the forewing is absent, but it has a large black-brown median spot and marginal, submarginal and costal macular markings on the forewing, as well as dark marginal spots on the hindwing. The ground-colour of the under surface is redder than in the ♂. — ***thalestris* Ill.** (= *huebneri* Fruhst.), from the Antilles, also reported from Chile (?), has in the ♂ a larger orange-yellow median spot, also a large black-brown spot at the discocellular of the forewing. The under surface is much more marked and shows at the distal margin of the hindwing large red-brown spots. The ♀ has much more red above and beneath and is much more strongly marked, especially on the under surface, which shows on the hindwing a broad red-brown distal margin and a large median spot of the same colour. — Pupa regularly canoe-shaped, dorsum strongly incurved, head prolonged into a long point.

avellaneda. ***C. avellaneda* H.-Sch.** (25d), from Cuba, is unquestionably the most beautiful species of the genus. In the ♂ the ground-colour of the upper surface of the forewing is canary-yellow, a broad margin ochre-yellow, the distal margin narrowly red, the central and posterior part of the wing is gorgeous carmine, at the discocellular is placed a red spot with black centre. The hindwing is less fiery carmine, in the cell yellowish red, the long spot of scent-scales placed at the subcostal is white, the distal margin rather broadly ochre-yellow. The under surface is red-yellow with white double spot in the centre of each wing and continuous black-brown submarginal spots. The ♀ has the upperside of the forewing canary-yellow with red distal margin and marginal and submarginal red-brown spots as well as a large red-brown spot at the discocellular, the basal part of the wing is sprinkled with red. The hindwing is yellowish red, at the costal margin light pink, with marginal and submarginal red-brown spots. The under surface has dark yellow ground-colour, the broad distal-marginal band is blue-red with red scales, the margin itself narrowly yellow; the broad blue-red distal margin is proximally bordered by black crescent-shaped spots and at these as well as at the base there is dark red colouring, at the discocellular of each wing are placed white, black-edged spots (five on the forewing, two on the hindwing). — ***solstitia* Bth.** (25d), said to be from Chile, but probably an aberrant form of *avellaneda* and therefore also indigenous to Cuba, is differentiated from the latter by a narrower and proximally rectilinear ochre-yellow distal margin on the upper surface and by the

carmine spots of the forewing being reduced proximally. On the supposition that the locality "Chile" is correct, BUTLER regards *solstitia* as a separate species on account of a few small differences in the hairs of the body.

C. editha Btlr. (26a), from Haiti, is in the ♂ lemon-yellow without markings, the under surface *editha*. is dark yellow with two white spots, surrounded with black-brown, at the discocellular of the hindwing and also small black-brown macular markings. The ♀ has the upper surface reddish yellow, especially on the hindwing, with a large black median spot and marginal and submarginal black-brown spots on the forewing, and also small black-brown marginal spots on the hindwing, the under surface is scarcely different from that of the ♂. — **fornax** Btlr., from Chile (?), I regard as a ♀-form of *editha*. The upper surface has much more *fornax*. red, particularly a broad dark red marginal band on the hindwing, and the under surface, the proximal half of which is yellow, has many more red markings.

C. argante F. (= larra F., enidia Godt.) (25a) is distributed from the North American Gulf States *argante*. to Paraguay and very common. The ♂ is above pale orange-yellow and without markings except the black marginal spots. The rather narrow margin of scent-scales is little conspicuous, this species like several others has a further scent-organ, consisting of a spot of scales on the upperside of the hindwing, which is associated with a pencil on the underside of the inner margin of the forewing for scattering the scent. The under surface is yellow with numerous brownish markings and sometimes white spots at the discocellular. The ♀ has similar ground-colour on the upperside, but more black marginal markings, also a black median spot on the forewing. The under surface is more strongly marked with dark. The pupa has extraordinarily swollen breast, the head is produced into a point, on the thorax is an acutely angled elevation and along the sides runs a ridge-like protuberance. — **hersilia** Cr. is a more strongly marked form. The ♂ has in- *hersilia*. stead of the red marginal spots of the forewing a narrow black marginal band and the ♀ has more and larger black spots. The under surface is also more marked. — **rorata** Btlr., from Haiti, is a large form. *rorata*. The ♂ has unusually bright yellow marginal band and the ♀ with almost white ground-colour has much black macular marking as well as red striation on the upper surface. Also the under surface shows in the ♀ red-brown spots united into bands. — **minuscula** Btlr., said to be from Havanna, but which I have from *minuscula*. Rio Grande do Sul, is a dwarf form of *argante*, scarcely half as large. — **agarithe** Bdr., from Texas *agarithe*. (*argante*?), Panama, Venezuela, Haiti and Brazil, would have to be regarded as a separate species according to BUTLER's figure of the pupa. But BUTLER is in error; he has figured the pupa of *philea*, as I have positive proof. The butterfly is similar to *argante* in the ♂, but has a strongly marked light distal margin of unequal width on the hindwing and the posterior part of the wing is yellow. The under surface shows besides other markings on the forewing a red-brown macular band running from the apex towards the inner margin. The ♀ is above reddish yellow, with a large orange-yellow patch at the discocellular of the forewing, in which the black median spot is placed. The under surface is similar to that of the ♂, but more strongly marked. — **floridensis** Neumögen i. l., from Florida, is in the male entirely without markings above, *floridensis*. the margin little lighter than the proximal part of the wing, beneath on the contrary rather strongly marked, the band of red-brown spots running from the apex of the forewing towards the inner margin being particularly striking. The ♀ is above almost as uniform as the ♂, only somewhat lighter orange-yellow colour, and has no markings at all except slight brownish ones at and near the apex of the forewing and the very indistinct small dark median spot on this wing.

C. trite L. (25b), from tropical America, has yellow upper surface with black distal margin on the *trite*. forewing, which in the ♀ is somewhat broader. The margin of scent-scales is very narrow and inconspicuous, the scent-apparatus on the proximal part of the wing is as in the preceding species. The under surface is greenish yellow, lighter at the margin, and has besides slight submarginal markings on the hindwing an oblique blackish band, peculiar to this species, on both wings. The ♀ has lighter ground-colour beneath.

C. statira Cr. (26c) occurs very commonly in the whole of South America. The distal half of the *statira*. wing is covered with scent-scales and is strikingly lighter than the lemon-yellow proximal half. The upper-side has no markings except a narrow black distal margin. The ♀ has broader black distal margin and also a black median spot on the forewing. The under surface has slight dark markings. — **wallacei** Fldr., from *wallacei*. Rio Negro and Peru, is uniformly yellow above and has the distal half of the wing very light beneath.

C. boisduvalii Fldr. (26c), from Colombia and Central America, is cream-coloured, more strongly *boisduvalii*. yellow on the basal part, with narrow black apical margin. The under surface is light yellow, entirely without markings.

C. jada Btlr. (26b), from Guatemala, has in the ♂ the proximal half of the wings ochre-yellow, the *jada*. distal half lemon-yellow, no markings, the under surface is reddish yellow, lighter on the distal half. The ♀ is above yellow with black dentate distal margin and round black median spot as well as a subapical row of four small ochre-yellow spots. The under surface is bluish white with reddish marginal and medial markings. — **jaresia** Btlr., from Peru, is only known in the female. Like the *argante*-♀ it is orange-yellow *jaresia*.

with black median spot, but has on both wings continuous black marginal markings. The under surface is somewhat more reddish yellow than in *jada*, the markings almost the same.

godartiana. **C. godartiana** *Srains.* (= *orbis* *Bdv.*) (26b), from Haiti and Porto Rico, has half the upper surface of the forewing white and the other half yellow; the white distal half has a narrow yellow margin. The proximal part of the hindwing is reddish yellow, shading into greenish distally, a broad margin is white. The under surface of the forewing is in the anterior part yellowish with dark submarginal markings, in the posterior part whitish. The proximal part of the hindwing beneath is reddish white, the margins are greenish, the distal margin broadly so; there are no markings except two white spots at the discocellular and a few small blackish submarginal markings. The ♀ has dingy reddish yellow upper surface with continuous black marginal markings, large black median spot and a small hook-shaped submarginal spot on the forewing. The hindwing has larger disconnected black marginal spots. The under surface is reddish yellow in the proximal part, in the distal part almost white with reddish marginal markings, blackish submarginal markings, large reddish median spot on the forewing and two white, brownish-edged median spots on the hindwing. — *neleis*. **neleis** *Bdv.*, from Cuba, Mexico and Guatemala, has the distal part of the upper surface less strikingly white and there are no markings on the under surface, which is yellowish on the proximal half and whitish on the distal half. The ♀ is above much lighter, more yellowish and with less black markings, the ground-colour of the under surface lighter. — *butleri*. **butleri** *Scudd.*, from Mexico (Tehuantepec), is apparently only an aberrant female with light chamois-coloured upper surface and the markings somewhat more brown-black. — *hartonia*. **hartonia** *Bth.*, from Jamaica, is in the ♂ above very similar to *godartiana*, only the greenish tinge is wanting; the under surface is quite similar to that of *neleis*, but has somewhat dark markings. The ♀ is similar to the *neleis*-♀, but has no continuous marginal markings on the forewing above. On the under surface the forewing is more yellowish, the hindwing more reddish, also less marked.

orbis. **C. orbis** *Poc.* (26a) from Haiti and Cuba, is very peculiarly marked in the ♂ above. The orange-yellow colouring, which is spread over the whole upper surface in the ♀, is only present in the ♂ in a large circular spot near the base. The distal half of the forewing is white, the rest of the wing yellow. The hindwing is yellow, with broad white distal margin. The underside is reddish yellow with a white, reddish bordered median spot on each wing, reddish marginal line and red-brown submarginal markings. The ♀ is entirely orange-yellow above and has black marginal and submarginal spots and also a square black median spot. The under surface is more strongly marked with red-brown than in the ♂. The pupa is comparatively slender, without anything striking in its form, the head-part produced into a short point. Larva on *Poinciana pulcherrima*, green with yellow venter, all the incisions light greenish yellow. Pupa green, canoe-shaped, extremities pink and veins yellow (BOISDUVAL).

21. Genus: **Gonepteryx** *Leach.*

The few species of this genus would be better united under the generic name of *Anyptia* *Srains.*, since they not only differ from *Gonepteryx*-species of the Old World by their gigantic size, but also possess structural characters which well separate them from *Gonepteryx*. The fourth subcostal vein does not run into the costal margin, as in true *Gonepteryx*, but into the much more produced apex. According to E. REUTER the American species agree in the structure of the basal joint of the palpi, but differ in this from the true *Gonepteryx*-species. The species which belong here cannot be mistaken on account of their wing-contour, and possess a further common characteristic in that the subcostal of the hindwing appears especially developed on the under surface and is particularly conspicuous by its peculiar colouring. The secondary male characters agree with *Catopsilia*; but are even more developed, the greater part of the wing above being covered with chalky scent-scales, whilst the scent-organ at the costal margin of the hindwing takes the form of a long, broad gland. One species is distributed from Paraguay, the other two have a more restricted range. — Nothing appears to be yet known as to the earlier stages.

menippe. **G. menippe** *Hbn.* (= *leachiana* *Godt.*) (26g) apparently occurs in the whole of tropical America, not even shunning the higher mountains. It surpasses the most conspicuous Indian Pierid, *Hebomoia glaucippe*, both in size and in beauty. The upper surface is light yellow, sometimes somewhat darker, the apical third of the forewing is gorgeous orange-yellow, at the discocellular is placed a large, square brown-red spot, before it sometimes also a smaller, but otherwise similar spot. The black-brown distal margin varies very much in width; in most specimens it is as shown in our figure, not infrequently it is reduced to marginal spots which are only connected by a marginal line, occasionally it is entirely absent: ab. **calypso** *form. nov.* The hindwing has only rarely blackish marginal spots. The ground-colour of the under surface is likewise rather variable, from greenish white to yellow, with more or less sharp, light, somewhat opalescent markings; there are always on both wings an oblong, much interrupted reddish median spot and a more or less complete row of black submarginal dots; the sub-

costal of the hindwing is conspicuous by its colouring. The ♀ differs in the orange-yellow spot being somewhat lighter and has also more blackish spots at the distal margin of the hindwing. Specimens in which the orange-yellow spot is entirely absent are rare: ab. **thetis** *form. nov.* — FRUHSTÖPFER has based the subspecies **metioche** *thetis, metioche.* on 2 specimens from Colombia; it is said to be characterised by darker, deeper and more uniform yellow ground-colour, longer and narrower wings, larger size, larger, lighter and more divided median spots on the under surface.

G. clorinde *Godt.* (= *swainsonia Swains.*, *godarti Perty*, *maerula Hbn.*) (24g) is distributed from Mexico *clorinde.* to Paraguay, extremely variable in size, has the upper surface white with a faint greenish tinge, the large median spot is either orange- or sulphur-yellow, on each wing is a small black median spot margined with red-yellow. The under surface is greenish with white striation and an inconspicuous reddish median spot on each wing. The ♀ differs in having the yellow median spot much less developed and the median spots larger and much more broadly surrounded with red-yellow. — **nivifera** *Fruhst.*, from Central America, is said to be distinguished *nivifera.* by snow-white upper surface, darker, more orange-yellow median spots and yellowish-marbled under surface.

G. maerula *F.* (24g) is distributed from Mexico to South Peru, but appears to be wanting in the east *maerula.* of the district. The upper surface is lemon-yellow and has no markings except the black-brown median spot and perhaps a few black marginal dots. The scent-organ on the hindwing is lighter. The under surface is greenish with light striation and a white, reddish-bordered median spot on each wing; the subcostal of the hindwing is distinctly prominent. The ♀♀ are mostly whitish and have a larger orange-yellow median spot on the hindwing. A canary-yellow ♀-form is more rare: ab. **flava** *form. nov.* — To **lacordairei** *Bdv.* (= *ecclipsis Cr.*) belong *flava, lacordairei, gueneana.* those specimens which have a plain yellow under surface without striation. — **gueneana** *Bdv.* is still less different; specimens with distinct black marginal spots should be referred here.

22. Genus: **Kricogonia** *Reak.*

This genus has its area of distribution from southern North America to Venezuela and also occurs on the Antilles. Apart from the much smaller size and the shape of the wings the only difference from *Gonepteryx* is that the long palpi extend far beyond the head. There is no difference in the neurulation. The early stages are still unknown.

K. lyside *Godt.* occurs from Texas and California to Venezuela. The upper surface is white, the proximal *lyside.* part of the hindwing suffused with yellowish, the basal part of both wings yellow, the under surface slightly yellow except for the almost white posterior part of the forewing, with no markings, only occasionally a black median spot on the hindwing. The ♀ has less yellow at the base and the apex of the forewing is darker. — **terissa** *Luc.* (= *lyside Hbn.*) is an aberration which is distinguished by a small black stripe at the costal margin *terissa.* of the hindwing. — **xanthophila** *form. nov.* (26d), from Guatemala, is an entirely yellow form (only in the fe- *xanthophila.* male?). The underside of the hindwing is light, contrasting with the forewing. — **castalia** *F.* is the form from *castalia.* Jamaica. It has at the base only traces of yellow, and the under surface, especially of the forewing, is even less yellow.

K. fantasia *Btlr.* (26d), from Nicaragua, has in the female greenish white upper surface, at the costal *fantasia.* margin of the forewing a dark sulphur-yellow basal stripe and light brown apical and distal-marginal markings, the hindwing is light sulphur-yellow. The underside of the forewing is glossy sulphur-yellow on the basal half, the rest of the wing is light sulphur-yellow, hindwing as above, in the basal half darker sulphur-yellow. Is probably only another aberration of *lyside*; a quite similar specimen from Cuba is before me.

23. Genus: **Teriocolias** *Röb.*

It is not practicable to allow *atinas* *Hew.* to remain in the genus *Terias* as it is much less closely allied to this than to *Colias*. It differs from the latter in that the fourth subcostal vein does not run into the distal margin but direct into the apex and that the lower discocellular of the forewing is wanting; the lower radial arises direct from the subcostal. A fourth peculiarity of this genus is the clothing of the basal half of the antennae with long, hair-like, moderately appressed scales, so that the antenna when only a little magnified gives the impression of a Heterocerous antenna. Similar structures occur among the Erycinids, and also in the American *Gonepteryx* and *Catopsilia*, but not, so far as I can ascertain, in *Terias*. Biological reasons are also against its near relationship to *Terias*: that is to say, *atinas* flies in the high mountains, where species of *Terias* never occur.

T. atinas *Hew.* (26d), from Bolivia, is above deep sulphur-yellow with a small black spot at the disco- *atinas.* cellulars of the forewing, the basal part of both wings is black, at the distal and costal margin of the forewing near the apex are placed small dark spots or dots. The under surface of the forewing is sulphur-yellow with reddish distal margin and small dark marginal spots as well as two black dots at the discocellulars, the under

surface of the hindwing is yellow, densely dusted with brownish and with red-brown spots at the costal margin and in the middle and two blackish dots at the discocellulars. The ♀ has lighter ground-colour. — *pacis* Stgr. i. l. (26d), from Peru (3300 m), is above somewhat deeper yellow, beneath the reddish border of the forewing is broader and the hindwing is more deeply dusted with red-brown. — *plesseni* subsp. nov., from Chanchamayo (Peru), was captured by Baron G. VON PLESSEN on March 26 1906 on the way from Aroya to La Merced on the eastern slopes of the Andes, where the species was flying together with *Colias euxanthe* over lupine-fields. It is above and beneath sulphur-yellow, has beneath no differently coloured border to the forewing and shows only a little blackish dusting on the sulphur-yellow ground-colour apart from the blackish brown spots of the hindwing.

24. Genus: **Colias** F.

About three-fourths as many species must be referred to the American Region as to the Palaearctic if the conception of species is not applied too critically. But on a more thorough examination scarcely more than twenty American species can be established, hence about half the number which the Palaearctic Region produces. Considering the enormous size of the region this suggests an apparent poverty in species in America, which however is explained when we remember that the species of *Colias* are in great part inhabitants of the mountains, and the American Region properly shows only one mountain range, although an enormous one. The splitting up of Central Asia into a number of independent mountain ranges has apparently been very favourable to the formation of *Colias*-species. This advantage is wanting in the American Region. On the other hand it must further be taken into consideration that the most southern part of America possesses a few species, some of them very conspicuous, for which the eastern hemisphere can offer no equivalent owing to the want of corresponding lands.

The genus *Colias* is unmistakeably characterised by its superficial appearance; whether the species comes from the far north or the extreme south it is immediately recognised as a *Colias*. In neurulation its special characteristic is the entire absence of the precostal, in which the genus agrees only with the superficially very different *Terias*. The butterflies are mostly of medium size, some species are among the larger Lepidoptera. Antenna rather short, with gradually thickened, but distinct club. Apex of the forewing rounded, forewing with four subcostal veins, of which the first arises far before the discocellular; the upper radial arises from the subcostal, hence the upper discocellular is wanting.

The genus has its principal area of distribution in Central Asia, where most of the species have their habitat. It is almost exclusively confined to districts with a temperate climate. In North America, in the mountains of tropical South America and in the plains of the southern part of South America, as already said, a large number occur, in Africa only two species (local forms of Palaearctic species), but in the Indo-Australian Region, except in the Himalayas and the Nilghiri Hills, no species occurs. A few species extend far towards the north (e. g., *C. boothii* to lat. 75°), and in Tierra del Fuego occurs one of the largest and most beautiful species (*imperialis*). A few species occur in two generations, but most in only one. Sexual dimorphism is well developed in most of the species, also dimorphism in the ♀♀, which often occur in a pale and in a bright yellow or orange-coloured form. Their flight is very quick and long-sustained. The ♂♂ of many species possess as secondary sexual character at the costal margin of the hindwing above a more or less sharply defined small disc of thick chalky scales („Mehlfleck“). — Egg cylindrical, feebly ribbed. Larvae long, of almost equal width throughout, with very short hairs; they hibernate, live mostly on clover and allied plants, the species indigenous to the north mostly on *Vaccinium*. Pupa with pointed head and raised, very sharp dorsal side of the thorax; like most Pierid pupae they are placed upright, are hooked at the cremaster into a silken pad and are held upright by a long, loose girdle.

palaeno. **C. palaeno** L. (= *philomene* Hbn., *lapponica* Stgr., *werdandi* H.-Schäff.) (27a). I have before me a ♂ from Canada, from the collection of Herr LEOPOLD HARTMANN of Würzburg (to whom I am indebted for the loan of his North American Pierids). It is above not distinguishable from German specimens (*europome* Esp.), but much more yellow on the under surface; the colouring of the hindwing approximates to that of the ♀♀ of *pelidneides*. *europome*. — At Hudson's Bay and in Alaska occurs **pelidneides** Stgr., which according to STAUDINGER differs from *palaeno* in that the median spot of the hindwing beneath is not white, but reddish as in *pelidne*; *pelidne*, however, commonly varies in this, yet this median spot is always much smaller in that species than in *palaeno*. — Larva sea-green, velvety, with fine black dots, at the sides a bright yellow longitudinal stripe margined with black beneath, below which the white, black-edged spiracles are placed, venter and ventral legs dull green, thoracic legs yellowish, head green; on *Vaccinium uliginosum*. Pupa greenish yellow with strongly convex dorsum. In the Palaearctic Region the butterfly flies from the end of June to the middle of August on marshy ground.

pelidne. **C. pelidne** Bdr. (= *anthyale* Stgr.) (27a), from Labrador and boreal North America, is paler yellow than *palaeno*, and has narrower and less dark distal margin, the under surface is likewise much paler, greenish

on the hindwing, the median spots of the under surface are smaller, as also those of the upper surface, the latter often absent. The ♀ is above yellowish white with only narrow, proximally diffuse dark margin to the forewing. — *labradorensis*. **labradorensis** Scudder can scarcely be distinguished. The ♂ has narrower distal margin, which is almost broken up into spots by small stripes of the ground-colour, and the ♀ has no dark distal margin. ab. **moeschleri** Gr.-*moeschleri*. Grsh. is darker yellow, almost orange-yellow. — In Dr. STAUDINGER'S collection there are specimens which might be treated as hybrids of *pelidne* and *nastes*; upper surface greenish yellow, veins black-brown, the dark margin sharp. This form may be named **standfussi**. — *pelidne* is not a constant form, but on the other hand does not vary very much, so that no positive characteristics can be given for **skinneri** Barnes. — **chippewa** Edw., from the Mackenzie River (British North America), appears to be a transition between *pelidne* and *palaeno*; STRECKER considers it a form of *palaeno*; it is an aberration very difficult to differentiate. The ♀ is more like a ♀ of *palaeno* than of *pelidne*. *standfussi*. *skinneri*. *chippewa*.

C. philodice Godt. (= *dorippe* Godt., *palaeno* Cr., *europome* Steph.) (27a) (the Common Sulphur or Puddle Butterfly), is distributed from New England to Florida and westwards to the Rocky Mountains. This species is very common and often occurs in swarms, enlivening the edges of the roads and clover fields. It only varies a little in the width of the black margin. White ♀♀ are distinguished as ab. **alba** Stgr. i. l. — ab. **anthyale** Hbn. is a form with narrow dark margins. — In Guatemala occurs **guatemalena** Stgr. i. l., a deeper yellow form with somewhat broader dark margin to the upper surface. The under surface is somewhat more strongly dark-marked. — Egg light yellow to red, iridescent. Larva slender, green, with light green longitudinal stripes; lives on clover. Pupa light green. *philodice*. *alba*. *anthyale*. *guatemalena*.

C. chrysomelas Hy. Edw. (27a, b), from the coast districts of North California, is larger and in the male more glossy, also with broader dark margin than *philodice*. The under surface is dark orange, light yellow in the middle of the forewing. The ♀ is much lighter yellow and has in the broad distal margin of the forewing larger, but diffuse yellow spots. The under surface is light yellow. *chrysomelas*.

C. hageni Edw. (27b), from Canada, has the forewing narrow and pointed, particularly in the male. The upper surface in the ♂ is beautifully yellow, the black distal margin of the forewing, contrary to that of other allied species, broadest at the inner angle. The ground-colour of the under surface is but little different from the upper. The ♀ is grey-yellow, has broader grey-black distal margin, in which large yellow spots are placed, the under surface is grey-yellow. *hageni*.

C. alexandra Edw. (27b) (the Alexandra Sulphur), from Colorado, is in the ♂ above similar to *philodice*, but has more glossy yellow ground-colour with orange-yellow tinge, particularly on the hindwing. The under surface, however, is very different in both sexes, namely silver-grey on the hindwing with silvery median spot. The ♀ is light yellow, has a small dark distal margin to the forewing or none at all, but black median spot, and is sometimes suffused with orange-yellow. *alexandra*.

C. edwardsii Edw. (27b), from Virginia, has the upperside lemon-yellow mixed with orange, with narrow dark margins. The under surface is as uniform as in *alexandra*, but yellow, sprinkled with black on the hindwing, the distal margin is reddish. Probably a form of *alexandra*. *edwardsii*.

C. harfordi Hy. Edw., from California, is lighter yellow above, with narrower dark distal margin, intersected by the yellow veins, and is still less marked beneath, in the female showing the beginning of a submarginal macular band on the forewing and narrower distal margin (proximally dentate) than **barbara** Hy. Edw. (27b, c), which also occurs in California. The lemon-yellow ♂ has narrow dark distal margins, the almost sulphur-yellow ♀ only a diffuse distal margin to the forewing. The under surface is similar to that of *philodice*. *harfordi*. *barbara*.

C. boothii Curt. (27c), from arctic America (*Boothia felix*), occurring up to lat. 75°, appears to be very rare. The markings in the sexes are not so different as is the case in the allied species. The ♂ has besides the dark distal margin on the forewing an almost complete submarginal band and on the hindwing the beginning of one. The under surface, particularly in the ♂, is strongly greenish. In ab. **chione** Curt. (as in the Palaearctic *nastes* ab. *insignata*, vol. I, pl. 25c) the dark distal margin of the forewing is wanting. — Flies from the middle of July to the middle of August and is fond of resting on the flowers of *Oxytropis arctica* and *campestris* (CURTIS). *boothii*. *chione*.

C. interior Scudd. (= *occidentalis* Scudd., *emilia* Edw., *astraea* Edw.) (27c), from South Canada and the Rocky Mountains (the Pink-edged Sulphur), is very similar to *philodice*, but the dark distal margins are much narrower and the yellow ground-colour runs into them in streaks, the fringes are rose-red. On the under-side the apex of the forewing and the anterior part of the hindwing are rusty orange-yellow. The ♀ has almost white upper surface and broader, but diffuse, distal margin to the forewing. *interior*.

C. scudderi Reak. (27c) (= Scudder's Sulphur), from Colorado, Utah, Montana and British Columbia, has broader, but grey-besprinkled dark distal margin. The ♀ is usually white, very rarely yellowish, and has only traces of dark margining. The under surface of the ♂ is yellow, dusted with grey-green at the *scudderi*.

apex and distal margin of the forewing as well as on the hindwing, particularly at the costal margin. The silvery median spot of the hindwing is edged with reddish. Larva on bilberry and willow. EDWARDS' attempt at breeding was unsuccessful, as the larvae died during the winter. — The butterfly flies in July at an altitude of 9000 ft.

nastes. **C. nastes** Bdv. (27d) (the Arctic Sulphur), from Labrador, Greenland, Alaska and the Rocky Mountains in British Columbia, is dark grey-green with grey-black margins and red fringes. The ♀ is more yellowish and has more distinct yellowish submarginal spots on both wings. The under surface of the forewing is impure whitish, with greenish yellow scales, the rose-red fringes are conspicuous, the hindwing is yellowish green, lighter at the margin, the white median spot is bordered with red and distally to it is placed a diffuse red spot, the rose-red fringes are broader than on the forewing. The ♀ has a somewhat lighter under surface and on the forewing some small black submarginal spots. — **rossii** Gn., from Boothia felix, has in the ♂ a gold-yellow centre to the forewing above, the ♀ is white. — **hela** Strecker, **moma** Strecker and **streckeri** Gr.-Grsh., from Hudson's Bay, are aberrations which cannot be accurately fixed, as the species varies as strongly in America as in Lappland (*werdandi*).

behri. **C. behri** Edw. (27d), from the mountains in the west of North America, principally of California, is a very variable species. The ♂ is above yellowish green, densely and regularly powdered with blackish, with conspicuous yellow median spot on the hindwing. The dark distal margin is indistinct on the forewing, but sharply defined on the hindwing. The fringes in the ♂ are yellowish, in the ♀ rose-red. The under surface in the ♂ is green-grey, the median spot is indistinct on the forewing, but on the hindwing conspicuous, as above, the costal margin of the hindwing is red. The ♀ has darker under surface and red fringes.

imperialis. **C. imperialis** Btlr. (27d), from Tierra del Fuego (Port Famine), is in both sexes so characteristically marked that it is impossible to confuse it with any other known species. Upper surface in the ♂ deep orange-red, the distal margin on the forewing broad, occupying fully a third of the wing, but narrower on the hindwing, both wings with large black median spot, inner margin of the hindwing yellow, under surface greenish yellow, middle of the forewing orange with light-centred black median spot and black submarginal markings and similar ones at the inner margin, hindwing with orange-red median spot and indistinct orange-yellow spots round the discocellular. ♀ less vivid orange with broader marginal markings, in which orange-red spots are placed, ground-colour of the under surface much more greenish than in the ♂, but with the same markings. The locality of this species has not as yet been established with certainty, but is probably correct.

vautieri. **C. vautieri** Guér. (27e), from Chile, is in the ♂ above orange-red with broad black-brown margin and median spot of the same colour on the forewing, the black-brown margin of the hindwing is much narrower and is suddenly reduced towards the inner angle; the hindwing has a smaller, indistinct dark median spot. The under surface of the forewing is orange-red, at the margins and particularly at the apex yellowish, and has a black median spot and a submarginal row of black spots, which are larger posteriorly. The under surface of the hindwing is yellow, slightly orange in the middle, the reddish median spot has a light centre, a reddish diffuse spot is placed at the base of the wing and in addition there is a row of small reddish submarginal spots; the inner margin is greenish. The ♀ has above yellowish white ground-colour, broader dark distal margins on both wings and light submarginal spots. The ground-colour of the underside of the forewing is impure white, of the hindwing yellowish. ab. **rutilans** Bdv. are ♂♂ with broader dark margin.

cunninghami. **C. cunninghami** Btlr. (27e), from Ecuador, is only known in the male. Similar to *vautieri*, but larger, apical and distal-marginal border narrower, fringes orange-yellow. Under surface differing but little from that of *vautieri*, the reddish spots of the hindwing larger, the black spots of the forewing on the contrary smaller, fringes rose-red.

minuscule. **C. minuscule** Btlr. (27e), from Ecuador, is apparently nothing but a „miniature edition“ of *cunninghami*. The ♀ has white ground-colour, is similar to the *vautieri*-♀, has on the upper surface of the hindwing less marginal marking, but is more strongly marked on the under surface, particularly of the hindwing.

meadi. **C. meadi** Edw. (27d), from the mountains of Colorado, has orange-red ground-colour and almost uniformly broad, light-sprinkled, dark distal margin. In the ♂ the median spot of the forewing is only indicated, in the ♀ distinct, with light centre. The latter has small yellowish spots in the dark distal margin. The under surface is strongly yellow, in the middle of the forewing orange-red with conspicuous white, red-bordered median spot on the hindwing, less conspicuous dark median spot on the forewing and rose-red fringes. No white ♀♀ seem to occur in this species. — Larva on clover, not different from the *elis*-larva. Pupa shaped like that of *philodice*, colouring green-yellow, ventral side more vivid than dorsal, head-projection yellow, a dark dorsal costal line, small whitish spots on the whole body, wing-cases granulated. — Flies in July.

elis. **C. elis** Strecker (Strecker's Sulphur) (27f), from the western mountains of North America (Rocky Mountains), has brilliant orange-red ground-colour and much narrower dark distal margin than *meadi*. The ♀ has paler ground-colour and much more yellow submarginal marking. The under surface is more sombre on

account of the dark scaling. According to STRECKER white ♀♀ also occur. The larvae hatch at the end of July, in captivity they pupate in the middle of April. The full-grown larva is dark yellow-green, on the back somewhat lighter than at the sides, densely covered with short black hairs which are placed on small tubercles, each of which is surrounded with whitish, on each segment a black spot (occasionally absent), above the legs a white stripe, head light green. Pupa like that of *meadi*.

C. eurytheme Bdv. (= *amphidusa* Bdv.) (27f) is distributed from Canada to Mexico and from the Atlantic to the Pacific; the species does not appear to ascend high in the mountains. It is extraordinarily variable. — In *hecate* Weeks the wings are apparently somewhat more pointed, the veins in the apex of the forewing are less prominently yellow, the ground-colour is somewhat deeper orange-red. ♀-ab. **alba** Weeks is distinguished from the similar *eurytheme*-form ab. **albina** (= *alba* Stgr. i. l.) by more sharply defined and rounder white spots in the dark distal margin. — **keewaydin** Edw. is the winter form with paler ground-colour in both sexes; the ♂ has often a narrower dark distal margin. — The summer form **eriphyle** Edw. (27e) has yellow ground colour and is above only distinguished from *philodice* by the yellow veins in the apex of the forewing. — **ariadne** Edw. (27f) suggests a distinct species on account of the localized distribution of the yellow and the orange-red colouring and by the narrow distal margin. — **californiana** Mén., from New California, is compared by the author with the European *edusa*; in the description no definite differential characters are given; the under surface is said to be as in *myrmidone*. — **autumnalis** Cock. is similar to *eriphyle*, but smaller, with narrower margins, the hindwing is more grey-green. Flies in the autumn and spring. — Full-grown larva with dark velvety green back, on each side a narrow white line, on which are placed irregular shiny vermilion spots, some of them being shaded with orange-yellow. Under surface green. Pupa green with a stigmatal yellow line, above which on each segment is placed a brown dot, a subdorsal brown spot, which begins at the margin of the wing-cases and occupies two or three segments. Egg greenish white, transparent, pointed at one end and obtuse at the other, longitudinally ribbed, with oblique stripes between.

C. christina Edw. (27f, g), from the Slave River, has slight orange-red ground-colour and is conspicuous by the yellow basal part of both wings. The underside has no markings except the median spot. The ♀ is almost white, its forewing with only a little dark dusting at the distal margin and black, white-centred median spot.

C. lesbia F. is distributed from South Brazil (Rio Grande do Sul) southwards and westwards into the high mountains. Specimens from South Brazil, Uruguay and Argentina differ so little that they cannot be separated. This form is in the male dark orange-yellow, specimens with violet reflections are not rare; the black-brown distal margin is not sharply defined proximally. The under surface with the exception of the reddish middle of the forewing is vivid yellow with the usual *Colias*-marking. The ground-colour of the upper surface in the ♀♀ is very variable: orange-yellow, yellow, yellowish or white with grey dusting; greenish grey specimens also occur. The white ♀-form has the name ab. **heliceoides** Capr. Probably the name **pyrrhothea** Hbn. (27g) applies to the form from South Brazil, Uruguay and Argentina, whilst the paler specimens from Patagonia should be regarded as the true *lesbia*. — **andina** Stgr., from Bolivia (3000—4000 m), is sprinkled with blackish and has a larger reddish basal spot on the underside of the hindwing. — **arena** Stgr., from Tierra del Fuego (Punta Arenas), has narrower forewing with more pointed apex, light orange-yellow upper surface and broader dark distal margins. — **antarctica** Stgr., from Tierra del Fuego, is a white ♀-form with unspotted distal margin. — **puna** Fruhst., from Peru (Puno, 12 500 ft. elevation), has rounder wings, more thickly and darkly scaled, and narrower dark distal margin to the hindwing. — Flies from November to January. CH. DARWIN observed a large swarm of these butterflies in Patagonia.

C. hecla Lef. (= *boothii* Bdv., *groenlandica* Rühl., *glacialis* Mc. Lachl., *hela* Strecker) (27 g) occurs in Greenland and extends there to lat. 82°. It differs from the Palaearctic form *subiterna* Auriv. by dark, duller ground-colour; the under surface has the same character. — **pallida** Skinner & Mengel is a lighter form.

C. dinora Kirby (27 g), from Ecuador (12 000—16 000 ft.), is orange-yellow, with washed-out, moderately broad dark distal margin to the forewing; the hindwing has a submarginal row of small, dark, inconspicuous spots. The under surface on the forewing is somewhat lighter, on the hindwing somewhat darker than the upper, the median spot is white, small and margined with reddish. The ♀ has lemon-yellow ground-colour and yellow spots in the dark distal margin of the forewing — **alticola** Godm. & Salv., from Peru (3000 m), is larger, has somewhat blue reflections, darker and broader distal margin to the forewing, also narrower distal margin to the hindwing, more distinct median spot, sharper yellow colour on the basal part of both wings and somewhat lighter, but more strongly marked under surface.

C. flaveola Bl. (27 h), from Chile and Bolivia (mountains), is pale orange-yellow in the ♀, in the rather broad dark distal margin of the forewing are placed four large yellowish white subapical spots, the under surface has dull sulphur-yellow ground-colour. Deeper orange-yellow coloured female specimens are common and may be designated ab. **saturata**. — **euxanthe** Fldr. (= *Scalidoneura hermina* Btlr.) (27 h), from Peru, differs but little. The upper surface is deeper coloured and the under surface more strongly marked. White ♀♀ go by the name ab. **alba** Stgr. i. l.

dimera. **C. dimera** Dbl. & Hew. (= *erythrogramma* Koll.) (27 h) is likewise a mountain species indigenous to Colombia, Peru, Ecuador, etc., and apparently little variable. The upper surface of the forewing is orange-yellow, that of the hindwing lemon-yellow. The dark margin of the forewing is moderately broad, that of the hindwing somewhat variable, occasionally it is entirely wanting, as also the black median spot of the forewing. The under surface is sulphur-yellow and has a row of reddish submarginal spots, a diffuse spot at the base and a white, red-bordered median spot on the hindwing. The ♀ is above and beneath yellowish white.

25. Genus: **Meganostoma** Reak.

The species of this genus were formerly united with *Colias*. But apart from differences in neurulation the *Meganostoma*-species are even superficially characterised by the sharply pointed forewing. The ♀♀ have an organ which is only observable in newly emerged specimens on account of its being so very perishable, namely soft, membranous, three-jointed structures on the tarsi of the middle and hindlegs, which have been named eupronechia by their discoverer REAKIRT. Their purpose is not known. *Meganostoma* is further well differentiated from the other Pierids by the absence of a pad between the claws. The larvae live on Leguminosae.

eurydice. **M. eurydice** Bdv. (= ♀ *lorquini* Bdv., *wosnesenskii* Mén.) (26 f) (the Californian Dog-face), from California, has in the male a brilliant sheen on the upper surface only rarely occurring in Pierids. Occasionally also the hindwing has a narrow black distal margin. The ♀ is unicolorous yellow with a large black median spot on the forewing and reddish marginal spots. The marking of the under surface in both sexes is thoroughly *Colias*-like. The larva lives on *Amorpha californica*. Egg spindle-shaped, thick in the middle, running out into a rounded point, with longitudinal ribs. Full-grown larva cylindrical, of uniform thickness from segment 3 to 11, densely covered with small black tubercles, on each of which a very fine black hair is placed, from segment 3 to 11, a narrow white band above the legs, above this band on the 3. and 4. segments, in the middle of each segment, is a glassy, semicircular appendage, black with purple reflection; on the remaining segments this structure is only occasionally found. Colour dark green, underside blue-green, also the legs; head round, only a little depressed at the vertex, strongly covered with fine black dots, each of which bears a short black hair. Pupation takes place six days after the larva ceases to feed. Pupa laterally compressed, the thorax projecting on the ventral side and forming a narrow prominence, abdomen pointed, conical, mesothorax less projecting than in *C. eurytheme* and *philodice*, low, rounded, with a low keel, behind which there is a slight incision. Head apple-green, a white stripe at the sides of the abdomen. Duration of the pupal stage nine to ten days.

cesonia. **M. cesonia** Stoll (= *sesonia* Mart., *caroliniana* Pet.) (26 f) (the Southern Dog-face) is distributed from the United States of North America to Argentina. The ♀ has reduced marginal marking, the black marking at the distal margin of the hindwing is always absent. — **cesonides** Stgr., from Bolivia (3500 m), is smaller, *cerbera*. has narrower black distal margin, and the black dusting at the base is almost entirely absent. — **cerbera** Fldr., from Venezuela, has on the under surface of the hindwing red longitudinal stripes (is doubtless only an aberration). — **rosea** Stgr. *i. l.*, from Colorado, has small black stripes instead of the black distal margin of the hindwing. — **centralamericana** Stgr. *i. l.* has very broad black margin also to the hindwing and on the latter orange-yellow spots before the black distal margin. — **bernardino** Edw. is only a small form.

philippa. **M. philippa** F. (26 e), from Bolivia, has in the ♂ the apex of the forewing rounded, in the ♀ on the contrary it is rather pointed. In the marking there is no constant difference.

cynops. **M. cynops** Btlr. (26 e), from Haiti, has the apex of the forewing rounded in both sexes. The ♂ has broad black margin, in the ♀ this is broken up into spots.

helena. **M. helena** Reak. (26 e), from Bolivia, has, especially in the female, the forewing very sharply produced. The ♂ has no black margin to the light orange-yellow hindwing, in the ♀ the hindwing is likewise without markings except the yellow median spot and on the forewing the margin is broken up into spots. The under surface in both sexes has a considerable amount of red marking.

therapis. **M. therapis** Fldr. (26 f), from Venezuela and California, has the forewing sharply pointed. The ♂ is lemon-yellow, the ♀ light sulphur-yellow. Both have strongly reduced distal-marginal marking and on the under surface much red marking.

Very probably the genus *Meganostoma* has only two species, *eurydice* and *cesonia*; all the other forms described above I should consider only aberrant forms or slight local modifications of *cesonia*.

26. Genus: **Nathalis** Bdv.

This genus only embraces two small species, of which even the superficial appearance forbids any confusion with other genera. The antennae have strikingly knob-like clubs. The palpi are rather hairy than scaled and the subcostal has three branches, two of which branch off before the discocellular.

N. jole *Bdv.* (= *felicia* *Poey*) (27 h), from the southern States of North America, Mexico, Colombia *jole*, and Cuba, is lemon-yellow with black apex and black innermarginal stripes on the forewing, also at the costal margin of the hindwing there is a long black spot. The ♀ has the upper surface of the hindwing pale orange-red. ab. **irene** *Fitch* (27 h) is a ♀-form with the hindwing deeper orange-yellow and more strongly marked *irene*, with black. — **luteolus** *Reak.*, from Honduras, is a more orange-yellow form, strongly marked with dark. *luteolus*.

N. plauta *Dbl. & Hew.* (27 h), from Venezuela and Colombia, has yellow upper surface, very broad black *plauta*, distal margin to the forewing and a large orange-yellow spot at the anterior part of the hindwing. Under surface of the forewing in the middle orange-yellow, at the margin greenish yellow, the hindwing greenish, yellow at the margin. The ♀ has the upperside of the forewing almost black.

27. Genus: **Euchloë** *Hbn.*

Of this genus, which is represented in the Palaearctic Region by nine species, there are only three in the American Region. Antennae and palpi shaped as in the following genus *Anthocharis*. Of the five subcostal veins only one arises before the apex of the cell. The upper radial is coincident with the subcostal almost to $\frac{1}{3}$. — Egg spindle-shaped, with small protuberances at the sides. Larva slender with small head. Pupa pointed at both ends, the breast only a little raised.

E. ausonides *Luc.* (28 a) is distributed from Colorado to California, also occurring on Vancouver Island, *ausonides*. Upper surface white with black median spot and grey-black apical and subapical markings on the forewing. Under surface white with black median spot on the forewing and yellow-green „parsley“-marking on the hindwing and the apex of the forewing. — Larva on Crucifers, cylindrically slender, head small, round, green, black-spotted, body entirely covered with black granules, each of which bears a short hair, longitudinally marked with three pale-coloured stripes, a dorsal one and one at each side, the interspaces yellow, the lateral stripes margined beneath with white to yellow; ventral legs greenish yellow, thoracic legs black. Pupa slender, cylindrical, thickest in the middle, uniformly pointed, grey-brown, and covered with fine dark longitudinal stripes.

E. creusa *Dbl. & Hew.* (28 a), from the Rocky Mountains, is similar to the preceding species, but the *creusa*, black median spot of the forewing is large and square. The markings of the under surface are grass-green and the light spots on the hindwing are silver-white. Almost nothing is known of the early stages.

E. hyantis *Edw.* (28 a), from California, is above very similar to *creusa*, but on the underside of the *hyantis*, hindwing more yellow-green and the spots are there only white but not shiny.

28. Genus: **Anthocharis** *Bdv.*

This genus is only represented in America by four species. It differs from the preceding genus in that two subcostal veins arise before the discocellular. The upper radial is only shortly coincident with the subcostal. Larva slender, narrower at both ends, with soft hairs. Pupa canoe-shaped, with strongly projecting breast (boot-shape), produced into a point at the ends, weakly keeled on the back.

A. sara *Luc.* (= *flora* *Wright*) (28 a) is distributed all over the United States of North America. Upper *sara*, surface white with large orange-red apical spot, which is margined with black distally and proximally. Hindwing white. ab. **reakirtii** *Edw.* (28 a) differs from *sara* by the presence of black dots at the distal margin of *reakirtii*, the hindwing. The ♀ of *sara* has slightly yellowish upper surface and smaller and paler orange spot. ab. **stella** *Edw.* has in the ♂ the bordering round the orange spot less black, also the spot itself is smaller and paler; the ♀ has yellow upper surface. ab. **julia** *Edw.* (28 a) differs from *sara* in that the proximal black bordering of the *julia*, orange spot is interrupted and the hindwing has larger black marginal spots. — Earlier stages unknown.

A. thoosa *Scudd.* (28 a), from California (which is only known to me from the figure), shows in pattern *thoosa*, no difference between the sexes, only the ground-colour of the ♂ above and beneath is white, that of the ♀ yellowish. Is probably scarcely a separate species, but a large, strongly marked form of *sara*.

A. cethura *Fldr.* (= *angelina* *Bdv.*, *cooperi* *Behr*) (28 a), from California, has in the ♂ the distal margin *cethura*, of the forewing somewhat incurved. Upper surface white with small orange spot, very small dark apical markings, and black median spot. ♀ with stronger black markings. ab. **morrisoni** *Edw.* has larger and darker orange *morrisoni*, spot also more black apical marking. — For this species GROTE has erected the genus *Tetracharis*.

pima. **A. pima** *Edw.* (28 a), from Arizona, flies at the middle of March. Upper surface in both sexes yellow, the black apical marking sometimes encroaches more or less on the yellow subapical spot. Under surface of the hindwing yellow-green and marked with white.

29. Genus: **Midea** *H.-Schäff.*

The principal character of this genus consists in the shape of the wings, the forewing is somewhat falcate. The neurulation is scarcely different from that of *Anthocharis*. It is therefore purely a matter of opinion whether the following species should be added to *Anthocharis* or associated in a separate genus.

genutia. **M. genutia** *F.* (= *midea* *Hbn.*, *l'herminieri* *Godt.*) (the Falcate Orange-tip) (28 b) occurs throughout the United States, in the north in one generation, in the south in two. Upper surface in both sexes white with black median spot and black apical markings, the ♂ with orange-yellow spot in the apex of the forewing. Under surface white with grey-green markings on the hindwing and the apex of the forewing. — Egg long, narrow, thickest in the middle, moderately rounded towards the base, the latter broad and flattened, suddenly narrowed towards the apex, so that the upper half is conical, the apex impressed, the micropyle surrounded by small, irregular hexagonal cells, vertically ribbed, the number of the ribs about 16, of which half reach the tip and the others terminate not far from it, the interspaces filled up by numerous fine grooves. Colour yellow-green. Duration of the egg-stage four days. Full-grown larva cylindrical, slender, head broad, colour dark yellow-green, shiny, underside, ventral and thoracic legs lighter, a yellow band in the middle of the back from the 2. to the 13. segment, a broad white band above the legs, upperside decorated with six longitudinal rows of shiny black tubercles, each with a short black hair which is thicker at the end. Pupa slender, abdomen long, round and pointed, head with a pointed appendage, on the ventral side of the thorax an almost triangular, laterally compressed lump, which is hidden by the wing-cases; colour usually light yellow-brown with a reddish tinge and darker on the mesothorax, the prolongation of the head brown, the wing-cases more or less spotted and striped with black, at the back of the abdomen a row of small black spots, two to four on each segment, and a subdorsal row of small spots or dots.

limonea. **M. limonea** *Btlr.* (28 b), from Mexico, is much larger than *genutia*, has the upper surface of the hindwing yellow, and the forewing is not pure white as in *genutia*. The marking at the apex of the forewing is rather different from that of *genutia*.

lanceolata. **M. lanceolata** *Luc.* (Boisduval's Marble) (28 b) is distributed from North California to Alaska, but rare. The upper surface is white with black median spot and slight blackish apical markings, which are enlarged in the ♀. The under surface is sprinkled with brown, the veins especially are distinctly scaled with brown. — Larva green, laterally light blue with white stripes, also with small black dots, each with a short black bristle; it lives on *Turritis*.

30. Genus: **Zegris** *Rbr.*

The Palaearctic species of this genus are distinguished by their life-history. The larvae do not pupate free like most other Pierids, but in a cocoon in which traces of the girdle are still present. As the larva of the only American species is not yet known, it cannot be proved with certainty whether it belongs to this genus. But according to the neurulation and the marking of the under surface *olympia* belongs to the genus *Zegris*.

olympia. **Z. olympia** *Edw.* (28 b), from Texas, is white above, with large black median spot and small, shadowy apical markings. The under surface has the markings shown in the figure, which are somewhat reduced in *rosa*. ab. **rosa** *Edw.*

31. Genus: **Eroëssa** *Dbl.*

This genus is nearly allied to the Palaearctic and North American *Euchloë* and *Anthocharis*, in it, however, both the radials of the forewing are free and the cell is consequently closed by three discocellulars. The forewing has slightly undulate distal margin and five-branched subcostal, the two first subcostals arise before the end of the cell, the third far behind it. The precostal is directed proximally. The palpi are very slender, anteriorly long-haired. The only species of this genus inhabits the high mountains of Chile.

chilensis. **E. chilensis** *Guér.* (28 c) has white ground-colour on the upper surface, with black apical half of the forewing, in which is placed a large orange-red spot. The hindwing has a row of black marginal and submarginal

spots; in the ♀ the latter are larger and hook-shaped, also the orange-red submarginal spot is narrower and there are two white spots in the apex of the forewing. Beneath the ground-colour of the hindwing in the ♂ is white, in the ♀ light yellow; the black spots placed in the middle of the hindwing are more distinctly edged with rust-yellow in the ♂. Apparently rare and local.

32. Genus: **Andina** Stgr.

This genus, containing only one species, inhabits the mountains of Bolivia at the highest limit at which animal life can exist. The butterfly was discovered by G. GARLEPP at an elevation of about 5800 m. The upper surface of the species presents the appearance of a pale-coloured *Colias*, the under surface is also *Colias*-like, but the veins and the structure of antennae show that it is not very closely allied to this genus. The antennae have distinctly knob-shaped clubs, the lower radial of the forewing arises directly from the subcostal, hence the upper and middle discocellulars are wanting; the upper radial does not arise until far beyond the discocellular. The hindwing has a well developed precostal, directed proximad.

A. huanaco Stgr. (28 c) is in the ♂ white above, the smaller ♀ yellowish, the base suffused with black-*huanaco*. ish, the forewing has a marginal and a shorter submarginal band as well as a large black median spot, hindwing without markings. Under surface of the forewing white resp. yellowish, costal margin and apex dusted with grey, with smaller subapical spots and smaller median spot. Under surface of the hindwing dark grey, more or less dusted with yellow-brownish, with a light median spot and a row of not very distinct blackish submarginal spots. — GARLEPP says: „it flies only on the highest summits of the Cordilleras, amidst the wildest boulders and most desolate masses of rock; I cannot understand its choosing such wastes and deserts, or how it can exist there at all, where it must sometimes be daily covered with snow and ice, where there is absolutely no vegetation, and where only the condor makes his abode“. In these heights a tempestuous wind constantly prevails, so that the insect can only fly in the brief lulls. Was taken in February.

33. Genus: **Phulia** H.-Schäff.

The habits of this genus are almost the same as those of *Andina*, except that *Phulia* does not ascend to the summits of the mountains, but stops at a height of from 4000 to 5000 m. The species fly at the same time as *Andina*. — Whilst in *Andina* the second subcostal vein branches off at the discocellular, in *Phulia* it mostly arises before the end of the cell, occasionally at the cell-end (*nysias*), on the other hand the lower radial is always coincident with the subcostal, though sometimes only for a little way (*nymphula*); the cell is therefore only closed by the lower discocellular. The species are very similar. The genus most nearly allied to this and the preceding one is *Baltia*, from the highest mountains of the Palaearctic Region.

P. nymphula Bl., Stgr. (28 c) has been described from specimens from Chile, but STAUDINGER identifies *nymphula*. a species from Bolivia (that figured as *nymphula*) with it. BLANCHARD'S figure does not appear to be accurate; so long as no Chilean specimens can be compared it remains uncertain whether the form figured is the true *nymphula*. It is one of the larger species of the genus.

P. nymphula Stgr. (28 c, d), from Bolivia, is the largest species of the genus and has also the most mark-*nymphula*. ings both above and beneath. Very striking, particularly in the ♂, is the basally prolonged black median spot on the upperside of the forewing.

P. nymphaea Stgr. (= *nymphula* Weym., *nymphula* Stgr.) (28 d), from Bolivia (Illimani and Cocapota), *nymphaea*. has rather reduced black markings on both surfaces. The ♀, in addition to an increase of the black markings on the forewing, has also rather large, wedge-shaped black spots on the upperside of the hindwing.

P. illimani Weym. (28 d), from Bolivia (Illimani and Cocapota), has somewhat stronger black apical *illimani*. marking, but no subapical one, and the black median spot is wanting. The under surface of the forewing has at the apex grey-yellow dusting only, but no black marking.

P. nymphagoga Stgr. i. l. (28 d), from Bolivia (Cocapota), is one of the smallest species, and has on *nymphagoga* the forewing a considerable amount of black marking, also a black median spot, but in the ♂ the hindwing is entirely without markings. The ♀ has on the forewing more black markings (the marginal macular band reaches to the inner angle) and the hindwing has rather large black marginal spots, also small submarginal spots, and is besides somewhat dark-scaled. The under surface, especially at the apex of the forewing, is more marked with black than in the other small species.

P. nysias Weym. (28 e), from Bolivia (Illimani and Cocapota), is distinguished at once by the under *nysias*. surface of the hindwing, which (as in *Andina huanaco*) is grey with black spots. The ♀♀ are vivid sulphur-

yellow and have more black markings, also on the hindwing small black marginal spots, and the veins of the forewing are dusted with black.

P. nysiella *Stgr. i. l.* (28 d), from Bolivia (Cillutincara, 3000 m), taken by GARLEPP in January 1896, is the smallest species, with broader forewing. Upper surface white, hindwing without markings, forewing with sharply separated small black marginal spots, three larger black subapical spots and very small black median spot. Under surface similar to that of *nysias*, but the hindwing lighter grey, with much yellowish scaling, forewing with small, very indistinct subapical spots, median spot of the forewing absent. ♀ still unknown.

34. Genus: **Pseudopieris** G. & S.

With this genus begins a small group of genera which cannot with certainty be reckoned Pierids and yet can still less be associated with any other family. The position of the last genus *Styx* especially is very doubtful. *Pseudopieris* was formerly united with *Dismorphia*, but has rightly been separated from it. Although there is no decisive difference in the neurulation, yet the much more Pierid-like facies, as well as the form of the short antennae, which do not at all possess the length characteristic of *Heliconius* or the Ithomiids, and also the want of striking sexual dimorphism, present sufficient generic characters. — According to the observations of Herr RICH. HAENSCH the forms of *Pseudopieris* do not differ essentially in habits from the *Pieris*-like *Dismorphias*.

P. nehemia is distributed from Mexico to South Brazil, and also occurs in the mountainous west. Upper surface in both sexes white with black margin to the forewing. This is very narrow in **nehemia** Bdv. (= *cydno viridula*. Dbl. & Hew.) (28 e), only exceptionally somewhat broader. It is not much broader in **viridula** Fldr., from Colombia, which has slightly greenish upper surface. This border is much broader in the apex of the forewing in **aequatorialis** Fldr., from Ecuador. The underside in all these forms is white on the forewing, yellowish on the hindwing and the apex of the forewing. A blackish spot on the discocellulars of the hindwing is occasionally absent in *nehemia*, in the other forms apparently constant.

penia. Whether **P. penia** Hopff. (28 e), from Peru, is a separate species, I must leave undecided. In this form the black apical border is still broader than in *aequatorialis*, but in addition the border is strongly widened in the middle of the distal margin. As there is no blackish spot at the discocellular on the under surface of the hindwing, HOPFFER considers *penia* as a separate species. But as was shown in *nehemia*, the presence or absence of this spot cannot be taken as a specific criterion.

35. Genus: **Dismorphia** Hbn.

This genus is distributed from the southern states of North America to South Brazil and from east to west, especially developed in the western mountains, but most species have not a large area of distribution. All the species differ so considerably both in superficial appearance and in neurulation from their relatives that they cannot be recognised as „Whites“ without further examination. They doubtless represent another branch of the Pierid stirps. Their nearest relatives — with the exception of *Pseudopieris* — are the Palaearctic *Leptidia* and perhaps *Pseudopontia* from West Africa. A great number of the species resemble Ithomiids, Acraeids (*Actinote*) and Heliconines, which are protected by their bad smell and taste, yet cases of deceptive similarity are not common. Sometimes only the female is a so-called mimic. The sexual dimorphism in many species is so great that the identity of the sexes can only be proved with difficulty. — BUTLER not only retained HÜBNER's genus *Enantia* (with *melite* as type), but also erected a further genus, *Moschoneura* (with *methymna* as type). Since there is neither any necessity for such a division, nor are the characters given for these genera tenable, the genus (which is also known under the name *Leptalis* Dalm.) is here retained in the customary extent. — I am indebted for the following biological notes to Herr RICH. HAENSCH, who made observations during his travels in South America, especially in Ecuador: larva and pupa are not known to him. The Ithomiid-like species, such as *orise*, *theonoe*, etc., like the Ithomiids, are fond of the shades of the thick forests of trees, whilst the more brightly coloured ones, *praxinoe*, *astyocha*, are also found in lighter places in the woods. The ♂♂ of the latter when flying assume a position in which the large light spot of scent-scales on the upper surface of the hindwing is covered, so that they, like their ♀♀, are not distinguishable from the similarly marked *Mechanitis*. Forms like *nemesis*, *critomedia*, *leonora*, etc., prefer small clearings in the woods and are fond of resting, with the wings spread out, on the tops of bushes upon which the sun shines. The seasonally common yellow and white forms, such as *medora*, *limnorina*, *Pseudopieris nehemia*, etc., make their appearance at the beginning resp. end of the rainy season often in large numbers on scented umbelliferous flowers by the wayside and at the edges of the woods; they do not differ noticeably from the true Pierids. The mimetic forms are scarcely distinguishable in their habits from the similar Ithomiids; they occur in the same localities as these, but do not fly in company with them. On the other hand their colouring regularly corresponds with the local forms of Ithomiids, which is especially well seen in the *theonoe*-forms.

D. cretacea S. & K. (28 e), from South Brazil (Espírito Santo), has white upper surface with broad black apex, which, especially in the ♀, is strongly sinuate in the posterior part. The hindwing has small black distal border. The under surface is yellowish white, the forewing without markings in the ♂, in the ♀ with a black subapical band and a black spot near the inner angle, the hindwing has 2 black-grey transverse bands, of which one is placed in the centre, the other near the costal margin.

D. isodrita Bdv. (28 e), said to be from Brazil, known to me in one ♀ from Colombia, is scarcely specifically different from *cretacea*. The black apical margin differs but little from that of *cretacea*, but has a very small white subapical spot, the hindwing is entirely without markings. The under surface is more yellow and the black subapical band of the forewing reduced to an indistinctly defined spot.

D. flavia Fldr. (*H.-Schäff. i. l.*), from Venezuela, is similar to *isodrita*, but is said to have shorter wings and narrower cell. Unknown to me.

D. psamathe F. (28 f), said to be from Guiana and Para, only known to me from South Brazil (São Paulo and Santa Catharina), has in the black apex of the forewing a large white spot. The ♀♀ have mostly strongly yellow hindwing. The under surface of the hindwing and the apex of the forewing are light ochre-yellow, the hindwing has 2 grey-black transverse bands, in the ♂♂ the black subapical spot of the forewing is occasionally absent.

D. acutipennis Btlr., from Trinidad, only before me in a ♂ from Colombia, differs from *psamathe* only in having a lighter yellow under surface. — **disjuncta** form. nov. (28 f), from Rio Grande do Sul, is distinguished by the proximal part of the black apical spot being broken up and the under surface as yellow as in *psamathe* (seasonal form of *psamathe*?).

D. mercenaria Fldr. (28 f) comes from Venezuela, I have before me specimens from Peru; whether these are different from Venezuelan specimens I cannot say. It has in the male a somewhat narrower forewing and differently shaped margin to the black apical spots, but is otherwise, especially in the female, not different from *cretacea*.

D. licinia Cr. (= *galanthis* Bates, *phronima* F.) (28 f), from the Upper Amazon (Peru), is distinguished from *mercenaria* by the different shape of the proximal boundary of the black apical spot. The under surface is somewhat lighter yellow.

D. aphrodite Fldr., from Brazil, is above chalk-white, distal margin black-brown with a white spot, hindwing unicolorous. Under surface of the forewing in the ♂ sulphur-yellow in the middle, costal margin and base saffron-yellow, small blackish dots at the costal margin, ♀ unicolorous, costal and hind margins ochre-yellow, black-brown apical band, hindwing in the ♂ ochre-yellow, in the ♀ much lighter, both beneath with brownish stripes. Unknown to me.

D. marion G. & S. (28 g), from Central America and South Brazil (Santa Catharina), is similar to *psamathe*, but has, in addition to the differences in the markings, both wings differently shaped. The under-side of the forewing is less strongly marked.

D. thermesia Godt. (28 g), from Brazil (São Paulo), has the forewing very narrow in the male. In the ♀ the oblong black median spot of the forewing is absent. The under surface is pearly white with dark scale-spots, the ♀ has also black subapical markings on the forewing, which are wanting in the ♂. — **thermesina** Hopff., from Peru, has more black markings.

D. limnorina Fldr. (28 g), from Brazil (Minas Geraes), has peculiar wing-contour. The wings in the ♀ are entirely light yellow, in the ♂ light yellow in the posterior half. The underside has black submarginal markings on the forewing in both sexes, but less in the ♂.

D. dilis Bdv., from Brazil, is similar to *licinia*, but has on the forewing narrower and shorter black markings. Under surface as in *licinia*. Only known to me from the description.

D. theugenis Dbl. (= *colon* Weym.) (28 h), from Bolivia and Peru, has deep sulphur-yellow upper surface with broad black apical marking and black median spot on the forewing as well as black margin to the hindwing. The under surface is sulphur-yellow except for the white posterior part of the forewing, the forewing has a black marginal spot in the middle of the distal margin and the hindwing 3 blackish transverse bands. ♀ unknown to me.

D. melite L. (28 h), from South Brazil (Santa Catharina and Rio Grande do Sul), has canary-yellow upper surface with black marginal and central markings. The under surface as in the allied species is yellow with 2 blackish transverse bands on the hindwing. The ♀♀ have broader forewing and much lighter yellow

jethys. ground-colour, almost white specimens are not rare: ab. **alba** *form. nov.* — **jethys** Bdv. (= *melite* Koll.) („the Mime“ of the North Americans) occurs in Mexico, but probably also further south. This form has additional black markings, such as a stripe from the base to the inner angle of the forewing.

cornelia. **D. cornelia** Fldr. (28 h), from Mexico, has ochre-yellow upper surface with black-brown markings on the forewing and black-brown, irregular distal margin to the hindwing. The under surface with the exception of the whitish posterior part of the forewing is ochre-yellow with brownish spots and dots on the hindwing.

amalia. — **amalia** Stgr. (28 h), from Chiriqui and Colombia, has much less dark marking on the forewing, especially the broad median stripe is entirely absent, and the hindwing has a uniformly broad dark distal margin. The ground-colour is above and beneath lighter.

mirandola. **D. mirandola** Hew. (29 a), from Ecuador and Colombia, has black upper surface to the forewing with yellow markings. The hindwing is clay-yellow on the anterior part (scent-spot), sulphur-yellow on the posterior part, and has black markings. The ♀ has on the forewing more and lighter yellow markings, the hindwing is light sulphur-yellow with black distal margin. The under surface in both sexes is light yellow with *cauca.* silver-white spots and dark dusting. — **cauca** *form. nov.*, from West Colombia (Cauca Valley), has in the ♂ continuous yellow median band on the forewing, more reduced clay-yellow scent-spot on the hindwing, the yellow marking near the base of the forewing wanting.

carthesis. **D. carthesis** Hew. (29 a), from Ecuador, is similar to *mirandola*, but has larger subapical spots on the forewing, no yellow marking near the base of the hindwing, but a larger yellow spot at the inner margin. The hindwing has a narrower yellow median band and much broader black distal margin. The under surface has on the hindwing a broad yellow median band and broad black distal margin, in which are placed reddish white submarginal spots.

idonia. **D. idonia** Hew., from Ecuador, has the forewing similarly marked to that of *carthesis*, but the yellow spot at the inner margin is absent. The yellow median band of the hindwing is more obliquely placed. The under surface is entirely different: the grey-blackish hindwing has two yellow central transverse bands and some small yellow marginal spots.

zaela. **D. zaela** Hew. (29 a, b), from Colombia and Ecuador, has on the black-brown forewing in the ♂ chrome-yellow central and subapical spots. A large part of the hindwing is occupied by a grey scent-patch with a silky gloss, the posterior part of this wing is proximally yellow, distally chrome-yellow, the distal margin black-brown. The ♀ has light yellow markings on the forewing and a light sulphur-yellow hindwing with broad black margin. The under surface in both sexes is marbled with white and grey-brown.

arcadia. **D. arcadia** Fldr. (29 b), from Colombia, is similar to the preceding species, but has in both sexes light canary-yellow markings. On the hindwing the ♂ has one yellow band and the ♀ two. The underside is similar to that of *zaela*, but much yellower.

crisia. **D. crisia** Dru., from „Brazil“, is about the same shape as *arcadia* and the markings are similar. The inner margin of the forewing is whitish, in the ♀ the median spots are smaller. — Only known to me from BOISOUVAL'S description.

medora. **D. medora** Dbl. (♀ = *casta* Koll.) (29 b), from Colombia and Venezuela, has also a yellow spot at the inner margin of the forewing; on the grey, silky scent-patch of the hindwing there is a sharply defined, oval

medorina. grey spot of scent-scales. The ♀ has much broader yellow markings. — **medorina** Hew., from Bolivia, has three larger yellow subapical spots on the forewing and the posterior yellow spot of the median band is separated from the other spots.

medorilla. The yellow band of the hindwing is orange-yellow in the anterior part. — **medorilla** Hew., from Ecuador and Peru, has smaller yellow spots on the forewing and narrower yellow band on the hindwing.

proserpina. **D. proserpina** S. & K., from the Roraima, has above and beneath much lighter (almost white) markings than *demeter* *form. nov.* (29 b), from Colombia and Venezuela, the latter has moreover on the scent-patch of the hindwing no special, sharply defined scent-scale-spot like *proserpina* (separate species?); *proserpina* I only know from the figures and descriptions. The under surface is much yellower in *demeter* but is otherwise not different from that of *proserpina*.

othoë. **D. othoë** Hew. (29 c), from Ecuador and Colombia, is above black-brown with yellowish markings. In the ♀ the markings are more whitish and larger. The underside is pale yellow with blackish scale-markings.

zathoe. **D. zathoe** Hew., from Colombia, is similar to *othoë*, but the median spots are smaller and yellower and the subapical spot is larger and white, also the band of the hindwing is more sharply yellow.

lelex. **D. lelex** Hew., from Ecuador, is somewhat larger than *zathoe* and has paler yellow markings, the median spots of the forewing are larger, on the other hand instead of the one large white subapical spot there are two

small yellowish spots. The hindwing is yellow and has only in the anterior part a proximally dentate black distal margin.

D. pimpla Hopff. (29c), from Bolivia, has the yellow subapical spots differently placed, also yellow *pimpla* dusting at the base of the forewing. The hindwing has the black margin narrow but uniform.

D. pallidula Btlr. (29c), from Costa Rica and Chiriqui, has white markings and a large, grey, oblong *pallidula* scent-patch on the hindwing.

D. lysis Hew. (29c), from Ecuador, has the white markings enlarged, no subapical spots, and the ♀ *lysis* has on the forewing a broad white median band reaching from the costal to the inner margin. The under surface has pearl-white spots and much grey-yellow scale-marking. — **peruana** form. nov., from Peru, is somewhat smaller, paler black and beneath with grey instead of yellow scales.

D. foedora Luc. (29d), from Venezuela and Peru, is white above with broad black apex and two sub-*foedora* basal stripes, of which the posterior one is joined to the border of the distal margin; the hindwing has a moderately broad black border. The ♀ has on the forewing less black marking, on the other hand almost the whole posterior half of the hindwing is occupied by the black border. Both sexes have small white subapical spots. The under surface is white with irregular dark markings. The ♀ has more and darker markings.

D. virgo Bates (29d), from Guatemala and Chiriqui, has black upper surface with white markings; *virgo* in the ♂ the scent-spot occupies the whole posterior half of the hindwing and is shiny grey-white; the ♀ has on the hindwing a broad white median band. — **lubina** Btlr., from Costa Rica, is distinguished by the white *lubina* median spot being divided by black veins. — **lunina** Btlr., from Costa Rica, differs in the ♀ from *virgo* in that *lunina* the upperside of the hindwing is greenish at the inner margin.

D. lua Hew. (29d, e), from Colombia, Ecuador and Peru, has very narrow forewing and broad hind-*lua* wing. Upper surface black-brown with yellow spots, anterior half of the hindwing in the ♂ white-yellow. ♀ with yellow bands and spots on the forewing and yellow hindwing broadly margined with black-brown. Under surface yellow with blackish bands on the hindwing, the ♀ on the forewing also with subapical and median black band.

D. lycosura Hew., from Peru, has almost black forewing with a large light yellow spot in the middle *lycosura* and two small subapical yellow spots, hindwing grey-black with almost white scent-patch on the anterior part. Under surface grey-black with large yellow spots in the middle of the hindwing and some red spots at its base, at the costal margin of the forewing three small yellow spots. Only known to me from the figure.

D. leonora Hew. (29e), from Ecuador, has a smaller yellow spot in the middle of the hindmargin *leonora* of the forewing than *lycosura*, but also several small yellow spots. The hindwing is black-grey, on the grey-white, silky scent-patch (friction-area) of the hindwing is placed a rather sharply defined yellow scent-scale-spot, the inner margin of the hindwing is broadly grey-blue. The ♀ is very different: white with broad black margins, a black band in the cell of the forewing and three small white subapical spots. Under surface pearl-white with yellow interneural stripes in the ♂, whilst the ♀ has blackish markings which correspond more to those of the upperside.

D. niepelti Weym., which forms a transition to *lewyi*, differs from it in that the wedge-spot behind the middle of the costa in the ♂ is reduced to a streak and the whitish inner-marginal spot of the forewing is so much enlarged that it extends beyond the median into the cell; from Ecuador.

D. lewyi Luc. (= *nasua* Fldr., ♀ *kadenii* Fldr.) (29e), from Venezuela, Colombia and Ecuador, has *lewyi* black upper surface with subapical and postmedial yellow spots as well as whitish stripes at the inner margin of the forewing. The hindwing is black-brown, the scent-scale-patch is yellowish, the broad yellow inner margin is divided into spots by the black veins. The ♀ is yellowish white with broad black margins. Under surface pearl-white with yellow markings on the posterior and brownish markings on the anterior part of the hindwing. In the ♀ these markings are black-brown, also the forewing has black-brown subapical markings and black-brown markings in the cell. — **boliviensis** Stgr. i. l., from Bolivia and Peru, has larger subapical *boliviensis* and postmedial yellow spots on the forewing, but the light stripe at its inner margin is absent; the yellow markings on the posterior part of the hindwing are somewhat lighter.

D. schausii Dogn., from Ecuador (Loja), has a similar female to that of *lewyi*. Upper surface black-*schausii* grey with three white subapical spots and a small white spot at the costal margin at the discocellular, basal part of the forewing white, upper surface of the hindwing black-grey, anterior part bluish white, under surface of the forewing similar to the upper, but the subapical spots light yellow, hindwing black with yellow costal margin, a small yellow stripe in the cell and three red basal spots.

D. critomedia Hbn. (= *crisia* Fldr.) (29e, f), from Venezuela, Colombia and Brazil (?), has on the *critomedia* black forewing a strongly curved broad white median band, which in the ♀ is divided by a broad black stripe. The hindwing is white with black margins. Under surface white with dark markings.

euryope. **D. euryope** Luc. (29f), from Mexico, is above black with yellowish white median band on the forewing. The large friction-spot of the hindwing is light bluish, the scent-scale-spot on it white, from the inner margin to the middle of the hindwing runs a yellow band, divided into spots by the black veins. Only known to me from the figure.

ines. **D. ines** spec. nov. (29f), from Ecuador, is a good deal like *euryope*. The median band is much narrower and snow-white, at the inner margin of the forewing there is a small yellow scale-stripe. The ♀ has sulphur-yellow hindwing, broadly margined with black-brown. The underside has dull gloss, is grey-black and has white spots.

lygdamis. **D. lygdamis** Hew. (29f), from Ecuador, has black upper surface with bluish markings. The under surface is much more like that of a *Catantix* than a *Dismorphia*. Only known to me from the figure.

hyposticta. **D. hyposticta** Fldr., from Venezuela and Colombia, has in the female yellow upper surface with broad black-brown distal margin, interrupted median band and 3—4 small white subapical spots on the forewing, the yellow ground-colour of the hindwing makes a tooth into the dark distal margin between the 3. median vein and the lower radial. Under surface of the forewing similar to the upper, paler, with yellow marginal spots, hindwing black-brown with a number of large yellow spots. Only known to me from the description.

hippotas. **D. hippotas** Hew. (29g), from Ecuador, has black-brown upper surface with white spots. The ♀ is very similar to the ♂. Under surface impure white with yellowish spots of scales. The ♀ has also black markings on the forewing.

teresa. **D. teresa** Hew. (= *praxidice* Hew.) (29g), from Ecuador, has black-blue, somewhat glossy upper surface with white spots. The ♂ has besides the clay-yellow scent-spot at the costal margin of the hindwing a large „brand“ on the upper surface in the middle of the forewing. The ♀ is very similar to the ♂. Underside similar to that of *hippotas*.

praxidice. **D. praxidice** Hew., from Ecuador, has more rounded forewing than *teresa*, somewhat darker under surface, otherwise no constant differences.

nemesis. **D. nemesis** Latr. (= *atthis* Dbl.) (29g), from Mexico, Venezuela, Colombia, Ecuador, Peru, etc., has the upper surface of the forewing dark brown with small yellow spots, the anterior half of the hindwing (scent-area) is shiny grey, the posterior part yellow. The ♀ is very different: white or yellowish with black markings, the hindwing has only a narrow black distal margin. The under surface is grey with lighter and yellow spots. — **D. viridifascia** Bltr., from Costa Rica, has smaller, linear yellow spots and on the hindwing a light greenish band. ♀ with light brown margin.

cinerascens. **D. cinerascens** Salv. (29g, 30a), from Costa Rica and Chiriqui, is black above and has on the forewing white spots and on the hindwing a grey-blue, wedge-shaped band before the black distal margin. The ♀ has black hindwing with a broad white median band. The under surface is similar to that of *nemesis*.

melia. **D. melia** Godt. (30a), from Brazil (Santa Catharina and São Paulo), has the forewing black above with yellow markings and the hindwing yellow with black markings. The ♀ is a so-called *Acrae*-mimic, rather similar to *Acraea* (*Actinote*) *thalia* and resp. *anteas*; this (Brazilian) form is **acraeoides** Hew. (30a), the other form. **mimetica** Stgr., from Cayenne, has more yellow ground-colour, but does not differ in the markings.

larunda. **D. larunda** Hew. (30a), from Ecuador, is a mimic of *Heliconius*. Upper surface black with yellow median band and yellow submarginal spots as well as large red basal spot on the forewing and similarly marked hindwing. The proximal part of the hindwing is beneath red, the broad black border has small white spots and at the distal margin there is a yellow submarginal band.

spio. **D. spio** Godt. (30a), from the Antilles, has the forewing sharply falcate in both sexes. In the ♀ the yellow-red markings of the ♂ are sulphur-yellow.

cubana. **D. cubana** H.-Sch. (30b), from Cuba, has the forewing only moderately pointed and resembles *spio* in markings and colouring.

lysianax. **D. lysianax** Hew. (30b), from the Upper Amazon, has the forewing completely rounded. Only the ♀ is known, which differs from the ♂ of *cubana* by the absence of the yellow subapical spots and further in that the yellow median band is extended to the base in a narrow stripe at the costal margin.

tricolor. **D. tricolor** S. & K. (30b) resembles *Heliconius vicinus* Mén. Only the ♀ is known. Upper surface black, forewing with a broad yellow median band and red inner-marginal stripe, hindwing with red median band and a yellow-red submarginal spot at the distal margin. Under surface similar, but the red on the hindwing reduced to small stripes, and white submarginal spots. Habitat still unknown.

amphione. **D. amphione** Cr. (30b, c), from Guiana, bears a superficial resemblance to certain forms of *Heliconius*. — **D. arsinoe** Fldr., from Colombia, differs in the larger and snow-white scent-scale-area on the hindwing; the inner margin of the forewing is red-brown and between submedian and median there is a small black stripe in the red-brown. — In **astynomides** Stgr. i. l., from Venezuela, this black stripe is absent and the inner

margin itself is very narrowly brown-red and the hindwing only differs from that of *arsinoe* by the red-brown inner margin. — **arsinoides** Stgr., from Chiriqui, has the hindwing as in *astynomides*, but the yellow spots of the central row are smaller and widely separated and the inner margin of the forewing is broadly black. — **praxinoe** Dbl., from Mexico, differs from *arsinoides* in that the white scent-scale-area of the hindwing throws out some teeth into the black distal margin and the colour of the red-brown markings is lighter. — **discrepans** Btlr. (30c), from Colombia and Ecuador, has only very small yellow spots instead of the yellow median band. — **meridionalis** form. nov., from Bolivia, has only two yellow subapical spots on the forewing and a yellow median band, interrupted in the middle but broad, which does not touch the reduced red-brown markings. — **amphithea** Fldr., from Mexico, is larger than *amphione* and has larger and broader, more falcate forewing. Unknown to me, probably not different from *praxinoe*. — **egaena** Bates, from Ega, is in the female very dark red-brown, has much yellow central and subapical marking and is very similar to *Mechanitis polymnia egaensis* Bates. — **rhomboidea** Btlr., from Nanta (probably East Peru) (or Nauta, Upper Amazon?), is the largest form. In it the yellow subapical spots are entirely absent, the red-brown markings are much developed and in the posterior part of the forewing reach the distal margin, the yellow median band is only represented by some small spots at the costal margin. The ♀ has red-brown hindwing with black wedge-shaped marginal spots, the yellow median band is very broad and almost reaches the inner angle. Is perhaps a separate species. Only known to me from the figure.

D. laia Godt. Shape and size as *amphione*. Forewing black with 3 red-brown spots: a long one in the cell, another at the inner margin, and the third, a small round one, is placed towards the middle of the wing and sometimes united with the first; in addition the distal half of the wing is distinguished by a band-like spot, divided by the veins. Upper surface of the hindwing broadly glossy white along the costal margin, then red-brown with black, dentate, rather broad margin. Under surface of the forewing glossy white, margined with yellow at the apex, the other markings as above, but larger, under surface of the hindwing brownish with several lighter patches, the apex margined with red, a row of rather large yellow marginal spots and 2 small spots of the same colour near the distal margin (at the distal angle). Surinam, Cayenne. Only known to me from the description.

D. astynome Dalm. (= *polymela* Hbn.) (30c), from Brazil (Santa Catharina), is very similar to *amphione*, but most probably a separate species. Instead of a row of yellow subapical spots *astynome* has only one such spot, occasionally with a dot before it, and this is placed nearer to the apex than the row of spots in *amphione*. The inner margin of the forewing is always broadly black. The under surface is essentially different. — **astyocha** Hbn., from Rio Grande do Sul and São Paulo, differs in the yellow apical spot of the forewing being placed directly at the margin and the under surface being lighter and less marked.

D. dejone Hew. (30c), from Central America, has the forewing black above with white spots, the anterior half of the hindwing (scent-spot) light grey, shiny, posterior part of the hindwing red-brown with black margin. Under surface of the hindwing grey-brown with a transverse row of yellow spots in the middle and a few other yellow spots and dots. ♀ unknown to me.

D. sororna Btlr. (30d), from Costa Rica and Chiriqui, is a large species. The ♂ has black forewing with yellowish apical, subapical and central spots, the larger anterior part of the hindwing (scent-spot) is light grey, with silky gloss, the posterior part is red-brown, margined with black. The ♀ resembles the *Lycorea*-species; it has black forewing with the same rows of spots as the ♂, in addition a red-brown transverse band on the proximal half of the forewing, the hindwing is red-brown with black distal margin and some small yellow marginal spots. The under surface resembles the upper. — **hagaresa** Btlr., from Costa Rica, is probably nothing more than a less marked form of *sororna* (seasonal form?).

D. cordillera Fldr. (30d), from Colombia and Chiriqui, though specifically separated by BUTLER from *sororna*, appears really to belong to it as a seasonal form. The yellow spots of the forewing are larger, in the ♂ the posterior part of the hindwing is yellow and the ♀ also has lighter markings, hence the hindwing is almost yellow. The under surface resembles the upper in markings and colouring.

D. orise Bdv. (30e), from Guiana and Bolivia, but probably also occurring elsewhere, is very similar to *Thyridia psidii* L. and *confusa* Btlr., especially in the female. The perfectly transparent wings have black margin and black median band, which, however, in the ♂ only reaches the middle of the wing on account of the scent-scale on the anterior half of the hindwing.

D. rhetes Hew., from Colombia, differs from **hewitsoni** Kirby (30e, f), from Ecuador, only in the light spots on the distal part of the forewing and on the hindwing being white (glassy), not bluish. This species bears a general resemblance to several of the larger Ithomiids.

D. theonoe Hew. (30e), from Ecuador, is very similar to *Ithomia flora* Cr. It is transparent and has black margins and markings. — **melanoe** Bates, from the Upper Amazon, has broader black margins and bands; it is regarded by BATES as a mimic of *Ithomia onega* Hew.

D. siloe Hew. (30e), from Colombia, has the posterior half of the hindwing red-brown. It has the general aspect of an Ithomiid, but is not specially like any particular species.

- theucharila*. **D. theucharila** Dbl. (30f), from Venezuela, also shows a general resemblance to an Ithomiid. The ♀ has the hindwing entirely brown with black markings and broad yellow basal band to the forewing. — **nella** Btlr., from Colombia, is not different except that the spots of the middle row are not yellow but transparent white.
- lysinoe*. **D. lysinoe** Hew. (30d), from the Upper Amazon, is similar to *siloe*, but has in the male only a broad yellow marginal band, which is bordered anteriorly by a black band.
- lysinooides*. **D. lysinooides** Stgr. (30f), from West Colombia (Cauca Valley), is only known in the female. It is very similar to *lysinoe*, but has on the underside of the hindwing a complete row of white marginal spots.
- erythro*. **D. erythro** Bates (30f), from the Amazons (S. Paulo de Olivença), is rather similar to *Hypoleria aureliana*, *aureola*, etc. It is rather variable, the red-yellow apical spot being sometimes divided into several spots, sometimes there is also a red-yellow spot near the inner angle.
- batesi*. **D. batesi** spec. nov. (= *lysinoe* var. *Hew.*) (30f), from the Amazons, has not only very much red-yellow marking on the forewing but also a very broad red-yellow band on the hindwing. The transparent parts of the wings are bluish.
- leuconoe*. **D. leuconoe** Bates, from the Amazon River (S. Paulo de Olivença), has a larger red-yellow subapical spot and yellowish subapical band on the hindwing. The latter is entirely absent in **melanoides** form. nov. (30f, g), from Ecuador (Coca), which also has smaller transparent spots on the forewing and somewhat broader black distal margin to the hindwing. This species is very similar to *Ithomia ida* and *ilerdina*.
- melanoides*. **D. fortunata** Luc. (30g), distributed from Mexico to Chiriqui, has a general Ithomiid-habitus, but without special resemblance to any particular species. The transparent wings have black margins and bands. The ♀ has a whitish transparent subapical band, the ♂ in its place some entirely glassy spots. — Whether **ithomiella** form. nov. (30g), from Ecuador (Balzabamba), is a form of *fortunata* or a separate species I am unable to judge for want of sufficient material. The ♂ differs from *fortunata*-♂ in that the glassy median spot of the forewing is broader but shorter and behind it there is another small glassy spot. The ♀ is very different from *fortunata*-♀, as may be seen from the figure. Beneath the ♂ has larger white marginal spots, also the ♀ has complete rows of larger and rounder white marginal spots, whilst the ♀ of *fortunata* has only 3 white dots on the apex of the forewing.
- antherize*. **D. antherize** Hew. (29h), from Mexico, is in the male similar to the *fortunata*-♀, it has no light markings on the distal part of the forewing except a broad white subapical band. On the underside of the hindwing there is a large white apical spot. — In **argochloe** Bates, from Ega, the margins of the white band of the forewing are sinuous, the hindwing is darker and has a submarginal narrow light band.
- argochloe*. **D. avonia** Hew. (29h), from Ecuador (Quito and Balzabamba), has semitransparent yellow markings, whilst **pallida** form. nov. (seasonal form?), from Ecuador (Paramba and Chimbo), has much lighter, glossy markings, entirely white in the distal part of the wing. The under surface is similar to the upper, but both wings bear at the distal margin a row of white spots.
- avonia*. **D. pinthaeus** L. (= *eumelia* Cr., *vocula* Cr.) (29h), from Guiana, the Amazons, etc., has yellow upper surface with black markings; in the ♀ there is also a black stripe at the costal margin of the hindwing. The under surface is similar to the upper, but has small white marginal spots and on the hindwing a red-brown submarginal band. The species somewhat resembles the Ithomiid-genus *Aeria* Hbn. — **amelina** Hopff. (29h), from Peru, has narrower black bands and consequently larger yellow areas, also the red-brown marginal band on the underside of the hindwing is narrower. — **ela** Hew., from Ecuador, has in addition small yellowish submarginal spots at the inner margin of the hindwing and the submarginal band of the hindwing is yellow instead of red-brown.
- pinthaeus*. **D. ithomia** Hew. (29h), from Ecuador, is similar to *pinthaeus*, but by the division of the postmedian yellow band 4 yellow spots are formed on the forewing, also the distal margin of both wings has a complete row of white spots.
- amelina*. **D. methymna** Godt. (30g), from Brazil (Minas Geraes), is above an exact copy of *Heterosais gazoria* Godt. (36d), which flies together with it. Beneath the two species differ in that *methymna* has white marginal spots on both wings and on the hindwing an indistinct red-brown submarginal band.
- ela*. **D. methymna** Godt. (30g), from Brazil (Minas Geraes), is above an exact copy of *Heterosais gazoria* Godt. (36d), which flies together with it. Beneath the two species differ in that *methymna* has white marginal spots on both wings and on the hindwing an indistinct red-brown submarginal band.

36. Genus: **Styx** Stgr.

As already said, the systematic position of this peculiar genus is altogether uncertain. The idea that *Styx infernalis* might be the ♀ of an Erycinid is however incorrect, since the ♂ of *infernalis* is also known. The external appearance of this insect is Pierid-like, similar to *Davidina alticola*, which is figured in vol. I, pl. 19b. The neurulation of the forewing shows no striking differences, on the other hand that of the costal margin of the hindwing is not unlike certain Ithomiids. In the structure of the palpi and legs the genus shows great similarity to the Erycinids.

- infernalis*. **S. infernalis** Stgr. (30g), from south-eastern Peru (Chanchamayo), is in both sexes transparent grey-black with lighter central part of the wings. Only a few specimens of this species are known, so that it would seem to be very rare or only to occur in a few restricted localities.

Additions and Corrections.

p. 57: read *eronima* instead of *eronina*.

Pieris *elodia* forma **deserta** *Fruhst.*, from Ecuador, has on the underside the apex to the forewing *deserta* pale straw-coloured and the same colour on the upper surface of the hindwing.

p. 60: *eleusis* belongs to the genus *Leptophobia*. When I worked out the genera *Pieris* and *Leptophobia* I knew *eleusis* only from the description.

p. 62.: **Leptophobia gonzaga** *Fruhst.*, from Ecuador (Papalacta), captured by R. HAENSCH in the middle of January, is somewhat larger than *eleone*, hindwing more elliptical, ground-colour white, forewing similar to that of *pinara*, the costal more extended brown-green, the anal margin powdered with blackish almost to the middle of the wing. The black distal border of the forewing likewise extending at the hindmargin proximally to the middle of the wing, otherwise almost of the same outline as in *pinara*, especially in the proximal, median incision. At the apex of the cell of the forewing the black band is absent. Hindwing with black diffuse basal area; distal margin yellowish with some black dots at the extremities of the veins. Under surface: forewing whitish; distal border, as far as the black margin of the upperside shows through, suffused with dull yellowish. Hindwing yellowish white, slightly glossy, with small black triangular spot at the end of the cell and yellowish basal area. ♀, upper surface: forewing broadly margined all round with brown-black, so that the white ground-colour is reduced to a mushroom-shaped discal patch. Hindwing yellowish, costal and anal region defined by a thin black line; the central area bearing 2 black dots. Under surface as in the ♂. Fringes in both sexes yellowish. Only known to me from the description.

Lept. *eleusis mollitica* *Fruhst.*, from Peru (Huancabamba), has a more pointed forewing and rounder hindwing than *helena*. Upper surface purer white, in the wet-season form distinctly more broadly margined with black than in *helena*. Costal part of the forewing darker, more yellow instead of white. The dry-season form appears to have a narrower border than the dry-season form of *helena*, but of a deeper black.

p. 64: *Perrh. pyrrha alethina* *Bthr.*, from Costa Rica, is in the female similar to the *malenka*-♀; the *alethina*. subapical spots are absent, the spots of the median band are sharply yellow, the black spots of the anterior band larger and distinct, the black median band of the hindwing is absent. — Aberration?

p. 65: read *antodyca* instead of *autodyca*.

p. 67: *Archon. nigripennis* has a black forewing and a small red spot on the hindwing; *hades* *Fruhst.* appears to be synonymous with it. — In *rosacea* the three white spots on the forewing are small and well separated, the hindwing has two deep rose-red oval spots. — *approximata* has the rose-red spot on the hindwing nearer to the distal margin, it is broader, uniform in colour, and divided by three veins. The yellow spot on the under surface is much smaller. Found in the Polochic Valley.

p. 68: **Appias peregrina** *form. nov.* (26 c), from Cuba, I consider a form of *janeira* *Bönnigh.* The *peregrina*. latter I formerly regarded as an aberrant form of *drusilla* because the author said nothing about the very different shape. It is not necessary here to describe the shape, as it can be seen from the figure. I have before me two ♂♂ of *peregrina*; in these the upper surface is not glossy white, but strongly yellow, particularly on the hindwing, the proximal part of the costal margin of the forewing is more strongly blackened than in *drusilla* and the black border of the forewing is not extended to the inner angle, but scarcely to the 1. median vein. On the underside the basal half of the cell of the forewing is yellow and the hindwing has a subanal yellowish stripe from the base to the distal margin. — The existence of two American species of *Appias* is consequently established.

p. 71: read *teutamis* (= *epimene* *Heu.*) instead of *teutanis*. The ♀ is black above and has on the forewing a broad red median band, which gives it a resemblance to the red-banded species of *Heliconius*. Instead of *troezene* *Fldr.* read **affinis** *Röb. spec. nov.* (22 d). — *Catasticta troezene* *Fldr.*, from Colombia, is above yellow, similar to *eximia* (22 g), but the wings are smooth-margined, the yellow median markings are broader and more narrowed anteriorly, in the cell is a comma-shaped yellow spot, hindwing with much broader and not dentate black marginal markings. Under surface similar to *tomiris*, but the white central markings of the forewing are twice as broad and the dark central markings of the hindwing much broader and pointed distally at the veins.

p. 72: **Catasticta incerta** *Dogn.*, from Ecuador (Loja), is not really identical with *manco*; it is, if not a separate species, at least a good local form of *manco*. The upper surface is yellower, has much less black marking and large white marginal spots. The ground-colour of the underside of the forewing is much yellower, instead of the small grey triangular marginal spots in *manco* there are round resp. square yellow spots in *incerta*, the hindwing has more black marking and deeper yellow spots.

p. 74: **Catasticta poujadei** *Dogn.*, from Ecuador (Loja), is very similar to *clara* (22 g), but smaller, the upper surface of the hindwing is almost the same, but the forewing has larger yellow spots, some of which

are crescent-shaped, and the white, streak-like apical spots are absent, the black distal margin is narrower. In the shape of the wings it agrees more with *eximia* (22 g).

jaliscana. p. 78: In **Hesperocharis jaliscana** *Schaus*, from Mexico (Guadalajara), the ♂ is white, the ♀ lemon-coloured, both with black apical and distal-marginal markings as far as the third median vein. Hindwing beneath of a beautiful yellow with a red spot at the base, a black spot behind the cell and a row of smoky grey angular spots at the costal margin and apex. Similar to *Hesp. crocea*.

graphites. **Hesperocharis graphites** *Bates*, from Guatemala, is large, yellow with black marginal markings and less sharply black submarginal ones, black median spot on the forewing; under surface with much broken black markings and ochre-yellow cell on the forewing.

paranensis. **Hesperocharis paranensis** *Schaus*, from Parana (Castro), is white with slight greenish tint, distal half of the costal margin narrowly black, small triangular black spots in the apex and at the distal margin of the forewing. Under surface of the forewing whitish, apex and costal margin yellowish, a black dot at the base, antemedian, median and postmedian irregular and angulated black lines, which are interrupted by the veins, small black spots at the distal margin between the veins. A small species.

crocea. **Hesperoch. (?) crocea** *Bates*, from Costa Rica and Mexico, is above sulphur-yellow in the ♂, deep canary-yellow in the ♀, in both sexes slightly dark marked at the apex of the forewing. The under surface is ochre-yellow with the exception of the lighter posterior part of the forewing and has two blackish spots at the costal margin of the hindwing and a similar spot at the point of origin of the 1. median vein. — Apart from the very different facies, which agrees well with *idiotica* *Btlr.*, *crocea* also differs somewhat from *Hesperocharis* in neuration, since the upper discocellular of the forewing is absent in the ♂ and very small in the ♀ and the other two discocellulars of the forewing are of very unequal length (lower discocellular longer). It appears to me now, since I have examined specimens which are very probably congeneric with *idiotica*, that the genus *Heliochroma* *Btlr.* is justified. In shape the species of this genus are very similar to *Daptonoura*, though the hindwing is more elongated at the inner angle, whilst in neuration they more nearly approach *Hesperocharis*.

sinoides. p. 81: **Terias sinoides** *Capr.*, from Rio de Janeiro (Itaipu), is probably a small form of *phiale*. Upper surface white, slightly yellowish, black distal margin of the forewing shorter and narrower than in *phiale*. Hindwing without markings. Under surface with the exception of the posterior part of the forewing more strongly yellow than the upper, in the middle of the hindwing some small blackish spots.

portoricensis. **Terias citrina portoricensis** *Dew.*, from Porto Rico, is smaller and lighter than the Cuban form, the violet spots on the under surface are more flesh-coloured.

nigrocincta. **Terias nigrocincta** *Dogn.*, from Ecuador (Loja), is similar to *plataea*, but has a lighter forewing and the hindwing of the same colour. The black border of the inner margin of the forewing is joined to the border of the distal margin, the orange-yellow stripes at the inner margin are absent. The hindwing has large, proximally pointed, well separated black marginal spots. The yellowish under surface has on the hindwing brownish spots and dark scales.

ribbei. **Dismorphia ribbei** *Godm. & Salv.*, from Panama, is similar to *fortunata*, but the subapical band of the forewing is divided and there is a small white apical spot. — Is it a separate species?

Alphabetical List

with reference to the original descriptions of the forms of the American Pieridae.

* signifies that the form is also figured in the place cited.

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zathoë Dism. *Hew.* Exot. Butt. II Lept. *
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3. Family: **Danaidae**.

Particulars as to the characters of this family are given in the Palaearctic part of this work (vol. I, p. 75). The Danaids are distinguished from the Pierids especially by the aborted forelegs; from the Heliconines, Nymphalids and Satyrids by the basally bifurcate submedian of the forewing. The antennae are thin, without distinct club. Cell of the hindwing long and closed. In America the true Danaids are only represented by a few species of the genus *Danais*, which belong to the subgroup *Anosia* and are mostly met with in a large number of individuals in wooded country (especially in North America). In South America on the contrary an externally very different subfamily, the *Ithomiinae*, is developed in numerous genera and hundreds of species, which are commonest at the tributaries of the Upper Amazon, in the valleys of the Andes, but occur singly as far as Argentina and North America. A third small group, the *Lycoreinae*, forms the transition between the two before-mentioned subfamilies and combines characters of both. Its representatives are most numerous in the central part of America.

1. Subfamily: **Danainae**.

Wings broad, abdomen short. The scent-organ of the ♂♂ consists of scale-like structures or pouches on the hindwing. The forelegs of the ♀♀ are short, clubbed at the end.

1. Genus: **Danais** Latr.

Powerful, mostly yellow-brown butterflies with dark margins and whitish dots. They have a long-sustained flight and are fond of the open country, accompanying cultivation further and further into the primeval forests as soon as a few clearings have been formed where the foodplants of the larvae, species of *Asclepias*, can get a foothold. The larvae are bright-coloured, with transverse stripes, and provided with soft appendages. Pupae bell-shaped, with gold ridges or dots.

A. **Archippus** Group.

Larvae with 2 pairs of fleshy appendages. Cell of the hindwing long. ♂ with moderately small scent-spot.

D. archippus F. (= *plexippus* L.) (vol. I, pl. 28c). Body black-brown, hairy, with whitish dots *archippus*. and streaks. Wings above brown-yellow with dark veins and margins; at the distal margin a double row of small whitish spots. Above the end of the cell of the forewing a black-brown patch with several brownish whitish spots. On the under surface the hindwing is yellowish, the veins with broader edges and the white marginal spots larger. — From Nicaragua southwards occurs a local race which I call **nigrippus** *form. nov.* In this the *nigrippus*. whole apex of the forewing as far as the end of the cell is black-brown and the spots are pure white. This form especially is found also in the north of South America. — HULST designates as **fumosus** a form of *archippus* with *fumosus*. dark black-brown ground-colour. — Larva yellowish with black transverse stripes and has on the 3. and on the 11. segment 1 pair of fleshy appendages. It lives on *Asclepias curassavica* and requires about 3 weeks for its development. It is protected by its pungent, nauseous smell. Pupa light green, transparent, with golden dots. In North America *archippus* has as many as four broods. The butterflies of the first appear at the end of May. Sometimes they occur in large swarms. In America the species is found from Canada to Paraguay. The typical northern form, however, extends southwards only to Central America.

D. erippus Cr. (31a) is very nearly allied to *archippus*, but always differs from it by the absence of *erippus*. the black-brown inner margin of the forewing. Moreover the veins on the under surface of the hindwing are broadly margined with white. Larva yellowish with black head and transverse stripes. On the 2. and 11. segments 2 appendages each; the anterior ones are used as antennae. Pupa berry-shaped, thickest at segment 6, transparent white-green with shiny gold dots. The habitat of *erippus* is Brazil from whence it has spread southwards to Patagonia (Berg) and northwards to Central America and the West Indian islands.

D. cleophile Godt. The smallest American species; it differs from all the other forms in having the mar- *cleophile*. ginal and apical spots yellowish instead of white. The apex of the forewing is broadly black. This rare and beautiful species occurs only on the West Indian islands, particularly Haiti, Cuba and Jamaica.

B. **Gilippus** Group.

Larvae with 3 pairs of fleshy appendages. Cell of the hindwing short. ♂ with moderately large scent-spot.

D. gilippus Cr. (= *vincetoxici* Hbn., *manuja* Ersch.) (31a). Similar to *erippus*, but smaller and with- *gilippus*. out the black transverse band in the apex of the forewing. Between the median veins of the forewing inside the black margin 4 additional larger, white spots. Further a number of white spots are placed at the end of the cell of the hindwing. Veins in the disc of the hindwing beneath only narrowly edged with white. Abdomen brownish. South America, especially at the coast near Rio de Janeiro, but also in Bolivia. — **nivosus** Godm. *nivosus*.

& *Salv.* (= *hermippus* *Druce*), a form of *gilippus*, has much paler ground-colour and very large white spots; especially at the apex of the cell of the hindwing; it inhabits northern Peru.

plexaure. **D. plexaure** *Godt.* This small species is very similar to *gilippus*; but the inner row of white spots, between the median veins of the forewing, is always larger, especially on the under surface. Moreover *plexaure* has on the hindwing another row of white spots between the black distal margin and the apex of the cell. Further the under surface of the hindwing in *plexaure* is always grey-brown, different from that of the forewing, whilst in *gilippus* it is red-brown; *plexaure* occurs in southern Brazil and in Argentina. Larva on *Aselepias curassavica*; very similar to that of *erippus*, but with another pair of false thorns on segment 5. The markings also similar to those of *erippus*; the black is so much extended that the light ground-colour is almost entirely suppressed except for 2 vivid yellow transverse bands. False thorns black, bright red at the base. Pupa likewise similar to that of *erippus*.

berenice. **D. berenice** *Cr.* (= *erippus* *F.*, *gilippus* *Smith*) (31a) is the same size as *gilippus*. Dark brown, the veins little prominent. The white spots of the forewing are small; on the under surface of the hindwing they are almost entirely absent. Veins on the underside of the hindwing more broadly margined with white on the disc. The double row of small white marginal spots is usually incomplete. From the south of the United States and *strigosa.* the West Indies to South Brazil. **BATES** describes as *strigosa* a form from Guatemala of somewhat lighter colouring, in which the veins, especially on the upperside of the hindwing, are dusted with grey. This form also occurs in Mexico and Texas. — ab. *thersippus* *Bat.*, from Panama, is according to **GODMAN** and **SALVIN** an un-
thersippus. *hermippus.* usual form of *berenice*. It has dull, dark reddish brown ground-colour and dark brown distal margins. — **hermippus** *Fldr.* (31a) approaches *berenice*, but is easy to recognise by the strikingly light, grey-brown colour and strongly grey-white dusting in the disc. It has also particularly large white spots on the forewing. It inhabits Colombia. — Larva of *berenice* on *Aselepias curassavica* and *amplexicaulis*. It is whitish violet with red-brown transverse stripes and violet incisions, as well as a yellow lateral line. On segment 2, 5 and 11 is placed 1 pair of appendages. Pupa greenish with black-yellow transverse line on the venter and golden dots. It is more elongate than in *archippus* without the sharp ventral ridge. The butterflies appear in June. They fly in large numbers in sunny places up to a height of 6000 ft.

jamaicensis. **D. jamaicensis** *Bat.* Markings as in *berenice*. Colouring pale yellow-brown with brown margins. The veins of the hindwing margined with grey as in *strigosa*. Smaller than *berenice*. It was once brought in large numbers from Jamaica. Larva with transverse black and white stripes, dorsally with a short yellow band on each segment and yellow spots at the ends of the white stripes above the legs. On segment 5, 6 and 11 is placed 1 pair of red appendages, the first pair the longest. The pupa is light green with very small black dots and golden spots.

eresimus. **D. eresimus** *Cr.* (31b). Differs from all the preceding in the relatively small cell of the hindwing, as well as in the absence of the black and white margins on the underside of the hindwing. On the other hand it has here near the dark brown distal margin a lighter broad band and between this and the apex of the cell a second, undulate band, joined to the first at the ends. The colour of the upper surface is brownish, at the base of both wings darker and at the distal margin black-brown. The black-brown costal margin of the forewing is widened behind the apex of the cell into a triangle, the apex of which touches the opposite distal margin, as in *erippus*; the white marginal and apical spots are likewise present. The abdomen is the same colour as the wings. **CRAMER** described the species from Surinam; but it also occurs in other parts of northern South America; thus in Colombia, Peru and on the Amazons, though nowhere very common. Is fond of visiting *xanthippus.* the banks of rivers. — **xanthippus** *Fldr.*, from Brazil, is said to be most nearly allied to the preceding and to differ from it by lighter colouring, whilst the blackish distal margin of the hindwing is broader and the light spots *erginus.* on its under surface are absent. — **erginus** *Godm.* & *Salv.* This form is likewise said to approach *eresimus* and to be distinguished from it by the darker colour of the wings and more distinct white spots. The apex of the forewing is almost black and the disc of the hindwing appreciably lighter. The habitat is northern Peru.

cleothera. **D. cleothera** *Godt.* (31b). Very nearly allied to *eresimus*, but differs especially in the under surface of the hindwing, the blackish veins of which, as in most other species, are margined with white. On the other hand *cleothera* has also the two lighter bands there as in *eresimus*, and indeed the inner one is still darker and therefore more distinct. The black costal margin is only widened as far as to the discocellular. The hindwing has mostly a double row of white marginal spots on the upper surface. **GODART** gives (erroneously) the island of Timor as locality of *cleothera*; it occurs in Mexico, Central America and on the Antilles; according to **DOUBLEDAY** also in Venezuela.

2. Subfamily; **Lycoreïnae.**

Wings elongate. Abdomen extending beyond the anal angle of the hindwing; posteriorly thickened like a club. Antennae reaching to the end of the cell. Claws with appendages. ♂ with 2 retractile tufts of hair at the extremity of the abdomen. The species of the two genera which belong here are confined to the

Neotropical region. They occur in open localities in the primeval forest. Their flight is irregular. The larvae are similar to those of the *Danainae*; they are said to live on Solaneae.

2. Genus: **Lycorea** Dbl. & Hew.

Large, stately, bright-coloured butterflies, mostly of yellow-brown ground-colour, with blackish margins and streaks, as well as yellowish bands and spots and also white marginal dots. The species have all the same scheme of markings, which is also repeated in many genera of the *Ithomiinae*, and of which I will therefore here give a general description, afterwards referring to it for short as „*Lycorea-habitus*“. The figure of *Lycorea halia* Hbn. on pl. 31c may serve as an example. The ground-colour is mostly a peculiar reddish yellow-brown. The apical half of the forewing is black-brown with an oblique band formed of yellow spots, which crosses the apex of the cell, and with one or several yellow subapical spots. From the black-brown apical part 3 streak-like projections run towards the base: one along the median, the others along the costal and hindmargin. On the disc of the hindwing there is an oblong, band-like, blackish loop, open towards the base, from the costal margin towards the apex and then back to the inner margin. The oblong space enclosed by this loop is often yellow in a number of species from certain districts. The distal margin of the hindwing is black-brown and mostly has above and beneath a row of white submarginal dots. This scheme of colouring can be recognised again in most *Lycoreas* and many *Ithomiids*, though the pattern is often somewhat altered, the yellow being replaced by brown or the black sometimes covering almost the whole hindwing.

The *Lycoreas* are feeble fliers, prefer the edges of the roads and open places and are fond of visiting flowering shrubs, where, as they hang on the flowers, they can scarcely be distinguished from the similar *Melinæa* and *Mechanitis*.

Unfortunately very little is yet known as to the larvae. BOISDUVAL mentions that they have flexible fleshy appendages, which are arranged in pairs on some of the segments, also that they are similar to those of the true Danaids and likewise live on *Asclepiadeae*. According to GUPPY some at least of them are similar to those of *Tithorea*, with only 1 pair of appendages on segment 2 and live also on cacao and on a plant similar to caoutchouc.

L. eva F. Markings as in the figured form *concolor* (31 c), but the forewing has on the discocellular *eva*. the typical yellow oblique band, which at the costal margin encloses a blackish spot. In *eva* and the allied forms the cell of the hindwing is only short, as the lower and middle discocellulars form only a very obtuse angle. This form occurs in the north-east of South America, especially Guiana. — The figured local form **concolor** Stgr. *concolor*. (31c) differs from the nymotypical form in the absence of the yellow transverse band on the forewing, which also occurs in many *Ithomiids*, e. g. *Hirsutis melanina*, *Melinæa chincha*, *Ceratinia bicolora*, *Mechanitis deceptus*, etc. All these forms occur, like *concolor*, on the eastern slopes of the Andes, in Peru and Ecuador. — **pasinuntia** Cr. *pasinuntia*. This form is differentiated from *eva* in that the dark distal margin is merged together with the posterior half of the band-loop into a large spot, as in the figure of *ceres*. Is found in the same localities as *eva*, and transitions also occur.

L. ceres Cr. (31c) is distinguished from the similar *pasinuntia* by the longer cell of the hindwing. Further *ceres*. the yellow oblique band of the forewing is only half as broad at the costal margin and encloses no black spot there; also the band is not joined to the 4. subapical spot. This form comes chiefly from Guiana. — The variety with typical *Lycorea-habitus* I call **fasciata** form. nov. In it the loop and the distal margin of the hindwing are *fasciata*. separated by the yellow-brown ground-colour, as in *eva*. Appears to occur especially in the north-west of South America. — **demeter** Fldr. is a dark brown local form from Cuba and Haiti. It has a yellow macular oblique *demeter*. band like *halia* and 3—4 yellow subapical spots. A similar dark form of *fasciata* occurs on the Lower Amazon near Manaos. — The larva of *ceres* is according to GUPPY whitish with black head and segments and oblique, approximated hook-shaped spots. On the 2. segment is placed a pair of long, flexible appendages. In the full-grown larva the colour from the 4. segment onward is yellow. The egg is conical, flattened, yellowish, with numerous cell-like depressions. The larva is hatched in about 5 days.

L. cleobaea Godt. (31b). In this species the yellow transverse band of the forewing is broken up into *cleobaea*. 3 spots, sometimes also the disc of the hindwing is yellowish. It was described from the Antilles, but is also abundant in the north-west of South America to Bolivia. — In Central America, especially Honduras, it appears mostly in the form **atergatis** Dbl. & Hew., in which the yellow subapical spots of the forewing are very large, *atergatis*. the 4. being united with the middle spot of the oblique band. — **pales** Fldr., from the Upper Amazon, has very *pales*. small yellow spots and patches in the blackish apical part of the forewing, and the normally yellow spot at the apex of the cell has assumed the yellow-brown ground-colour. — **cinnamomea** Weym. is an interesting rare *cinnamomea* form from the Upper Amazon with mahogany-brown ground-colour. The markings are similar to those of *atergatis*, but the yellow subapical spots of the forewing are very large and extend from the apex to the black spot at the end of the cell, which is somewhat larger than in *eva*. Apparently very similar dark red-brown forms occur both of *eva* and of *atergatis*. The first may be recognised by the short cell of the hindwing and

the very large, yellow subapical spots of the forewing; in the latter the cell is longer, the subapical spots are smaller and the ground-colour is less reddish.

halia. **L. halia** Hbn. (31c). This South Brazilian species differs from all the preceding in having only 3 subapical spots on the forewing and in the yellow longitudinal spot in the disc of the hindwing. This band-like spot is characteristic of many South Brazilian species of Ithomiids and Heliconines, which closely resemble *L. halia*, such as *Hirs. pseudethra* Btl., *Mel. ethra* Godt., *Mech. nessaea* Hbn., *Cerat. euryanassa*, *Heliconius narcaea* Godt., etc., almost all of which fly together with *halia*. — As ab. **referrens** ab. nov. I designate a form in which this band-spot shows the normal yellow-brown ground-colour. — A further form, in which the yellow transverse band of the forewing is broken up into 3 spots, as in *cleobaea*, I call **discreta** form. nov. In this the yellow spot of the hindwing also mostly assumes a brownish shade.

3. Genus: **Ituna** Dbl. & Hew.

Mostly large, imposing butterflies with transparent, dark-margined wings. The forms are all rather closely allied. Cross vein of the hindwing almost straight and erect. ♂ with 2 reversible hair-pencils at the anus, as in *Lycorea*. Superficially the species are very similar to corresponding forms of *Olyras*, *Thyridia*, etc. They are chiefly mountain species. They occur from Central America to South Brazil. The larvae according to BOISDUVAL are similar to those of *Lycorea* in shape and habits.

lamirus. **I. lamirus** Latr. (= completa Stgr.) (31c). In typical specimens the basal third of the forewing is black-brown. But examples commonly occur which have at the base a large semitransparent triangle, which often again is united beyond the median nervure with the spot between the median veins. This form I call ab. **fenestrata** ab. nov. Both forms vary in the extent of the yellow-brown colour at the distal margin of the hindwing, which sometimes spreads over the whole of the disc. They occur on the eastern slopes of the Andes of Colombia and Ecuador. — On the western slopes of the Andes of Ecuador occurs a local form which is markedly distinct by the absence of the yellow-brown colour, and which I call **decolorata** form. nov. The dark band-marking is otherwise similar to that of *fenestrata*, but weaker, especially the dark subapical band of the forewing is wanting. On the other hand the anal angle of the hindwing is much more broadly blackish. — In *albescens*. Central America occurs the *fenestrata*-like form **albescens** Dist. The glassy spots of the forewing are narrow and oblong, and also yellowish brown, especially in the basal half, as is the hindwing except the dark margins and the radial veins. — The pupa of *lamirus* is elongate, with obtuse tip, brownish with longitudinal rows of dark double spots. The butterflies are fond of floating about in open places a few metres above the ground in the sunshine and the ♂♂ drink in the heat of the day at moist places on roads and river banks.

phenarete. **I. phenarete** Dbl. & Hew. (31d), from Peru and Bolivia, is transparently yellowish and closely resembles *decolorata*. The margins and bands are, however, much more sharply defined, the hindwing at the distal margin more sharply dentate, and only the club of the antenna is yellowish. — **lanassa** Godm. & Salv. is a form of *phenarete* with yellow brown inner margin to the forewing and the anal angle of the hindwing of the same colour.

ilione. **I. ilione** Cr. (31d), from South Brazil, is the smallest species of *Ituna*, and very similar to *phenarete*. The yellow club of the antenna is much shorter. The colour of the wings is more vivid yellow, the band over the discocellular of the forewing is broader, and on the under surface the margins and bands are partly edged with white.

3. Subfamily: **Ithomiinae**.

This group, which is also known under the names Neotropids and Mechanitids, is by far the richest in forms of the Danaids in America. It contains over $\frac{9}{10}$ of all the forms and like the *Lycoreinae* is confined to America. Superficially many species recall on the one hand the *Lycoreines* and on the other the *Heliconines*, but are differentiated by the neuration, the long, thin antennae and in the ♂ very easily by the hair pencil at the costal margin of the hindwing, which in the *Lycoreines* is placed at the anus and in the *Heliconines* is generally absent.

Concerning the early stages unfortunately very little is as yet known. The larvae are mostly cylindrical with short tubercles, in some genera with long appendages on segment 2. They are said mostly to live on Solaneae. The pupae, in contrast to the long, thin bodies of the butterflies, are mostly short and stout. They have often brilliantly shining, metallicly glossy surfaces, the gloss of which, however, fades after the death of the pupa.

The butterflies have mostly an elongated body, glossy wings and long antennae. The predominant colour of the wings, in addition to the colourless, glassy tone, is a reddish yellow-brown tinge, combined with blackish, yellow and white markings, this being the so-called „*Lycorea*-habitus“. Blue, red or green is hardly ever met with. According to the more brilliant or more dull colours the different groups prefer more open places or the dense, dark primeval forest. Their flight is mostly irregular and sluggish. In open, unwooded localities only a few forms are occasionally met with.

The area of distribution of the Ithomiids embraces the whole of tropical and subtropical America. Single species occur also in California and in Argentina. They also inhabit the mountains up to elevations of 3000 m. Most species, however, are found below the Equator in the valleys of the Andes. Species of the genera *Mechanitis*, *Ceratinia* and the small transparent *Ithomiinae* especially occur in great abundance. Among them are found singly examples of similar, rare species of the genus *Napeogenes*. Many species have a wide range of distribution and occur, though with slight variations, almost everywhere; others again favour exclusively certain mountain-valleys. One can even sometimes take a few specimens of certain rare species daily in particular localities, although the species is not found elsewhere within a considerable distance.

4. Genus: **Olyras** Dbl. & Hew.

The few species of this genus are large, semitransparent, mostly rare butterflies. They may be distinguished from similar forms of other genera by the strongly sinuate inner margin of the forewing, especially in the ♂, and the broad hindwing with the costal margin correspondingly curved. The ♂♂ have 2 hair-pencils at the costal margin of the hindwing. — They are mountain butterflies, and are fond of floating about in open places mostly at a considerable height above the ground.

O. montagui Btlr. (31 d). Forewing dark brown, with irregular, glassy spots in the distal half. Hindwing reddish brown with dark distal margin and glassy spot at the apex, which on the under surface is prolonged as a band towards the inner margin (in many examples also on the upper surface). This rather rare species flies on the eastern slopes of the Andes of Colombia and Ecuador; it superficially resembles *Ituna lamirus* and also *Dircenna olyras* and *Napeogenes excelsa*, which occur in the same localities, but are distinctly smaller. — **sticheli** Hsch., from Eastern Peru, is very similar to the preceding, but is distinguished by a large red-brown triangle at the base of the forewing. The dark distal margin of the hindwing moreover is broader and the white spots on the under surface are larger. — **staudingeri** Godm. & Salv. (= *centralamerica Stgr. i. l.*), from Central America, is similar to the preceding, but has only one yellow-brown streak at the median of the forewing and smaller yellowish vitreous spots. The colour of the hindwing is yellow-brown. In its apex is placed on the upper surface only a small, transparent spot.

O. crathis Dbl. & Hew., from Venezuela, is similar to the preceding, and also to the following. The oblong spot at the base of the forewing is broader, but light yellow-brown. The vitreous spots are smaller and brownish. The hindwing is light brown with broad dark margin and 2 indistinct vitreous spots. — **theon** Bates (31 d). From Central America; here the vitreous spots are larger, and also the yellow-brown spot at the base of the forewing. Hindwing unicolorous yellow-brown with narrower dark distal margin and light discal spot on the under surface.

O. praestans Godm. & Salv. (31 e) recalls the somewhat larger *Ituna phenarete*. The forewing is vitreous with dark margins and oblique bands. The hindwing transparent yellowish with dark costal and distal margins. On the under surface white double spots are placed at the distal margin and 3 white dots at the costal margin of the hindwing. It inhabits north-eastern Colombia. — **insignis** Salv., from Central America, has red-brown colour at the anal angle of the hindwing and on the underside only 1 white dot at the costal margin.

O. translucens Hew., from western Ecuador, is the smallest and rarest species. It is almost diaphanous, only at the base slightly yellow, with dark margins and a transverse band on the discocellulars of the forewing to the distal margin. On the under surface small white dots are placed at the distal margin.

5. Genus: **Eutresis** Dbl. & Hew.

Here also belong only a few forms, of similar size and colouring to *Olyras*, but without the strongly sinuate margins. They likewise inhabit the mountains, from Peru to Central America.

E. hyperia Dbl. & Hew., the first described form and type of the genus, is very similar to the figured *theope* (31 e). It is somewhat larger, has broader dark margins and bands, and the base of the forewing and the whole disc of the hindwing are reddish yellow-brown. It flies in the mountains of Venezuela. — **hyspa** Godm. & Salv. (= *antioquensis Stgr.*) is a local form of *hyperia* from Ecuador and Colombia, which is distinguished by much weaker red-brown colouring, especially in the disc of the forewing. — **imitatrix** Stgr. (31 e) resembles the species of *Thyridia* and of the transparent *Aprotopos*. But it is very nearly allied to the preceding and differs chiefly by the absence of the red-brown colour on both wings, as well as by the blackish transverse band across the middle of the hindwing. It occurs on the eastern slopes of the Andes of Peru and Ecuador. — **theope** Godm. & Salv. (= *dilucida Stgr.*) (31 e). This is the Central American form of *hyperia*, from Costa Rica. It is distinguished especially by the paler margins and the narrower distal margin of the hindwing, which is proximally edged with yellow-brown.

6. Genus: **Athesis** Dbl. & Hew.

The species of this genus are similar to the preceding, but mostly considerably smaller. They are distinguished by the angled lower discocellular and the long cell of the hindwing. All are mountain species from the north-west of South America.

- clearista*. **A. clearista** Dbl. & Hew. (31e), from Venezuela, has vitreous wings with dark margins and two oblique bands over the discocellular and across the middle of the cell of the forewing. A streak along the median of the forewing and the veins in the disc of the hindwing are yellow-brown. The long antennae are black.
- acrisione*. **A. acrisione** Hew., a beautiful but rare species from Ecuador, is considerably larger; the apex of the forewing margined with yellow-brown. Across the end of the cell of the hindwing to the inner angle runs a black band, part of which is confluent with the distal margin. In the latter are placed also above large, white submarginal dots.
- dercyllidas*. **A. dercyllidas** Hew. (32a). The wings have the appearance of greenish glass; especially on the under surface the glassy spots are more strongly margined with green. Some of the dark margins and bands on the upperside are bordered with yellow-brown. On the underside they are yellow-brown with dark edges. In the pattern and the greenish colouring the species recalls *Colaenis dido*; it flies in Colombia and Ecuador. —
- demytus*. GODMAN and SALVIN designate as **demytus** a form from southern Ecuador with very narrow margins and bands.
- hewitsoni*. **A. hewitsoni** Srnka. This species was figured by HEWITSON as ♂ to *dercyllidas*, but recognised by SRNKA as a separate species. It differs in the brownish tone of the hyaline spots and the narrower margins and bands of both wings. In the oblique band across the end of the cell of the forewing is placed towards the distal margin another oblong hyaline spot.
- oligyrtis*. **A. oligyrtis** Hew. is a further form from Ecuador, similar to *dercyllidas*. It is said to have an indistinct band between the discoidal veins before the distal margin of the hindwing, and also 3 white dots at the costal margin; in addition a black band from the apex of the hindwing to the 1. median vein.

7. Genus: **Thyridia** Hbn.

In this genus, which DOUBLEDAY and HEWITSON call *Methona*, belong only a few larger species with transparent, black-marked wings and thin black antennae provided with stronger, yellow club. The cell of the hindwing is small and closed almost at right angles to the median. The species belong mostly to the plains and occur from Guiana to Argentina and westwards to the Upper Amazon.

- confusa*. **Th. confusa** Btlr. (= *psidii* Cr.) (32a). This species was long taken for the similar *psidii* of LINNÉ, which, however, belongs to quite another genus. The latter (pl. 34c) is easy to recognise, in addition to the venuration, by the small reddish dots at the base of the forewing. *confusa* has transparent yellowish wings with black margins and a transverse band on the discocellular of each wing, as well as a transverse streak through the cell of the forewing. It occurs on the Lower and Upper Amazon, and in Guiana, in the shady places of banks of rivers. —
- psamathe*. **psamathe** Godm. & Salv., from eastern Ecuador and Peru, is a local form with narrow bands and margins. According to GODMAN and SALVIN there is a corresponding form of *Dismorphia orise*, whose ♀ very nearly resembles that of *Th. confusa* and which occurs in the same localities as *psamathe* and is said likewise to have narrower bands and margins. —
- curvifascia*. **curvifascia** Weym., from Ecuador and the Upper Amazon, is a form in which the black at the base of the hindwing is extended beyond the point of origin of the 1. median vein.
- themisto*. **Th. themisto** Hbn. (32a). May be distinguished from the similar *confusa* by the absence of the broad transverse band on the discocellular of the hindwing. The larva according to W. MÜLLER lives on species of *Brufelsia*. It is deep velvety black with orange-coloured belts. The pupa is elongated, immovable, white-yellow with narrow orange-coloured transverse bands and black stripes and spots. The species lives in central and southern Brazil to Argentina. —
- megisto*. FELDER describes as **megisto** a form of the preceding from Bahia, which is said to be larger and to have the veins less margined with black. On the other hand the median band of the forewing is much broader and the distal margin of the hindwing irregular.
- singularis*. **Th. singularis** Stgr., likewise from Bahia, is smaller than *themisto* and has the inner margin of the hindwing not dentate at the 2. median vein and on the upper surface edged with white. The costal margin of the hindwing beneath is broadly yellow at the base and not interrupted with black on the precostal vein.

8. Genus: **Tithorea** Dbl. & Hew.

In this genus 2 quite different groups were formerly included and I am compelled to separate the second group under the name of *Hirsutis*. The principal differences are the following: In *Tithorea* the eyes are hairy, the tibiae of the middle and hindlegs are much longer than the femora. The ♂♂ have only 1 hair-tuft at the costal margin of the hindwing. In *Hirsutis* the eyes are naked; the tibiae of the middle and hindlegs are

not much longer than the femora and the ♂♂ have 2 hair-tufts. The species of the genus *Tithorea* have short broad wings with black ground-colour. They are not at all like the other Ithomiids and recall the *Danais*-species in the shape of the wings. They inhabit the north-west of South America to Panama.

T. humboldti Latr. (= *flavomaculata* Stgr.) (32a). A stately, velvety black butterfly with yellow *humboldti*. macular band across both wings and yellow subapical spots on the forewing. On the under surface the forewing has also yellowish stripes at the base and behind them a double spot. The hindwing has beneath at the base a yellowish streak and a further oblique band, as well as a brown spot outside the cell. In addition both wings bear a row of white submarginal spots. From the Cauca Valley in Colombia, according to LATREILLE also from the Amazons (?). — As **albomaculata** Hsch. I have designated a form in which the spots on the forewing are white. It appears to be commoner than the typical *humboldti*, and occurs on the eastern slopes of Ecuador and Colombia at elevations of ca. 1500 m. *albomaculata*.

T. cassandina Srnka, from Ecuador, is a smaller species, similar to *albomaculata*. The yellow spots *cassandina*. of the hindwing are very small, on the contrary the brown spot on the under surface at the end of the cell is very large. The submarginal spots on the underside are bluish white. The species recalls *Heliconius cassandra* Fldr.

T. bomplandi Guér. (32b) is the commonest species of the genus. On the upperside the forewing has *bomplandi*. besides the spots of *albomaculata* also the white streak and double spot of the underside. The hindwing is marked as in *pavonii* (figured on the upper surface), only proportionately larger. Comes mostly from Colombia, but also from Bolivia. — **descandollesi** Stgr., from the Cauca Valley in Colombia, is a form in which all the normally white spots of the upper surface are yellow. — **latreillei** Stgr., likewise from the Cauca Valley, has the yellow spots like *descandollesi*, but the band of the hindwing is much broader and behind it follows a further yellow macular band almost as in *humboldti*. On the under surface the brown spot at the discocellular is much smaller, but continued by 2 smaller spots. *descandollesi*. *latreillei*.

T. regalis Stich. (= *dagua* Stgr. i. l.) is very similar above to *bomplandi*, except that the white *regalis*. spots at the discocellular of the forewing are perceptibly larger. Beneath on the contrary the ground-colour is principally brownish except on the disc of the forewing and the bordering of the white spots and dots. The species comes from the Rio Dagua in Colombia.

T. pavonii Btlr. (32b) is the smallest species of the genus and above similar to *bomplandi*. Streak and *pavonii*. double spot at the base of the forewing are yellowish. On the under surface some of the spots at the end of the cell of the forewing are also yellowish and on the hindwing there are 2 complete rows of brown spots between the rows of white dots and the oblique band. BUTLER describes the species from Panama and compares it with the similar *Heliconius peruvianus*. But it occurs also in western Ecuador and Peru, as well as in Bolivia. In Ecuador it flies with the confusingly similar *Heliconius atthis* in the same localities.

T. tamasea Hew., from Colombia, has some similarity to *descandollesi*, but the yellow spots at the base *tamasea*. and at the end of the cell of the forewing are absent; moreover the yellow band of the hindwing is narrower and abbreviated. On the under surface both wings have whitish marginal dots. The forewing has a brownish band near the median and 2 brownish spots near the apex. The hindwing has further 2 brownish bands at the base and in the disc before the yellow spots. In an aberration from the same locality the band of the hindwing is reduced to 2 spots, of which the distal one is partly brownish. On the under surface almost the whole disc of both wings is brownish. — A further form, which I call **lugubris** *form. nov.*, has the upper surface *lugubris*. of the wings unicolorous black-brown, only the minute white double dots in the distal margin of both wings remain. On the under surface there are also a brown subapical band on the forewing and submarginal band on the hindwing. The form comes likewise from Colombia.

9. Genus: **Hirsutis** *gen. nov.*

The distinctive characters of this genus have already been given under *Tithorea*. It may further be divided into 2 large groups, namely: a) Wings short and broad, patagia black-brown. b) Wings elongate, patagia red-brown. The species of the first group recall *Danais* and *Tithorea* by their wing-contour; those of the 2. group have pronounced „*Lycorea-habitus*“. The species are distributed over the whole Neotropical region from Mexico to South Brazil. They are mostly found singly at the edges of the woods or at flowering shrubs with the corresponding species of *Melinaea*, *Mechanitis* and *Ceratinia*.

a) Patagia black-brown.

H. pinthias Godm. & Salv. (32b). A stately butterfly with broad wings. Forewing black-brown with *pinthias*. 12 irregular yellow spots. Hindwing red-brown with dark costal and distal margins. On the under surface the hindwing has in addition a dark oblique band from the apex to the inner margin, at the beginning of this

band is placed a larger, yellow spot. Both wings have beneath white distal-marginal dots. This form occurs especially in Panama and Costa Rica.

tarricina. **H. tarricina** Hew., from Colombia, is nearly allied to the preceding, but has at the apex of the hindwing 3 larger, yellow spots. — **hecalesina** Fldr. (32c), likewise from Colombia, has towards the dark distal margin of the hindwing proximally a complete band, composed of large yellow spots. Moreover the whole costal margin of the forewing is dark brown as far as the median. — GODMAN and SALVIN designate as **parola** a form from the Cauca Valley, in which the costal margin of the hindwing is only narrowly black, so that the dark spot at the apex stands out distinctly. — On the other hand I call **obscurata** ab. nov. an aberration from Colombia in which almost the whole hindwing except a spot at the inner angle is black-brown.

bonita. **H. bonita** Hsch. represents the *Pinthias*-group in eastern Ecuador. In this is placed on the hindwing between apex and discocellular a rounded blackish spot and on the under surface in addition 2 further spots in the disc, which form an oblique band with the subapical spot.

duenna. **H. duenna** Bates, from Guatemala and Honduras, differs strikingly from the preceding in a blackish oblique band from the apex of the hindwing nearly to the middle of the inner margin, as well as in a reddish, oblong spot at the base of the forewing. Moreover the collar is red-brown. BATES found the species only on the tableland of Duenas in Guatemala. — **monosticta** Godm. & Salv., from Panama and Costa Rica, is said to be distinguished from *duenna* by the absence of the dark band on the upper surface of the hindwing, but to have a macular band on the under surface.

irene. **H. irene** Drury, from Jamaica, is a form similar to *tarricina*, with only 2 yellow spots at the apex of the hindwing and 2 dark spots outside the cell, as well as a red-brown spot at the base of the forewing. — **umbratilis** Bates, from Panama, differs from the preceding by the absence of the red-brown spot at the base of the forewing and also of the yellow spots at the apex of the hindwing. The antennae are brownish, at the base blackish.

helicaon. **H. helicaon** Godm. & Salv. has larger, yellow spots on the forewing and 2 red-brown longitudinal spots at the base. The hindwing has narrower margins and no dark spot on the disc. The habitat is Costa Rica.

tagarma. **H. tagarma** Hew., from Bolivia, is a rare species with somewhat narrower wings, larger yellow spots and large red-brown spot at the base of the forewing. The hindwing is light reddish yellow-brown with narrower dark margin and yellow oblique macular band behind the discocellular. — In the local form **anachoreta** Thieme, from Peru, the yellow oblique band is shorter and broader, and behind the discocellular of the hindwing is placed an oblong blackish spot. The antennae are black. Collar red-brown.

b) Patagia red-brown.

hippothous. **H. hippothous** Godm. & Salv. (32c). This species forms the transition between the two groups. The patagia are still darker brown; the hindwing broad, but with macular longitudinal band and the antennae except at the base yellow-brown. The species differs from *irene* Drury in the two red-brown longitudinal spots at the base of the forewing and the band-like spots in the disc of the hindwing.

hermias. **H. hermias** Godm. & Salv. Markings as in the figured *neitha* Hpffr. Colour on the basal half of the forewing and on the hindwing vivid red-brown. The bands and spots in the apex yellow. The black marking of the hindwing is narrower. This is the form from eastern Ecuador, whilst *neitha* Hpffr. (32c), from eastern Peru, is distinguished by the yellow ground-colour of both wings, especially on the under surface. — **egaënsis** Btlr., from the Upper Amazon, is distinguished from the preceding by the rusty ground-colour of both wings and by the very small white marginal dots of the under surface. — **melanina** Hsch. is a form of *egaënsis*, likewise from the Upper Amazon. It differs in the absence of the yellow colouring and has already been mentioned under *Lycorea concolor*. — Whilst *hermias* and the allied forms have all a spear-shaped marking behind the end of the cell of the forewing towards the distal margin, in

hermina. **H. hermina** Hsch. (32d) the yellow oblique band of the forewing is broken up into about 10 smaller spots. This is a form of *hermias* from the eastern spurs of the Andes at the River Napo in Ecuador. — A further form from the same localities, **napona** Hsch., is distinguished by narrower distal margin to the hindwing and the absence of the blackish macular band.

brunnea. **H. brunnea** Hsch., from eastern Peru, is superficially similar to *melanina* in the absence of the yellow colouring. In the markings, however, it approximates to *napona*. It has likewise narrow distal margin to the hindwing and the dark macular band is only feebly indicated.

pseudonyma. **H. pseudonyma** Stgr. has similar markings to *hermias*. It may be recognised by having mostly only 3 isolated blackish spots in the disc of the hindwing. The yellow oblique band of the forewing

encloses at the end of the cell only a smaller dark spot and terminates at the distal margin in a more spear-shaped point. This species occurs in Bolivia, Paraguay and Argentina. — In southern Brazil occurs the similar *pseudethra* *Btlr.* (32 d), which is distinguished by the characteristic yellow longitudinal band of the hindwing *pseudethra*, and has already been mentioned under *Lycorea halia*. — I have described as *assimilis* *Hsch.* the form of *pseudonyma* without yellow colouring, in which it resembles *melanina* and *brunnea*. *Assimilis* is, however, easy to recognise by the 3 isolated spots in the disc of the hindwing. It occurs, like the similar forms, on the Upper Amazon. — As *lateflava* *form. nov.* I designate yet another form of *pseudonyma* with very broad yellow oblique *lateflava*, band on the forewing; this band is suddenly narrowed to a small, rounded point close to the distal margin. In it are placed in addition to the spot at the end of the cell 2 small dark dots before the distal margin. This form comes from Santa Cruz in South Bolivia.

H. harmonia *Cr.* (32 d). In the typical specimens of this species from Guiana the dark longitudinal band *harmonia*, of the hindwing is confluent with the dark distal margin into a large patch, as in *Lycorea ceres* and many Ithomiids. The forewing is pointed, especially in the ♂. The yellow oblique band ends in three points. — The form with normal *Lycorea*-habitus and separated bands is *mopsa* *F.* In this the macular band of the hindwing is narrowed towards the inner margin; ground-colour red-brown. It occurs in Guiana and on the Lower Amazon. — A local form with light yellow-brown ground-colour from the Antilles and Trinidad has been called by GODART *megara* (= *flavescens* *Kirby*). — According to GUPPY the larva of this form is black with white dots *megara*, and 2 long, immovable, antenna-like appendages on the 2. segment. It feeds by day on *Echites* sp. The eggs are similar to those of *Lycorea ceres*, yellowish with numerous impressions, and are laid singly on the underside of leaves.

H. cuparina *Bates* is unknown to me. According to the description it approximates to the following *cuparina*, species (*furia*), as the yellow oblique band of the forewing is said to terminate obtusely. BATES compares it with the common form from the Amazon and says that it is only to be found at the southern tributary of the Middle Amazon, the Tapajos.

In the following forms the longitudinal band of the hindwing is still more distinctly pointed proximally.

H. salvadoris *Stgr.* This large species resembles *hippobous*. It occurs also in Central America (San *salvadoris*, Salvador, Honduras), but has lighter, yellow-brown ground-colour and larger yellow spots. It approaches the following forms in the keel-shaped band of the hindwing.

H. furia *Stgr.* (32 d) may be distinguished from the similar species by the yellow oblique band of the *furia*, forewing, which terminates obtusely at the distal margin, and by the proximally pointed longitudinal band of the hindwing. It flies in Venezuela and Colombia. — In *furina* *Godm. & Salv.* the oblique bands of the forewing *furina*, are broken up into small yellowish spots. It is commoner and more widely distributed than the typical *furia*, occurring in western Ecuador and South Bolivia as well as in Colombia and Venezuela. — *flacilla* *Godm. & Salv.*, *flacilla*, from the Cauca Valley in Colombia, differs from the preceding in having 3 yellow spots at the apex of the hindwing, which are margined with black; also the base of the forewing is more broadly blackish and the brownish basal streak-spots are correspondingly smaller.

10. Genus: **Athyrtis** *Fldr.*

In size and markings the species of this genus are very similar to those of *Melinaea*, but are distinguished at once by the shorter antennae and the angled lower discocellular of the hindwing. (In the figure of *Ath. mechanitis*, pl. 33 a, the neurulation is indistinct).

The few forms of this genus are all very rare and occur only on the eastern slopes of the Andes from Colombia to Peru.

A. mechanitis *Fldr.* (33 a) has the markings almost as in *Mechanitis doryssus*, but is considerably larger *mechanitis*, and may be recognised by the angled lower discocellular of the hindwing. The base of the forewing and the hindwing are red-brown; the former with blackish apical half and 3 yellow macular bands, the latter with yellow and black macular band, as well as dark distal margin. Both wings with small white marginal dots. — In the local from *oberthueri* *Srnka*, from Ecuador, the yellow longitudinal band of the hindwing is absent, and the *oberthueri*, bands of the forewing are smaller. — In *salvini* *Srnka*, from eastern Peru, the red-brown colour is duller and *salvini*, extends on the forewing beyond the discocellular. Apex and distal margin are black-brown with yellowish subapical band. At the end and again in the middle of the cell there is a black spot. The hindwing has a central row of 5—6 black spots and narrow, dark distal margin. — In a local form from the Upper Amazon, which I call *amanga* *form. nov.*, the whole apical half of the forewing is black-brown. In this is placed in addition to the *amanga*, yellowish, very narrow subapical band a brownish band near the end of the cell. Of the two black spots in *salvini* the distal one is suppressed in the dark apical half.

distincta. **A. distincta** Hsch. Similar to *mechanitis*. The subapical band of the forewing is small, the median band is proximally curved and encloses a large black spot at the end of the cell; the proximal band consists only of a spot in the cell. The hindwing has on the under surface at the end of the cell a large yellow spot which shows through slightly above.

11. Genus: **Melinaea** Hbn.

This genus contains numerous stately species of rather large size and mostly of red-brown ground-colour. They may be recognised by the long yellowish antennae and the long cell of the hindwing, with apparently 4-branched median. The Melinaeas are distinguished from the often very similar *Mechanitis*-species by the normal forelegs, which in *Mechanitis*-♂♂ are reduced to a knob and which in the ♀♀ have 4 joints to the tarsi. Moreover *Mechanitis* has much shorter antennae. The *Heliconius*-species, which are likewise often very similar superficially to *Melinaea*, are recognised by the small cell of the hindwing and the absence of the hair-brushes in the ♂♂. The *Melinaea*-species are distributed over the whole Neotropical region from Mexico to Argentina, but are mostly not very abundant, occurring singly in company with the corresponding species of *Mechanitis* and *Ceratinia*. The ♂♂ have 2 pairs of hair-tufts, of which the first (at the base) is pencil-shaped, the 2. (at the end of the cell) is broad and comb-like.

- zaneka*. **M. zaneka** Btlr. (= *dora* Streck.) (32c). This beautiful, large species is distinguished from most of the other forms by the absence of the dark longitudinal band in the disc of the hindwing. The forewing shows the *Lycorea*-habitus, but without the yellow subapical spots. The dark distal margin of the hindwing is narrow and only present in the apical half. The species occurs only in eastern Ecuador, mostly in the dusk of the primeval forest on undergrowth. — In ab. **maculosa** Hsch. the ground-colour is darker red-brown. The hindwing bears in addition one or two incomplete, dark longitudinal bands, as in *menophilus*. — In a further interesting aberration, which I call ab. **discurrens** ab. nov., the ground-colour is likewise darker. At the distal margin of the hindwing are placed large dark brown projections and between the end of the cell and the apex a dark zigzag line runs from the costal to the distal margin.
- menophilus*. **M. menophilus** Hew. (= *ishka* Btlr.) (32c). A widely distributed species; it is smaller than *zaneka*, has a broader, dentate oblique band on the forewing and on the hindwing 2 blackish macular longitudinal bands. It occurs in the eastern Andes from Colombia to Peru. — In the local form **cocana** Hsch., from the upper Napo in Ecuador, the two bands of the hindwing are united into a large spot, in which the veins still remain finely brownish. — In the local form **maenius** Hew. the ground-colour is dark red-brown and the black bands and patches are very large, partly confluent. From the Upper Amazon (Teffé). — As **tarapotensis** form. nov. (Bang.-H. i. l.) I designate another form with duller ground-colour from Tarapoto on the Upper Amazon. Here the oblique band of the forewing is narrower; the dark bands of the hindwing are larger and diffuse. On the under surface the dark markings at the costal margin and in the disc of the hindwing are absent. — **chíncha** Druce is a form of *menophilus* in which the yellow oblique band of the forewing is absent; it has already been mentioned with the similar forms under *Lycorea concolor*. It comes like these from eastern Peru, and has the black patches exactly as in *menophilus*.
- messenina*. **M. messenina** Fldr. has the appearance of *Mechanitis messenoides* Fldr. (33f), the forewing similar to *menophilus*, the hindwing is however black-brown except for a red-brown subapical spot. In eastern Colombia and Ecuador. — **mothone** Hew. (= *cydippe* Salv.) (32e). Here the yellow oblique band is absent. The colour consequently appears plain black-brown with broad red-brown-oblique band with black spots in it. The following from other genera have very similar markings: *Mechanitis deceptus*, *Ceratinia bicolora* and *semifulva*, *Hypocada fallax*, and also *Heliconius aristiona* and their varieties. *mothone* occurs on the eastern slopes of the Andes from Colombia to Peru and Bolivia in slightly differing forms.

All the preceding species of *Melinaea* have a broad black apex to the forewing. The following forms have all a yellow or brownish subapical macular band.

- marsaeus*. **M. marsaeus** Hew., from the Amazons, is similar to *menophilus*, but has a narrower, curved yellow oblique band, which has proximally another spur behind the middle. The black spots at the end of the cell and in the basal part are joined together. In the black apical part are placed 3 oblong red-brown spots.
- divisa*. **M. divisa** Stgr. is similar to the preceding in the markings. The yellow oblique band is however suppressed by the red-brown ground-colour. Moreover a yellow macular band is placed in the apex. — In the first described *lucifer* **lucifer** Bates (33a) the two longitudinal bands of the hindwing are confluent. Both forms occur on the Upper Amazon.
- flavosignata*. **M. flavosignata** Stgr. (= *egesta* Godm. & Salv.) has a broader yellow oblique band than *menophilus* and a yellow macular band in the apex. The habitat is Colombia and East Peru. — In **hicetas** Godm. & Salv. (32e) the yellow oblique band is suppressed by the red-brown ground-colour. Examples, however, occur like the

figure, in which some yellow colour is to be seen at the costal margin. — In *magnifica* Hsch. the subapical spots have also become completely red-brown. — *orestes* Salv. is said to be similar to *lucifer*, without the yellow spots at the costal margin and in the apex of the forewing. The hindwing is as in *hicetas*. — *phasiana* Btlr. (33a) differs from *magnifica* in the red-brown, black-margined apex. It is very similar to *Mechanitis mazaesus*. All these forms come from the Upper Amazon, from eastern Peru. — *macaria* Godm. & Salv. has the forewing as in *flavosignata*, except that the two oblong spots at the base are considerably larger. The hindwing has a large black spot as in *lucifer* and *messenina*. From North-East Colombia.

M. mneme L. (= *crameri* Godm. & Salv.) (33a). has likewise a black-brown spot on the hindwing, which, however, extends to the costal margin, the base and a subapical spot remain red-brown. The oblique band of the forewing is narrower and in the middle dentate; the spots at the base are rounded. Flies only in Guiana and on the Lower Amazon.

M. mediatrix Weym. (33b), a superficially very similar, but sharply separated species, occurs on the contrary both on the Upper and Lower Amazon and also in Guiana. The forewing has at the base a pointed double spot, the hindwing at the costal margin a red-brown band. Moreover, the hindmargin of the forewing is broadly black, not so in *mneme*. — In the form *mauensis* Weym. the black patch of the hindwing is broken up into 2 bands. — In a further form, which I call ab. *anina* ab. nov., the yellow oblique band of the forewing is broken up into 2 small spots: one at the end of the cell, the other (oblong) in the black apical half at the distal margin. From British Guiana.

M. satevis Dbl. & Hew. (33a) has the markings on the forewing as in *mneme*, but the ground-colour is a peculiar wine-red, as is the case in only a few other forms, such as *Melinaea madeira* and *Ceratinia viola*. The hindwing is wine-red with dark distal margin and the indication of a longitudinal band in the apex, which is more distinct on the under surface. On the underside the distal margin has small white marginal dots as in *mneme*. Bolivia.

M. maelus Hew. (= *pardalis* Bates) has markings and colouring like *cydon* Godm. & Salv. (33b), but is distinguished by a yellow oblique band across the end of the cell of the forewing nearly to the distal margin, which is absent in *cydon*. A very similar pattern recurs in *Ceratinia castanea* and *anastasia*. All these species fly on the Upper Amazon. HEWITSON describes under *maelus* another form, which he considers a variety, but which belongs to quite another species. I call it:

M. manga spec. nov. It has a lighter, red-brown ground-colour, a dark apex to the forewing with red-brown spots and 2 very small yellow ones. The basal half and the hindwing are as in *marsaeus*, except that the median band is stronger and wedge-shaped. From the Amazons.

M. madeira (Stgr. i. l.) (33b) has a yellow oblique band like *maelus*, but this is extended into the cell and to the 1. median vein. The ground-colour is wine-red, the apex dark. The median band of the hindwing consists of 3 larger oblong spots and 1 small one. This form from the Upper Amazon (Manicoré) appears to be commoner than *maelus* and *cydon*.

M. maeonis Hew., from the upper Napo in Ecuador, has a pattern similar to that of *maelus*, but the whole apical half of the forewing is black-brown except for the narrow transverse band and the 3 large subapical spots. The hindwing has a dark distal margin and a curved macular band, which is connected at the apex with the dark costal margin. — On the Ucayali in Peru occurs a nearly allied form, which I call *zamora* form. nov. (*Bang-H. i. l.*). Here the ground-colour is much lighter, especially before the middle of the wing, and the hindwing is distinguished by a light yellow longitudinal band between the costal margin and the dark median band. The distal margin is only very narrowly edged with dark.

M. mnemopsis Berg (= *boliviana* Stgr. i. l.) (33d). This species has only the beginning of the yellowish and dark bands of *zamora* at the apex of the hindwing. The distal margin is broadly edged with blackish, beneath with distinct white dots. On the forewing the yellow median band is divided into 2 spots. This large form comes from Peru and Bolivia.

M. scylax Salv. (= *ribbei* Weym.) (33c), from Costa Rica, has a unicolorous yellow-brown hindwing with narrow dark distal margin. The forewing has the usual bands and spots with large black spots in the disc.

M. lilis Dbl. & Hew., from Venezuela, and *imitata* Bates (= *tachypetis* Fldr.) (33c), from Central America and Mexico, are very closely allied. In *lilis* the median band of the forewing is continuous and brownish; in *imitata* it is yellow and divided. Moreover, in *lilis* the central subapical spot is much larger. — In the genus *Ceratinia* there are likewise 2 very similar forms from Central America and Venezuela: *dionaea* and *fraterna*, and again *Heliconius telchinia* and the allied forms are confusingly similar to the two Melinaeae.

M. ethra Godt. (= *phasis* Fldr.) (33d). This typical South Brazilian species may be at once recognised by the yellow longitudinal band of the hindwing and the isolated yellow subapical spots of the forewing. It has been already mentioned under *Lycorea halia* with the similar forms. It especially resembles *Heliconius narcaea* (= *eucrate*), with which it flies together.

- thera*. The small **M. *thera*** Fldr. has also a similar pattern, but approximates more nearly to ***mnasias*** Hew. (33 d).
mnasias. *thera* is the same size as *mnasias* and has the same markings with the addition of a large white subapical spot on the forewing and small white marginal dots. It has further a yellow longitudinal band on the hindwing like *ethra*. The typical specimens of *mnasias* from the Amazons have white marginal dots and 2 larger, yellow spots in the end of the cell and before the oblique band. In the example figured from British Guiana these spots are
tecta. absent and the marginal spots are yellow. I consequently call this local form ***tecta*** form. nov.
- equicola*. **M. *equicola*** Cr. is very similar to the figured *Mechanitis equicoloïdes* (33 e). The black spots at the end of the cell of the forewing and at the distal margin form a band and before this is placed a yellow oblique band. The black spot between the median veins in the disc is absent. On the hindwing the median band and the very broad distal margin are confluent at the inner angle.
- idae*. **M. *idae*** Fldr. (33 c) is an entirely isolated species from Colombia and Ecuador. The yellow apical spots are as in *mneme*, on the other hand the yellow oblique band is abbreviated and towards the base widened. The hindwing is conspicuous by the absence of the longitudinal band and by the very broad dark distal margin. On the under surface both wings have small white distal-marginal dots. The example figured is from Colombia; the specimens from Ecuador differ in the smaller size and narrower distal margin of the hindwing, which is sharply defined proximally. *Ceratinia philetaera* and *Heliconius clara* have similar markings to *idae*.
- paraiya*. **M. *paraiya*** Reak. (33 c). Between the yellow subapical and median band are placed 2 spots in the black apical half of the forewing and in the cell two black spots. The hindwing has dark distal margin and a macular band. This common species occurs in Guiana and on the Amazons as well as in Central and South
egina. Brazil; it is very similar to *Mechanitis macrinus* and also to *Heliconius metaphorus*. — In the allied ***egina*** Cr. the median spots of the band of the hindwing are merged with the distal margin into a large spot. In the forewing there is a third yellow spot between the two median ones. This form flies especially in Guiana and on the Middle Amazon.
- messatis*. **M. *messatis*** Hew. (33 d) forms with the two following varieties a small separate group which closely resembles *Heliconius ismenius*. Particularly striking are the numerous white spots on the forewing. The median band of the forewing is only developed in the apical half. *messatis* occurs in Colombia, whilst the nearly allied
parallelis. ***parallelis*** Btlr. flies in Panama. The latter has a complete longitudinal band on the hindwing. — ***dodona*** Hpffr.,
dodona. from Bolivia, has on the forewing besides the marginal dots yellow instead of white spots. The hindmargin of the forewing is black, the band of the hindwing complete.

12. Genus: **Mechanitis** F.

The differences between this genus and the often very similar *Melinaea* have already been given under the latter. The species are smaller throughout, have long, narrow wings and shorter antennae. In colour and markings the *Lycorea-habitus* predominates.

This genus has a very wide range; species occur almost everywhere from California to Argentina; many forms, especially in the primeval forests of the plains, occur at times in such enormous numbers as are otherwise attained only by certain colourless Ithomiids. At such times the bushes at particular places are literally covered with them. *Mechanitis* also produces every possible variety of colouring. Most forms vary so much that one can arrange an almost uninterrupted series of transitions between all the varieties. Many specimens are indeed difficult to place with a definite species, and hybridisation apparently occasionally takes place between nearly allied forms.

- polymnia*. **M. *polymnia*** L. (33 e). Typical examples of this very variable species, with small subapical spot and large yellow median band on the forewing, occur especially in Guiana and on the Lower Amazon. The two black spots at the end of the cell are mostly confluent. The median band of the hindwing is broad and dentate.
chimbora-
zona. — ***chimbrazona*** Bates is a local form from the western slopes of the Andes in Ecuador, with very broad yellow median band at the costal margin of the forewing, which is suddenly narrowed into a streak behind the cell. The ♂♂ have in the hindwing a very broad black median band; in the ♀♀, however, this is only
casabranca. present at the apex. — ***casabranca*** Hsch. is the local form from Central and South Brazil, which is easy to recognise by the characteristic yellow longitudinal band in the hindwing. Moreover the yellow subapical spot in the forewing is absent and the double spot at the end of the cell is widened at the costal margin. The median
caucaënsis. band of the hindwing is narrow. — I designate as ***caucaënsis*** form. nov. the form from the Cauca Valley in Colombia. This is distinguished by dark brown-red ground-colour, large yellow band-spot and small black spots at the end of the cell of the forewing. The black spot in the cell is produced into a point. The broad median band of the hindwing in the ♂ is almost edentate.
- equicoloïdes*. **M. *equicoloïdes*** Godm. & Salv. (33 e). This and the following form differ from all the others in the larger size and more powerful build. But the marking is similar to that of *doryssus*. Very striking are 2 black, isolated spots at the costal margin of the hindwing. Whilst the form *equicoloïdes* from the Upper Amazon

has on the hindwing the usual pattern with black, dentate longitudinal band and similar distal margin, in the allied *sylvanoides* Godm. & Salv., from Guiana, the two bands are confluent at the inner margin. The *sylvanoides* latter form is said to resemble *Heliconius sylvana*.

M. pannifera Btlr. (= *plagifera* Stgr.) (33e). Here the median band and the distal margin of the hindwing are merged into a black patch as in *Melinaea cocana*. The costal margin and apex remain red-brown. The yellow oblique band of the forewing is narrower than in *polymnia*, at the apex there is mostly a yellowish spot. This form occurs both on the Amazons and in Guiana and Venezuela.

In **M. messenoides** Fldr. (33f) the black patch of the hindwing also occupies the whole costal margin, moreover the base of the forewing is also black, and the yellow subapical spot is absent. This species corresponds exactly to *Melinaea messenina*. On the eastern slopes of the Andes, from Colombia to Peru. — Just as in the *Melinaea* there is also in the *Mechanitis* a form without the yellow oblique band of the forewing, namely **deceptus** Btlr. (= *mothone* Salv.). This is deceptively similar to *Melinaea mothone*. It occurs on the Upper Amazon in Ecuador, Peru and Bolivia. But there are also transitions to the preceding form, in which yellowish colour is present at the discocellular of the forewing. — In **meterus** Hew., also from the Upper Amazon, a form which is otherwise marked like *deceptus*, there are 2 more round yellow spots at the distal margin of the forewing. — In **nigroapicalis** Hsch. the base of the forewing and the costal margin of the hindwing are red-brown. In many specimens the median band of the hindwing and the distal margin are completely separated. — **mazaesus** Hew. (34a) has in addition a red-brown patch in the apex of the forewing. — In **phasianita** Hsch. this subapical spot is very large and the black marking in the apex is considerably less extended, so that this form has much the appearance of *Melinaea phasiana*. It occurs on the Upper Amazon and its tributaries in Peru and Ecuador. — **lucifera** Hsch. again forms a transition to the forms with yellow oblique band and subapical spot. The marking is as in *phasianita*, but the subapical spot and the oblique band are yellow, with brownish margin. This form, which may be recognised by the strikingly large subapical spot, likewise occurs on the Upper Amazon in Peru.

M. visenda Btlr. has a narrower, yellow oblique band on the forewing, which does not reach to the end of the cell; on the other hand broader, black bands at the inner margin of the forewing and in the disc of the hindwing, as well as narrow distal margin to the hindwing. It flies on the Lower Amazon and Tapajos.

M. fallax Btlr., from Colombia, has likewise a narrower, yellow oblique band and small black spots at the discocellular of the forewing, as in *messenoides* Fldr. The costal margin and apex of the hindwing are red-brown. The black median band is confluent with the distal margin.

M. egaënsis Btlr. (34a), from Ega on the Upper Amazon, has dark red-brown ground-colour. The oblique band is large and one half of it brownish. The black spot at the base is large and wedge-shaped. The hindwing has broad median bands and strongly dentate dark distal margin. — **obscura** Btlr. is a very dark form of *egaënsis* with broader black bands and occurs at the same localities. — In **plagigera** Btlr. the black bands and patches are much narrower than in *egaënsis*; the subapical spot is smaller and yellow, like the more elongated band of the forewing. From Prainha on the Amazon.

M. truncata Btlr. belongs to a small group with shorter wings, in which the apex of the hindwing is almost truncate. It has a pattern like *egaënsis*. The wings are red-brown, the black streak at the inner margin of the forewing is long. In the apex of the forewing is placed a large yellow spot with brown margins. The form varies very much and flies together with *egaënsis* and *obscura* near Ega. — **juntana** Hsch. (34a) has a very narrow, strongly dentate yellow band on the forewing, a similar black median band and very narrow margin to the hindwing. The ground-colour is light yellow-brown. The form flies in eastern Ecuador and Peru, at the base of the Andes. It is at times very common at flowering shrubs. — A nearly allied form is **huallaga** Stgr. (34a), from eastern Peru. It bears, however, a greater resemblance to *phasianita* and *olivencia* on account of the absence of the yellow markings and the smaller extent of the black ones on the forewing. It is easy to recognise by the narrow distal border of the hindwing. — The similar **olivencia** Bates has broader, black bands and patches, as well as a yellow spot at the discocellular of the forewing. It occurs likewise on the Upper Amazon. — **jurimaguënsis** Stgr. has lighter, red-brown ground-colour than *olivencia* and the yellow spot at the discocellular of the forewing is absent. The median band of the hindwing is broadly dentate and sometimes confluent with the broad distal margin.

M. proceris Weym. This small species has the appearance of *juntana*. It may, however, be recognised by the black distal margin of the hindwing being broader and the black streak at the inner margin of the forewing terminating obtusely. From Tonantins on the Upper Amazon.

With **M. doryssus** Bates (33f) we pass to another group of forms which are distinguished by long, narrow wings and mostly inhabit Central America or the adjoining north-west of South America. They have mostly

a similar pattern as in the preceding forms, i. e. on the forewing *doryssus* has in the black apical half an undulate yellow oblique band and a subapical spot. The basal half of the forewing and the hindwing are red-brown; the former with 2 black spots and black margins, the latter with narrow median band and distal margin. In Central America, from Costa Rica to Honduras. — REAKIRT designates as **utenaia** a form from Honduras in which the oblique band of the hindwing is broken up into 2 spots. — **veritabilis** Btlr. is the form from Colombia and Venezuela, with narrow wings. Here the club of the antenna is yellow-brown, in *doryssus* only the base is dark. The ground-colour of the wings is darker. This form flies also on Trinidad. — **saturata** Godm. & Salv. is a similar, larger form from Mexico with very narrow yellow bands in the forewing, broader black apex and large basal spots. — **labotas** Dist. is a very light form from the volcano Chiriqui with yellow colour at the end of the cell of the forewing and partly also at the base of the hindwing. Especially striking is the ♀ of this local form, in which the black median band of the hindwing is only indicated at the apex, and is sometimes entirely absent.

lycidice. **M. lycidice** Bates (34a). Smaller than *doryssus*. The forewing black with 3 yellow oblique bands, and also red-brown base and 2 red-brown spots at the inner angle. The hindwing has broader, black median band and before it an indistinct yellow longitudinal band. In the ♀ the black band is proximally incomplete. **eurydice.** In Central America, from Costa Rica to Honduras. — **eurydice** Hsch. is a similar form from Peru. The black marking in the disc of the forewing is reduced. The yellow subapical spot is prolonged into a band. The median band is narrower and more strongly dentate. The hindwing has a broad yellow longitudinal band and in the ♀ also the black macular band is complete. Antenna yellow-brown with dark base, in *lycidice* dark with yellowish club. — **doryssides** Stgr. is very similar to the preceding, but has no yellow longitudinal band in the hindwing and the spots in the disc of the forewing are brownish yellow. — **ovata** Dist., from Costa Rica, has broader and more roundish wings than *lycidice*. The macular bands of the forewing are narrower. The black longitudinal band of the hindwing is only present in the apex and the yellow marking before it is entirely absent. — In **isthmia** Bates (34b), from Panama and Costa Rica, the black colour occupies almost the whole of the forewing. The yellow median band is broken up into 2 spots. The black median band of the hindwing is very broad; yellow colour is absent. In the ♀ the median band is only indicated by a spot before the apex. — In a form from Honduras, which I call **arcana** form. nov., the hindwing has a broad yellow longitudinal band and also in the ♀ a complete black band behind it. — **californica** Reak. In this form from California the yellow spot on the discocellular of the forewing is said to be much narrower than in *isthmia*; behind the end of the cell a yellow band runs from the costal to the hindmargin.

mantineus. **M. mantineus** Hew. (34c) is a species very different from the preceding forms, which is distinguished by the almost complete absence of red-brown, even on the hindwing, and by the absence of the yellow subapical spot in the forewing. The forewing has only one red-brown spot at the inner angle and the hindwing a fine red-brown line before the distal margin. In addition to the yellow median line the forewing has 2 yellow spots and a streak on the median vein. The hindwing has a yellow longitudinal band. This interesting species, which recalls *Heliconius nattereri*, occurs only on the western slopes of the Andes in Ecuador, but is not rare.

franisi. **M. franisi** Reak. (33f) and the two following forms are nearly allied to *polymnia caucaënsis*. The ground-colour of *franisi* is reddish yellow-brown. The large yellow median spot in *caucaënsis* is here separated by a black macular band into 2 parts, of which the proximal one is partly yellow-brown. — In the form **peruana** Weym. the median band of the forewing is confluent with the distal margin; hence there remains of the yellow-brown ground-colour only a longitudinal band pointed towards the apex in the otherwise black-brown wing. **menapis.** — In the form **menapis** Hew. (33f) the black colour is still further increased, so that often only 2 small red-brown spots at the base of each wing remain. Almost all transitions between the 3 forms are found. They fly in Colombia, especially in the Cauca Valley.

elisa. **M. elisa** Guér. has the forewing similar to that of *isthmia*; the two yellow spots at the end of the cell of the forewing (the remains of the oblique band) are here still further reduced and are placed near to the costal resp. distal margin. On the other hand the two spots in the disc are enlarged. The zigzag band of the hindwing and the distal-marginal band are narrow. On the Upper Amazon and its tributaries in Ecuador, Peru **meneceles.** and Bolivia. — **meneceles** Hew. is a form from the Amazon with small yellow spots in the forewing and a small red-brown spot below the yellow one near the inner angle. The hindwing has only the beginning of the median band in the apical area. — In **ocona** Druce (= *vilcanota* Rüb.) (34b) the ground-colour in the ♂ is lighter yellow-brown. The yellow spots and the costal margin of the hindwing are semitransparent. Between the two oblong yellow spots at the end of the cell and the distal margin is placed another oblong yellow spot, so that here the usual oblique band is restored. The typical specimens come from the Upper Amazon, from Peru. At the Upper Napo in Ecuador the form is similar to *elisa*, except that in the forewing the yellow double spot of *ocona* is still present.

In the following forms the two proximal yellow spots of the forewing are united into a broad oblique band; the median band is only indicated by a few dots or is entirely absent.

M. macrinus Hew. (= ♀ *numerianus* Fldr.) (34b) has mostly 3 oblong yellow spots in the black apical third of the forewing as a remnant of the oblique band at the end of the cell. Between the median and its first branch is generally placed another, triangular black spot, especially in the ♂. The latter has moreover in the disc of the hindwing above a black longitudinal band, which is indicated beneath and in the ♀ only at the apex, or the black band is entirely absent beneath also. This species is deceptively similar to *Heliconius metaphorus*, with which it also occurs together. The examples from Colombia are distinguished by large black spots in the basal part of the forewing and broad black longitudinal band on the hindwing; those from Panama and Costa Rica have narrower wings, spots and bands. The specimens from Ecuador on the other hand have a bright yellow oblique band and small yellow spots in the forewing; the black spot at the median is mostly absent.

M. nessaea Hbn. (34b) differs from *macrinus* in the yellow longitudinal band of the hindwing and the two yellow dots at the end of the cell and the distal margin of the forewing. The species is especially common in Central Brazil. — **sulphurescens** Hsch., from Bahia in Brazil, forms the transition to the following subspecies. It differs from *nessaea* in the absence of the two yellow median dots; from *lysinnia* in the yellow instead of white subapical spot. — **lysinnia** F. (34b) is distinguished from *nessaea* by the white subapical spot and the absence of the yellow median dots in the forewing. — In ab. **albescens** Hsch. there is a white triangular spot at the distal margin of the forewing and on the under surface the subapical spot is surrounded by a white macular band, which shows through above. — The larva of *lysinnia* is blue-grey with white tubercles and black stigmata. Pupa shiny gold-yellow, with a silver gloss on the ventral side, and with black dots and lines. — *lysinnia* is one of the commonest species of *Mechanitis* and flies principally in Central and South Brazil.

13. Genus: **Aprotopos** Kirby.

Aprotopos is distinguished from the very similar *Thyridia*, as *Mechanitis* from *Melinaea*, by the aborted forelegs, from *Mechanitis* by the shorter cell. The species of this genus may be recognised superficially by 1—2 red-brown dots at the base of the forewing.

The few species have mostly a wide distribution, but are almost everywhere only taken singly.

A. melantho Bates (34c). This Central American species differs from all the others in the intense colouring of the wings. The normally vitreous spots of the forewing are almost entirely covered with black. The hindwing is dark red-brown with black distal margin and spot at the end of the cell. — In a form from the volcano Chiriqui, which I call **randolis** *form. nov.*, the whole apex of the hindwing as far as the end of the cell is black-brown except for a small red-brown streak.

A. aedesia Dbl. & Hew. (34c) has the same scheme of markings as *melantho*, but the vitreous spots of the forewing are much larger and especially at the base yellow-brown. The disc of the hindwing is likewise light yellow-brown, not so red-brown as in the figure. The black spot at the end of the cell is connected with the costal margin. Especially in Colombia and Venezuela.

A. ceto Fldr. (= *colombiana* Godm. & Salv.). This rare species has the markings as in *psidii*, on the other hand a brownish ground-colour similar to *aedesia*. Colombia.

A. psidii L. (34c). The similarity of this species to *Thyridia confusa* has been already mentioned under the latter. It occurs in Guiana and on the Lower and Upper Amazon, to the Andes of Peru and Ecuador. Specimens from the first named districts have broader black margins and bands; those from Ecuador and Peru have been designated **ino** by FELDER.

A. hippodamia F. (= *pytho* Fldr.), from Central and Southern Brazil, is a very similar, but smaller species with broader bands on the forewing and narrower ones on the hindwing. — **pallida** Godm. & Salv. is a form with brownish vitreous spots, similar to *ceto*; in Central Brazil.

14. Genus: **Callithomia** Bates.

In the species of this genus not the lower discocellular but the middle one is angled. The cell is long and extends almost to the margin. They are mostly medium-sized species, which occur especially in the north-west of South America and also in Central America.

C. hezia Hew. (36b) has very broad wings and strongly recalls *Hirsutis pinthias* in the marking. There occur here as there also the corresponding varieties, in which a yellow macular band is present on the hindwing. *hezias* is the commonest form, from Central America, with black-brown, yellow-spotted forewing and red-brown hindwing with dark apex. — **hedila** Godm. & Salv. is a form from Guatemala with larger, partly

confluent yellow spots in the forewing. On the hindwing the black marking is broader and occupies nearly half the wing. — In *tridactyla* Dew. (36 b), from Colombia, there is a yellow macular band behind the discocellular of the hindwing, similar to that of *Hirsutis hecalesina*, and the base of the hindwing is black-brown.

phagesia. **C. phagesia** Hew. (36a), from Ecuador, has similar markings; at the base of the forewing there is a red-brown stripe, and the spots are larger and dirty white. In the hindwing the area before the apex is transparent whitish.

megaleas. **C. megaleas** Godm. & Salv., from Panama, is said to have in the forewing a red-brown base, 6 yellow submarginal spots and a yellow oblique band. The hindwing is red-brown with narrow black distal margin.

schulzi. **C. schulzi** Hsch. (36 b), from the Lower Amazon, has large yellow spots in the forewing, and the basal third red-brown. The hindwing has a median macular longitudinal band and large marginal teeth with yellow dots. In the ♂ the anterior half of the hindwing is transparent yellowish, in the ♀ red-brown. — In *alexirrhoë* Bates, from the Upper Amazon, near S. Paulo, the ground-colour is darker red-brown. The hindwing is not yellowish-transparent and the marginal dots are white. — **zeuxippe** Bates, from the Cupari (a tributary of the Amazon), has at the base of the forewing broad black margins. The apex is dark brown, with 3 yellowish spots and red-brown margins. — **thornax** Bates, from the Upper Amazon, near Tabatinga, has blackish apex with 4 yellowish spots and 6 brownish marginal spots. Hindwing with black teeth at the distal margin. — **butes** Godm. & Salv., from the lower Napo in Ecuador, is said to be similar to the preceding, but to have yellowish spots in the apex of the forewing and a broad, dentate black distal margin to the hindwing. — *philomela*. **philomela** Godm. & Salv., from Colombia, is said to approximate to *zeuxippe*, but to have narrower forewing, whilst the hindwing is semitransparent with black apex. The black macular band is placed nearer to the lower end of the cell. — The last 5 forms all intergrade more or less with one another, being apparently local forms still in course of development, so that it is very difficult to refer the transitional specimens to the individual forms. — On the Ucayali in Peru there is further a peculiar form, which I call **infuscata** form. nov. Here the forewing is yellow-brown with dark margins and in addition to the black median spot in the cell a roundish spot is placed in the end of the cell and 3–4 oblong spots in the apical third. The hindwing has 2 macular bands, in the disc and at the anal angle. This form recalls *Hyposcada rezia*.

hydra. **C. hydra** Fldr. (= *valera* Stgr.), from Venezuela, has blackish forewing with 3 yellow macular bands and brownish base. The hindwing is red-brown with dark distal margin. — In the somewhat larger *beronilla* Hew. (36 c), from Colombia and Ecuador, the central macular band is absent and the proximal one is not divided by a triangular black spot, as in *hydra*. — The nearly allied **panamensis** Godm. & Salv., from Panama, has a broad yellow oblique band, in which several roundish black spots are placed. The hindwing is broadly black at the apex and distal margin.

procne. **C. procne** Godm. & Salv., from Colombia, is said to have the apex of the forewing black as far as the end of the cell, and a broad yellow oblique band, which is divided by a red-brown stripe over the 2. median vein.

villula. **C. villula** Hew. (36 c). This interesting species has exactly the markings and colouring of certain *Ceratinia*, e. g. *praxilla* and *ocna*; but it may be recognised by the angled middle discocellular, resp. not angled lower one. On the under surface the hindwing has a white double spot at the costal margin near the middle and 6 white distal-marginal dots. Colombia.

15. Genus: **Ceratinia** Hbn.

This genus contains numerous species of very varied appearance, mostly of medium size. It may be recognised by the very long cell of the forewing (especially in the ♂) with angled lower discocellular, yet there are differences in the neurulation even in specimens of the same species. The species of this genus occur from Mexico to Brazil and Argentina. Many forms of the plains are at times very common, whilst others from the valleys of the Andes are quite local and rare. The wing-pattern and colouring in *Ceratinia* is very varied. Although the *Lycorea*-habitus predominates, yet there are also many forms with vitreous or otherwise marked wings, so that similarities to almost all the markings which occur in other Ithomiid-genera may be found.

polymnides. **C. polymnides** Hsch. The marking is similar to that of *Mechanitis polymnia*, with broad yellow median band, without subapical spot on the forewing and with 2 black-brown zigzag bands in the disc and at the anal angle of the hindwing. Upper and lower surface are without distal-marginal dots. In Central Colombia. — In **menans** Hsch., from the same localities, the forewing has moreover 6 yellow distal-marginal dots, which are largest in the apex. In the ♂ the costal margin of the hindwing is lighter and transparent.

C. amica Weym., from Colombia and Ecuador, is similar to *polymnides*, but has only 3 black dots *amica*. in the disc of the hindwing and a narrow black distal margin. The yellow transverse band of the hindwing is only half as broad. — The similar **baana** Druce, from Peru, is said to be distinguished among other details *baana*. by white marginal dots on the under surface, which are wanting in *amica*.

C. mansuetus Hew., from the Upper Amazon, has similar markings to *moebiusi* following hereafter. *mansuetus*. The wings are shorter and more rounded. The forewing has in addition 3 yellow dots at the distal margin and the hindwing 4 black spots in the disc, whilst the narrow distal border is strongly dentate at the inner angle. In specimens from Peru the yellow dots on the forewing are absent. — **moebiusi** Hsch. (34 d) has a broad *moebiusi*. yellow oblique band in the forewing. At the inner angle of the hindwing there is a large black band-spot and at the end of the cell 2 more isolated spots.

C. honesta Weym. (34 d) is a similar species with differently formed oblique band and rounded black *honesta*. spot in the hindwing. Of the two black spots at the end of the cell of the forewing the one at the costal margin is here the longer, in *moebiusi* just the reverse is the case. This species flies on the eastern slopes of the Andes of Ecuador, whilst the local form **bicolora** Hsch., in which the yellow oblique band is absent, occurs still *bicolora*. further east, on the upper Rio Napo. The latter resembles, besides the larger *Melinaea mothone* and *Mechanitis deceptus*, especially *Hyposcada fallax* and *Ceratinia semifulva*. *fallax* is recognised at once by the large black antennae and the short cell of the hindwing; *semifulva*, in addition to its smaller size, by the dark base of the forewing and only 2 black spots at the end of the cell.

C. mamercus Hew. is similar to *mansuetus*, but smaller, with broader, short, distally convex yellow *mamercus*. oblique band. The black median band of the hindwing and the distal border, which is broad at the inner angle, are united at the inner margin. In some specimens median band and distal border are joined into a large patch. Flies on the eastern slopes of the Andes of Ecuador. — Thence comes also the similar **aemilia** Hew., *aemilia*. with narrower oblique band and yellow marginal spots in the apex of the forewing. At the inner angle of the hindwing is placed a distally divided black spot.

C. manaos Bates is similar to *mamercus* and *rowena*. Yellow band of the forewing extending into the *manaos*. cell. Hindwing with 2 black macular bands. From the lower Rio Negro. — **rowena** Hew. is a smaller form *rowena*. from Colombia with narrow yellow oblique band, double spot at the end of the cell, long wedge-spot and broad streak at the base of the forewing, as well as large double spots at the inner angle of the hindwing. — In **achaea** *achaea*. Hew., from eastern Ecuador, which is of the same size, the oblique band is divided into 2 spots at the end of the cell and the inner angle of the forewing. The hindwing, including the costal margin, is for the most part black-brown, only the apex is red-brown. — **semifulva** Salv. (34 d) has already been mentioned under *bico-* *semifulva*. *lora*. It is the local form of *achaea* or a nearly allied species, without the yellow oblique band on the forewing. It occurs, like all the similar forms, in eastern Peru and Ecuador, together with **occulta** Hsch., which has *occulta*. 3 more yellow spots in the apex of the forewing and white distal-marginal dots on the under surface.

C. apollinis Stgr. (34 d) approximates to *aemilia*, but has larger yellow subapical spots in the forewing *apollinis*. and a large black spot at the inner angle of the hindwing. It flies on the Upper Amazon near Iquitos.

C. viola Hsch. (34 e) has a distally lobed yellow oblique band in the forewing, dark distal margin and *viola*. spot at the end of the cell of the hindwing. The ground-colour is dark brown-red. It flies on the Upper Amazon, together with the similarly coloured *Melinaea satevis* and *madeira*. — In the local form **boliviensis** *boliviensis*. Hsch. the ground-colour is lighter red-brown; the hindwing has a dark median band and broader distal margin. — **herbita** Weym., from Surinam, has a similar yellow oblique band, and on the hindwing the median band *herbita*. and distal margin dark.

In **C. catilla** Hew. (34 e) the apex is broadly black to the end of the cell, then follows proximally the *catilla*. yellow oblique band. The broad black distal margin of the hindwing is united at the apex with the median band. The ground-colour is dark red-brown. Bolivia.

C. cantobrica Hew. (34 e) has yellow spots at the apex and distal margin of the forewing and also a *cantobrica*. curved yellow macular band. The distal border of the hindwing is narrower. The ground-colour is red-brown. The habitat is Bolivia. — In the smaller **pamina** Hsch. the yellow spot is narrower and also proximally mar- *pamina*. gined with black. The yellow marginal dots are absent. This form comes from the frontier districts of Peru and Bolivia.

C. pyrippe Hpffr., from Peru, is a form with broad yellow oblique band in the forewing and narrow *pyrippe*. streak-like longitudinal band in the hindwing. — In **tenna** Hsch. (34 e) on the other hand the oblique band *tenna*. is narrow, the dark distal margin of the hindwing broader. Eastern Ecuador. — In **napona** Hsch., which *napona*. is the same size, the oblique band of the forewing is broken up into 2 spots; the two black basal spots are larger; the distal margins have yellow marginal dots. — In ab. **calva** Hsch., which also flies on the upper Napo, the *calva*. black longitudinal band in the disc of the hindwing is absent. In the ♂ the anterior third of the hindwing is semitransparent.

- nina*. **C. nina** Hsch. is larger than *napona* and has a complete undulate transverse band in the forewing; further 2 yellow spots near the end of the median. Bolivia. — In **callanga** Hsch. (34 e) the yellow oblique band and the spots at the end of the cell have assumed the red-brown ground-colour. There is sometimes, especially on the under surface, another red-brown oblique band in the apex of the forewing. This form occurs at the boundary of Peru and Bolivia near Yungas.
- fenestella*. **C. fenestella** Hew. (34 e) is a form similar to *nina*, with yellow oblique band and broader longitudinal band on the hindwing; from Venezuela. — **intermedia** Btlr., from eastern Colombia and Ecuador, has the oblique band as in *fenestella*; above yellow marginal dots, beneath white ones. Hindwing with abbreviated longitudinal band. — In **peruviana** Stgr., from Peru, the hindwing in the ♂ is transparently yellowish at the costal margin, in the ♀ the marginal spots are yellow beneath. — In the form **hemimelas** Stgr., from Chanchamayo, the distal border and the longitudinal band of the hindwing are merged into one patch. — The Central American form of *fenestella*, from Costa Rica, which I call **valora** form. nov., is larger and has very large, oblong yellow spots in the apex of the forewing. On the upperside of the hindwing the white marginal spots are absent.
- ninonia*. **C. ninonia** Hbn. (34 f) is a smaller species and occurs in typical examples chiefly in Guiana and on the Lower Amazon. The disc of both wings is transparent in the ♂, but on the hindwing more brownish than in the figure. The yellow transverse band of the forewing is very broad. The yellow marginal dots are rather large in this and the following forms. — BATES describes as **bari** a form from Tocantins and Tapajos, which is said to have a narrower hindwing and paler, yellow spots. — In the larger **completa** Hsch. (34 f), from the Upper Amazon, the yellow oblique band is only half as broad and does not extend into the cell. — In the form **maculata** Hsch., from the Lower Amazon, the band is divided into 2 yellow spots. This large local form has very broad wings and large yellow marginal dots. — In **latefasciata** Hsch. the black spots at the end of the cell of the forewing are small, hence the yellow oblique band is very broad. It flies on the Upper Amazon, whilst the similar **philidas** Godm. & Salv. has its habitat in Colombia. The latter has a much broader black median band on the hindwing and no yellow marginal dots on the upper surface of the hindwing.
- mutilla*. The very similar **C. mutilla** Hew. (34 f), from British Guiana, has a pale yellowish oblique band and in addition a red-brown spot towards the apex. The longitudinal band of the hindwing is mostly very broad. — In ab. **pellucida** Hsch. the black spots at the end of the cell and the distal margin of the forewing form a broad band; the longitudinal band of the hindwing, on the contrary, is narrower. This form flies together with the preceding.
- pellucida*. A similar form, from Venezuela, which I call **C. vallina** spec. nov., is larger and has very broad wings. The longitudinal band of the hindwing is narrow and placed very far distad, so that the semitransparent discal area becomes very large.
- vallina*. **C. granadensis** Hsch. stands rather isolated, only to some extent recalling *philidas*. The yellow oblique band is very broad and in it are placed at the end of the cell the two black spots, which are here very small, whilst the third in the end of the cell is very long and wedge-shaped. At the apex and again at the distal margin there are 2 white dots. The hindwing is as in *philidas*, with narrower black longitudinal band. In Central Colombia.
- granadensis*. **C. maenas** (Bang-H. i. l.) (34 f) has the pattern somewhat like that of *latefasciata*, but the yellow transverse band of the forewing and the yellow marginal dots are absent. It flies with the similarly coloured forms of other genera on the Upper Amazon.
- maenas*. **C. antonia** Hew. (34 g) has a yellow-brown ground-colour and different yellow macular band. The yellow marginal dots are very large, but smallest in the apex of the forewing. — In the similar **antonina** Stgr., from the Upper Amazon, it is just the reverse, the marginal dots are largest in the apex, moreover the macular band is much smaller, proximally edged with black. *antonia* from western Ecuador differs moreover in the longitudinal band of the hindwing, the spots of which are largest at the apex.
- antonia*. **C. fimbria** Hew., from Colombia, has a broad yellow oblique band on the forewing, which is divided by a black macular band, so that there is a large yellow patch at the inner angle. The marginal dots of both wings are white. — In the similar **nemea** Weym. (34 g), also from Colombia, the yellow band is narrower and differently formed. The hindwing is not transparent as in *fimbria*.
- fimbria*. **C. philetaera** Hew. (34 f) may be recognised by the large yellow median spot on the forewing and the broad black distal border of the hindwing. In the distal margin of the forewing and mostly also of the hindwing are placed yellow dots, among them 2 larger ones in the apex of the forewing. The habitat of this easily recognised species, which resembles *Melinaea idae*, is Colombia.
- philetaera*. **C. leprieuri** Feisth., from Cayenne, has similar hindwing, which is black also at the costal margin, and white marginal dots. The yellow median spot is distally rounded; the black spots at the end of the cell are joined rectangularly with the spot at the median.
- leprieuri*. **C. ignorata** Hsch. (34 f) has similar markings, but yellow marginal dots on the forewing, and the hindwing is red-brown, with black, yellow-dotted distal margin and black longitudinal band. This species flies

on the Upper Amazon. — In the local form **michaëlisi** Hsch., from the Lower Amazon, the yellow patch is *michaëlisi*. divided by a black oblique band from the discocellular to the inner angle.

C. cornelia Guér., from Bolivia, has a narrow yellow oblique band on the forewing and 4 yellow spots *cornelia*. in the broad black distal margin of the hindwing, as well as a black spot at the apex. — In the similar **sellana** *sellana*. Hsch. the oblique band is divided into 2 spots; the middle marginal dots are absent in the forewing. The distal margin of the hindwing is proximally widened into teeth.

C. fulminans Btlr. (34 g) has a narrow yellow oblique band, strongly angled distally. The black spot *fulminans*. at the end of the cell is proximally forked. The hindwing has a narrow distal border and a longitudinal band of 3 black spots in the disc. The ground-colour is light yellow-brown. — This form from Colombia is represented in eastern Ecuador by the dark red-brown **satura** Hsch. In this the yellow colour is wanting in the *satura*. end of the cell of the forewing and at the apex of the hindwing.

C. angelina Hsch. (34 g), from the Ucayali (tributary of the Upper Amazon) has the pattern similar *angelina*. to that of *fulminans*. But the yellow marginal band and the distal-marginal dots are absent. The apex is more narrowly black, on the other hand the macular band in the disc of the hindwing is much broader, partly confluent with the dentate distal margin.

In a smaller species, **C. soror** Srka., which is confusingly like *Melinæa lucifer*, the oblique band is like- *soror*. wise absent. The apex of the forewing is, however, more broadly black and the yellow spots in it are merged into one large one. In the hindwing longitudinal band and distal margin form a large black patch, as in *Melinæa lucifer*. This interesting species comes from Pebas on the Upper Amazon.

The description of **C. acceptabilis** Weeks, from Bolivia, has unfortunately not been obtainable.

acceptabilis.
anastasia.
anastasina.

The large, broad-winged **C. anastasia** Bates has the pattern similar to **anastasina** Stgr. (35 a), but behind the end of the cell of the forewing another yellow zigzag band, like that of *fulminans*, and 7 yellow marginal dots. *anastasia* flies in the damp primeval forests near Ega on the Upper Amazon, whilst *anastasina* occurs further up at the foot of the Andes in Peru. — **castanea** Btlr., from Rio Juruá, is a darker form of *castanea*. *anastasia*, in which the yellow oblique band reaches to the hinder angle of the forewing. These 3 forms closely resemble *Melinæa maëlus* (= *pardalis* Bates) resp. *cydon*.

C. porsenna Srka. (= *amabilis* Stgr.) is similar to *anastasius* in size and markings. The yellow apical *porsenna*. spots in the forewing are much larger and proximally edged with black. On the hindwing the median band and the dark distal margin are united into a large patch. — This form flies, like the similar *soror*, on the Upper Amazon near Pebas.

In **C. fluonia** Hew. and the allied forms the anterior half of the yellow oblique band of the forewing *fluonia*. is curved distad, as may be seen in the figure of *berna* (34 g). *fluonia* has a four-branched, yellow macular band, which enters the cell and nearly reaches the inner margin. The black double spot at the end of the cell has also a corresponding curved projection towards the apex, as in *pardalina* (34 g). The hindwing is like that of *berna*. *fluonia* flies on the Upper Amazon, whilst the local form **berna** Hsch. (34 g) comes from *berna*. the upper Napo in Ecuador. The latter has instead of the large macular band in the forewing only 2 oblong yellow spots in the black apical area.

C. pardalina Hpffr. has a yellow oblique band in the forewing. The aberration figured (34 g) was des- *pardalina*. cribed by DRUCE as **tigrina**. In the latter only a yellow spot at the discocellular remains of the band. Other- *tigrina*. wise the marking and colouring is similar in both forms. Of the black colour in the apex of the forewing only marginal dots remain in *fluonia*, whilst in the hindwing the black median band and the distal border are widened. The species resembles the respective local forms of *anastasia* and *Melinæa maëlus*. Both forms fly on the Upper Amazon in Peru; *tigrina* may, however, occur further up. — **pantherina** Stgr., likewise from *pantherina*. the Upper Amazon, is an intermediate form between *fluonia* and *pardalina*, in which red-brown spots appear in the apex of the forewing. The black median band of the hindwing is as in *fluonia*.

C. thea Hew. recalls *catilla* (34 e), but the yellow median spot is rounder and does not extend so far *thea*. to the hinder angle. In a smaller form, which STAUDINGER named **theatina** (i. l.) (35 a), the yellow spot *theatina*. is likewise rounder than in the figure. This form is, however, considerably smaller, has lighter ground-colour, and at the end of the cell of the forewing there are only 2 small, black spots, whilst in *thea* a large black spot extends into the yellow and is joined to the black costal and distal margin. The hindwing has in both forms a black distal border and median band, which sometimes touch at the apex. They fly on the Upper Amazon and its tributaries.

C. xanthostola Bates (35 a) stands completely isolated. The hindwing is much shorter than the fore- *xanthostola*. wing, which is not brought out clearly in the figure. In this the species recalls some *Napeogenes*-species. Very striking moreover is the absence of the median band on the upper surface of the hindwing, as is also the case in *Mechanitis macrinus*. In an aberration, which I have described as **desmora** Hsch., the black spot at the *desmora*. base of the forewing above is absent and the black bordering at the proximal side of the yellow spot is much narrower. Both forms fly on the Middle Amazon.

- dionaea*. **C. dionaea** Hew. I only know in typical specimens from Central America (Honduras, Guatemala), on the other hand in Venezuela a local form occurs which I designate **fraterna** form. nov. (35 a). In *dionaea* there is proximally to the yellow oblique band a larger yellow spot which is joined to the red-brown basal part. In *fraterna* there is instead only a small spot which is mostly confluent with the oblique band, but is proximally edged with black. Moreover, in *fraterna* the yellow colouring is brownish and the distal-marginal dots are smaller. In *Mechanitis* there are 2 corresponding forms: *doryssus* from Central America and *veritabilis* from Venezuela. — *limpida* Hsch. is a peculiar form of *fraterna*, in which the yellow bands and spots are very broad and transparent; a stripe at the costal margin of the hindwing is of the same colour. This interesting local form recalls *Mechanitis franis* and flies like the latter in the Cauca Valley in Colombia.
- mergelena*. In **C. mergelena** Hew. (35 a), from Colombia, the median band of the hindwing is reduced to a black spot at the apex, which is connected with the broad black distal border. At the base of the forewing there is further a proximal yellow oblique band, which is divided by a large, triangular black spot. — In **megalogopolis** Fldr., likewise from Colombia, this black spot is absent, so that a broad yellow oblique band is formed, as in *Mechanitis macrinus*. The yellow spots at the end of the cell on the other hand are small, and also the white marginal dots on the hindwing.
- callispila*. **C. callispila** Bates (35 a), from Costa Rica, has a black-brown forewing with numerous yellow spots and red-brown base. The hindwing is red-brown with dark distal margin, blackish apex and spot at the end of the cell. — In **cleis** Bates, from Panama, the yellow spots in the disc of the forewing are much smaller. The distal margin of the hindwing and the spot at the end of the cell are united into a large patch in the apical third. — As **mylassa** DRUCE describes another form, from Veragua, with broad black apex and distal margin to the hindwing, which, however, are not confluent with the spot at the discocellular. — **leucania** Bates, from Panama, is similar to *callispila*, but has white spots in the forewing which form an oblique band at the end of the cell. The hindwing has dark distal margin and a narrow longitudinal band.
- decumana*. **C. decumana** Godm. & Salv. (= *centralis* Stgr.) (35 b). This fine, large species and especially the local form **excelsa** Fldr. recall the similar *Ituna lamirus* and *Olyras montagui*. The markings resemble those of *callispila*; the yellow spots are larger and transparent. On the hindwing the spot at the end of the cell is absent. In *decumana* the base of the forewing is black-brown, whilst *excelsa* has a red-brown stripe along the median vein. Moreover, the hindwing on the upper surface of *decumana* is uniformly red-brown in the disc, in *excelsa* a transparent oblique band runs from the apex to the inner margin. *decumana* flies in Panama and Costa Rica, whilst *excelsa* comes from Colombia. — STICHEL erected the genus *Oreogenes* for these two forms, but the characters in the neurulation are not constant.
- vallonia*. With **C. vallonia** Hew. (35 b) we come now to a group which is distinguished by a broad, transparent band in both fore- and hindwing. The forms are all indigenous to eastern South America, especially Brazil. In *vallonia* the yellow oblique band of the forewing forms a semicircle. In the cell is placed a triangular black spot. The band of the hindwing is transparent red-brown. The antennae are yellowish, with dark base. The species occurs on the Upper Amazon and in Guiana. — In the somewhat larger **daëta** Bdv. and the following forms the band of the hindwing is yellow, antennae dark with yellow club. The apex of the forewing in *daëta* is broadly black with 3 large white dots. At the hinder angle is placed a red-brown spot, whilst in the very similar, but larger **euryanessa** Fldr. (35 b) this angle is black. The latter form has very delicate, transparent colouring, even in the apex of the forewing. The black oblique band before the end of the cell of the forewing is posteriorly broad and dentate, in *daëta* posteriorly reduced. Finally in *daëta* and the following forms the base of the hindwing beneath is yellow, but in *euryanessa* red-brown. The two forms occur together in numbers in central and southern Brazil in the dense virgin forests. — Larva and pupa of *euryanessa* according to SEITZ are stout. The pupa is rounded, yellow-brown, darker at the wings, adorned all over with small black wavy markings.
- daëtina*. — **daëtina** Weym. is a very rare form of *daëta* with dark mahogany-brown ground-colour and broad black bands and margins. In addition to the two yellow bands there is a yellow spot on the discocellular of the forewing. — As *evanescens*, **evanescens** (= *melphis* Hbn.) I designate a very light, transparent form of *daëta*. Not only the very broad, light yellow band of the hindwing, but also the whole disc of the forewing is transparent yellowish. The red-brown colour is confined to the base and a spot at the hinder angle of the forewing and also a narrow stripe at the distal margin of the hindwing. — **laphria** Dbl. (35 b) is another very similar species from central Brazil. Size and markings as *daëta*, but not transparent. The white spots in the apex of the forewing smaller. Across the end of the median a further black streak. The eggs of *laphria* are laid in clusters on the leaves of a Solanaceae. The young larvae are yellow-brown with dark head; later they have 3 dark dorsal stripes which are connected by transverse lines. The pupa is short and stout with metallic surfaces at the sides. The pupal stage lasts about 11 days.
- melphis*. **C. melphis** Godt., from the Antilles, which is unknown to me in nature, is said to have black forewing with 3 pale yellow-red bands and 3 white dots in the apex. The hindwing is yellow-red with black costal and distal margins, and also a median band, which does not reach the distal margin.

As *C. mysotis* spec. nov. I designate a species from Venezuela similar to *evanescens*, with shorter wings, *mysotis*. in which the red-brown colouring is absent except for the spot at the hinder angle. The hindmargin of the forewing is broadly blackish to the median. Both wings have white marginal dots.

C. fiammetta Hew. is a peculiar, rare species from South Brazil of the size and pattern of *laphria*. On *fiammetta*. the forewing the red-brown colour only extends from the base to $\frac{1}{3}$, behind it there are 2 transparent spots apically before the yellowish band. On the hindwing the red-brown is entirely absent; this is transparently yellowish, with broad black distal margin and small white marginal dots.

C. metella Hpffr. (35 b, c) (= *alexia* Druce), from eastern Peru, has in the ♂ transparent yellowish *metella*. wings with black margins and a half-band at the end of the cell of the forewing. The base of the forewing and the proximal half of the hindwing are reddish yellow-brown. Both wings have small white distal-marginal dots. In the ♀ the wings are scarcely at all transparent, much more brightly coloured, with broader, black margins. The disc of the hindwing is red-brown. — In the similar *oulita* Hew. the base of the forewing is *oulita*. blackish, and the black margins are broader. It occurs further south at the boundary of Peru and Bolivia. — *trimaculata* Weym. is a form from Colombia with very broad black costal and distal margins to the hind-*trimaculata*. wing, so that in the ♀ only a smaller, yellow-red spot is present at the inner angle.

The ♂ of *C. norella* Hew. has a deep black basal half to the forewing, in which a yellow spot is placed *norella*. at the end of the cell. In the ♀ the whole forewing is black except for the yellow spots in the disc and the white marginal dots. The form occurs only in the valleys of the Andes of Ecuador, south-east of Cuenca. — In the allied *norellana* Hsch., from the upper valley of the Napo in Ecuador, the base of the hindwing *norellana*. is not yellowish and the reddish colour only extends to the end of the cell. The part between this and the broad distal margin is transparent blackish. This rare form occurs in open places in the primeval forests, where it is fond of hovering round single trees at a few metres from the ground or resting upon projecting branches. — *nora* Hsch. is another allied form from Peru. Here the forewing is as in *norellana*, the base trans- *nora*. parent. The black spot at the end of the cell is isolated. The hindwing is only reddish at the anal angle, as in *lurida* (35 c), the distal half is transparent yellowish.

C. lurida Btlr. (35 c) is marked like *nora*, but has white dusting instead of the yellow colour in the disc *lurida*. of the forewing and at the end of the cell of the hindwing; also the underside of the abdomen is whitish, in the preceding form yellow. — The smaller *tricolor* Salv. has similar markings to *oulita* Hew., but also white *tricolor*. instead of yellow colour. In the ♀ there is an oblong white patch at the end of the cell of the hindwing. — Whilst in *tricolor* the black spot at the end of the cell of the forewing is broadly connected with the costal margin, in an otherwise very similar form, which I call *floreus* form. nov., there is only a narrow, isolated streak at *floreus*. the end of the cell. — The last three forms are found at the boundary of Peru and Bolivia.

In the following species the wings are almost entirely vitreous.

Some, as *C. ocna* H.-Schäff. (35 c), have still a small red-yellow spot at the anal angle of the hindwing. *ocna*. The base of the wing is yellowish. This species flies singly in eastern Colombia and Ecuador. — *adelinda* *adelinda*. Hew., from Ecuador, is a very similar form, with broader, black distal margin, without white marginal dots on the upper surface.

C. praxilla Hew. is an allied, somewhat larger species from eastern Ecuador, without yellow colour *praxilla*. at the anal angle of the hindwing. In contrast to *ocna* and most of the allied forms; *praxilla*, *coeno*, etc., have black antenna and a white spot at the base of the hindwing beneath, the former a yellow streak and yellow club to the antenna.

C. guttata Weym. is a form of *coeno* Hew. (35 d). It has a red-yellow spot at the anal angle of the *guttata*. hindwing. *coeno* itself, from Colombia and Venezuela, has the basal half of the hindwing dusted with yellow. *coeno*. In the ♂ the black distal margins are narrower. — ab. *latilimbata* Weym. is a form of *coeno* with broad black *latilimbata*. margins and large white marginal dots, from Colombia.

In *C. frater* Salv., from Peru, the wings are dusted with whitish, and at the anal angle is placed a smaller *frater*. yellow patch.

In *C. cana* Hsch., from Colombia, the wings are dusted with whitish, the yellow patch is absent. On *cana*. the other hand a blackish band runs across the middle of the cell of the forewing.

C. statilla Hew. (35 c) is distinguished from the very similar *frater* by the yellow club of the antenna *statilla*. and yellow underside of the abdomen, which is grey in *frater*. The end of the cell of the forewing is without markings, whilst in *atagalpa* Hsch. a blackish band is placed across the end of the cell of the forewing. Both *atagalpa*. forms come from eastern Peru.

C. antea Hew. (35 d), from Ecuador, the largest species of the genus, has colourless wings with broad *antea*. black margins and small, white distal-marginal dots. The club of the antenna, base of the hindwing beneath and underside of the abdomen are yellow. On the high bank of the upper Pastaza this interesting species was

found rather commonly among immense trees, together with the very similar *Napeogenes glycera* and *lycora*, *Ithomia linda*, *Hypoleria coenina*, *Threnodes coenoides*, etc.

eupompe. The last species of this extensive genus, **C. eupompe** Geyer (= *phlysto* Fldr.) (35 d), from South Brazil, stands quite isolated, much more recalling certain species of the genera *Napeogenes*, *Ithomia* and *Pteronymia*. The wings are short, transparent yellowish, with black margins and a half-band across the end of the cell of the forewing; on the under surface with rows of red-brown spots and whitish double spots. Antenna black, collar red-brown. — Larva according to W. MÜLLER rather transparent, above grey-green, head yellow, later black. Pupa transparent green, with shiny gold lines and black spots.

16. Genus: **Heteroscada** Schatz.

This genus contains only 2 small, yellowish forms, which occur in Brazil. The middle discocellular of the hindwing is weakly curved proximally, the upper one in the ♂ is long.

gazorla. **H. gazorla** Godt. (= *yanina* Hew.) (36 d). This pretty little species is very similar to *Pteronymia hemixanthe* (40 d). The collar is red-brown, the abdomen beneath yellow. The wings are dusted with yellow to beyond the end of the cell and have dark margins.

fenella. The somewhat larger **H. fenella** Hew. has broader borders, a broader half-band across the end of the cell of the forewing and a red-yellow spot at the base. It closely resembles *Napeogenes xanthone*. — Both species fly in Central Brazil.

17. Genus: **Napeogenes** Bates.

In this extensive genus there are many forms whose pattern and colouring recur in certain *Ithomias*, so that they can only be recognized by the neurulation. All the *Napeogenes* may be distinguished from the similar species of other genera by the non-angled discocellular, the long cell and the apparently 5-branched median in the hindwing. — The species are scattered over the whole Neotropical region, mostly mixed with the corresponding species of other genera, but are usually rare, whilst the more vigorous *Ithomias* are met with in large numbers.

peridia, *hemimelaena*. **N. peridia** Hew. (35 d), from Colombia, has similar markings to *Callithomia tridactyla* and *Hirsutis hecalesina*; the hindwing is, however, distinguished by large yellow distal-marginal dots. — In **hemimelaena** Godm. & Salv., from Panama, the yellow spots at the end of the cell of the forewing are united into one large one, as in *iquitensis* (35 d). The yellow spots at the apex and distal margin of the hindwing on the contrary are very small and the apical half consequently much more strongly coloured with black.

iquitensis. **N. iquitensis** Stgr. (35 d), from the Upper Amazon, has in the black apical half of the forewing a broad, curved, yellow band; in the red-brown basal half 2 black spots and on the red-brown hindwing a black macular band and dentate distal margin.

amara. **N. amara** Godm. (35 d), from Central America, is smaller than *peridia* and has in the apical part of the forewing fewer, but larger, yellow spots, and at the base a red-brown spot. The marginal dots are smaller and white. At the apex of the hindwing are placed 2 indistinct yellowish spots. — In the somewhat larger *tolosa* Hew. (35 e) the ground-colour of the hindwing and the base of the forewing are lighter yellow-brown. The yellow spots of the forewing are larger, the distal border of the hindwing narrower. *tolosa* inhabits Mexico and northern Central America.

olyrina. The interesting and rare **N. olyrina** Hsch. (35 e), from Bolivia, recalls *Ceratinia excelsa* and *Olyras montagui*. The black forewing has large whitish vitreous spots, the red-brown hindwing bears in addition to the broad, dark marginal band a hyaline oblique band in the apical half, as in *excelsa*.

larina. **N. larina** Hew. (35 e), from eastern Colombia, has white spots on the forewing; of the marginal spots those in the apex are larger; the base of the forewing is red-brown. In the disc of the hindwing are placed 3 isolated black spots. *Ithomia candescens* is very similar.

aethra. **N. aethra** Hew. (35 e), from the upper Napo in Ecuador, has larger, band-like, yellow spots in the disc of the forewing and indistinct yellow marginal dots. The hindwing is dark-margined, with 4 black spots in the disc.

duessa. **N. duessa** Hew. (35 e) may be recognised by the chestnut-brown ground-colour and the two black half-bands at the apex of the hindwing. The forewing has a yellow median spot with black dot and a dark brown base. This peculiar species flies on the Upper Amazon in Peru and Ecuador.

quadrilis. In **N. quadrilis** Hsch., from the Upper Napo, the ground-colour is yellow-brown and the yellow median spot of the forewing is prolonged, forming an oblique band. In the dark-margined hindwing a large black-brown spot is placed at the inner angle.

The following 5 forms are all very nearly allied; they have the usual ground-colour with black apical half and black cell-spot on the forewing, also dark dentate marginal band on the hindwing and 3—5 black spots in the disc. — **N. terastis** Hsch. (35 e) has a yellow median and subapical band on the forewing, — *terastis*. It is the form from the Lower Amazon, whilst in **zurippa** Hew., from Bolivia, the median band is broken up into 2—3 spots. — **otaxes** Godm., which, like the two following forms, occurs in Peru, has a pale, yellowish median band and in the apex 2 dots of the same colour. — **pyrrho** Druce has still the yellow subapical band, but the median band is absent. — In **deucalion** Hsch. the subapical band is also absent except for 2 yellow dots.

N. hygia Godm., from Surinam, which is unknown to me in nature, is said to resemble *Mechanitis hygia*.

N. stella Hew. (35 f). In this small species and its local forms from eastern Colombia and Ecuador the blackish colour in the distal half of both wings is almost entirely suppressed by the yellowish vitreous spots. *Calloleria jolaia* has a very similar pattern and can only be distinguished by the neurulation. — In the somewhat larger **glabra** Godm., from Colombia, the wings are still more transparent and the marginal dots yellow. The inner margin of the forewing is black. — **aster** Godm., from Ecuador, has darker wings and smaller marginal dots. — In the similar **decora** Godm. the margins of both wings are much broader. The forewing has a dark streak through the cell.

N. larilla Hew. (35 f), from Ecuador, has vitreous wings with dentate, dark distal borders and a spot at the end of the cell on each wing. In the ♀ the wings are broader, the margin of the forewing red-brown and the white marginal dots on the hindwing much larger. This rare species recalls *Velamysta pardalis* and *Dismenitis theudelinda*, with which it occurs in the mountain forests up to heights of 2500 m.

N. cranto Fldr. (35 f), from Colombia, has the margins and a half-band across the end of the cell of the forewing dark brown. The base of the forewing and the hindwing are dusted with yellow. — The similar **paedaretus** Godm. & Salv., from Costa Rica, is more brightly coloured and has yellow-brown veins, also at the apex and the dark costal margin of the forewing 2 oblong yellow spots. In the ♀ the base of the forewing is dark and the hindwing is yellow-brown.

In the smaller **N. harbona** Hew. (35 f), from Ecuador, the wings are colourless, the margins black above and red-brown beneath, with indistinct, white marginal dots.

N. apulia Hew. (35 f), from Colombia, has a pattern like *Ceratinia oena*, with red-brown spots at the inner angle of the hindwing. — In the somewhat larger **nausica** Weym., from Ecuador, the distal border of the forewing is broader, the inner border narrower. The red-yellow spot at the inner angle does not reach the base.

N. lycora Hew. (35 g), from eastern Ecuador, is similar to *apulia*, but the red-yellow colour at the inner angle of the hindwing is absent; the base of the latter is slightly yellowish. Moreover, the club of the antenna is yellow.

N. glycera Godm. (35 g) is confusingly like *Ceratinia antea*, but is somewhat smaller and the abdomen is grey-white beneath, in *antea* vivid yellow. It flies together with the similar forms on the upper Pastaza in Ecuador.

N. eunomia Godm., from Peru, corresponds to the similar *Ceratinia frater* from the same country. The black margins are narrower, the base of the hindwing is yellowish.

N. flossina Btlr. (35 g), from eastern Colombia and Ecuador, has transparent wings with narrow, dark margins and at the base of both wings yellowish colouring. — A very similar form is **hypsaeca** Stgr., from the Cauca Valley in Colombia. In it the veins at the end of the cell of the forewing are not margined with dark, and it is more weakly coloured at the base. The last two forms recall *Episcada paradoxa* and other similar Ithomias.

The following species, mostly smaller, have a dark oblique band across the end of the cell of the forewing. **N. ithra** Hew., from the Lower Amazon, and **potaronus** Kaye (35 f), from British Guiana, have a posteriorly forked, dark oblique band and whitish patch. In *ithra* the wings are slightly reddish, the margins narrow, dark brown, the base of the forewing and the distal margin of the hindwing yellow-red. *potaronus* has colourless wings with broader, dark margins and red-brown spots in the distal margin of the hindwing.

N. cyrianassa Dbl. & Hew. (35 g), from the Amazons and Colombia, may be recognised by the teeth of the black oblique band towards the apex. Hence the yellow oblique band is correspondingly sinuate. The hindwing has a broad, dark-edged, yellow-red submarginal band. — In **ercilla** Hew., from the Upper Amazon, the subapical band of the forewing is white and divided into spots. — **glycon** Godm., which is unknown to me in nature, is said to be similar to *cyrianassa*, but with a triangular, black spot in the cell of the forewing. — **adulta** Hsch. and **dilutata** Hsch. are local forms of *cyrianassa* from British Guiana. *adulta* is larger and more

brightly coloured. The base of the forewing is red-brown nearly to the end of the cell. In the apex is placed a row of red-brown dots. The red-brown band of the hindwing is broadly margined with black-brown. *dilutata* has narrower wings and yellow-brown ground-colour, which is extended beyond the end of the cell of the forewing and also borders the distal margin.

inachia. **N. inachia** Hew. (35 g) is very similar to *cyrianassa*, but the projection is absent at the end of the cell of the forewing, which is more transparent yellowish at the base. The antenna is dark. — In the local form *moles* **moles** Hsch., from British Guiana, all the margins and borders are broader. The disc of the hindwing is yellowish. The wings are short and broad. — *tunantina* **tunantina** Bates, from the Upper Amazon, is said to be similar to *cyrianassa*, but with oval subapical spot on the forewing, so that the black oblique band at the end of the cell is continued to the distal margin in the same width. — *adelphe* **adelphe** Bates, from the Lower Amazon, is likewise said to be very similar to *cyrianassa*, with less transparent wings. Apical spot of the forewing almost uniformly broad. The black oblique band gradually narrowed.

pheranthes. **N. pheranthes** Bates, from the Upper Amazon, is said to be similar to *inachia*, but with black collar and patagia, which are red-brown in the other forms.

pyrois. **N. pyrois** Bates, from the Lower Amazon, is likewise similar to *inachia*, but has no yellowish brown in the forewing. The anterior half of the hindwing, moreover, is yellowish.

corena. **N. corena** Hew. (36 b), from the Upper Amazon, as well as from eastern Peru and Ecuador, may be recognized by the broad, yellow-brown subapical band of the forewing, which is quite similar also in species of other genera, e. g.: *Dismorphia erythroë*, *Leucothyris ilerdina*, *lubilerda*, *Hypoleria sarepta* and others.

lamia. **N. lamia** Hew. resembles *Scada ethica* (36 d), but is appreciably larger and has larger white marginal dots, especially in the hindwing, as well as a non-forked band over the end of the cell on the latter.

galinthias. A similar form is **N. galinthias** Hpffr., from Bolivia, in which the dark marking over the end of the cell of the hindwing is absent.

rhezia. **N. rhezia** Hbn. recalls *Ceratinia laphria*, but the black spot in the cell of the forewing and the white marginal dots on the upper surface are absent. The species occurs in Brazil.

xanthone. In **N. xanthone** Bates (= *yanetta* Hew.) (36 b), from southern Brazil, the red-brown colouring on both wings is absent except for 2 streaks at the base of the forewing. — ab. **richardi** Fruhst., from Central Brazil, on the other hand has stronger red-brown markings at the base of the forewing and in the distal margin of the hindwing.

leptalina. **N. leptalina** Fldr., from Central Brazil, has similar markings to *xanthone*, but without red-brown at the base of the hindwing. It recalls *Dismorphia methymna*.

crispina. **N. crispina** Hew., from Colombia, has a reddish base to the forewing and a dark spot at the costal margin at one-half the length of the cell. The black distal margin is proximally dentate on the veins.

benigna. In **N. benigna** Weym., from Colombia, there is a reddish streak over the median of the forewing and the half-band on the discocellular is broad at the median.

sulphurina. **N. sulphurina** Bates (= *chinia* H.-Schäff., *pozziana* Oberth.) (36 a) is a yellowish, dark-margined species from the Amazons and Brazil, recognizable by the black streak over the median at the base of the forewing and 2 white dots in its apex, as well as by the black antennae.

osuna. **N. osuna** Hew., from Bolivia, has broad black margins and in addition to the transverse band across the end of the cell of the forewing an interrupted band across that of the hindwing, as well as a band through the cell of the forewing. — In *azeka* **azeka** Hew. (35 g) the markings are similar, but more delicate. The bands through the cell of the forewing and across the end of the cell of the hindwing are here only indicated by the absence of the yellow dusting (which is not brought out well in the figure); also the oblique band at the end of the cell of the hindwing is quite narrow from the middle onwards. Colombia and Ecuador. — *gracilis* **gracilis** Hsch., from Bolivia, is similar to the preceding, with narrower margins and broader half-band across the end of the cell of the forewing, and without the band through the middle of the cell and across the end of the cell of the hindwing.

pteronymiensis. **N. pteronymiensis** Hsch., from Colombia, has a colourless forewing and a yellow-dusted hindwing with dark margins spotted with yellow-brown beneath and a half-band of the same colour across the end of the cell of the forewing. Antenna dark with yellow-brown club. Apex of the forewing and distal margin of the hindwing with white marginal dots on the under surface.

elva. **N. elva** Godm., from Colombia, which is unknown to me in nature, is said to have transparent wings with the margins blackish above and reddish beneath.

pharo. **N. pharo** Fldr. (36 b), from the Upper Amazon, is a commoner species, with yellowish vitreous areas and broad black margins, which have yellow-brown stripes beneath. The transverse band of the forewing is gradually

pointed. The antennae are black. — In the similar *avila* Hsch., from eastern Ecuador, the club of the antenna *avila*. is yellow-brown, the wings are narrower and the forewing has beneath 7 white marginal spots, in *pharo* only 3—4 apical spots. — *crocodes* Bates, from the Upper Amazon, differs from the preceding by the black collar *crocodes*. and patagia, which in the latter are red-brown.

N. thira Hew., from Peru, has the size and markings like *syphis* Guér. (36 a), from Bolivia, but a red- *thira*. yellow stripe in the distal margin of the hindwing. On the under surface both forms have yellow-brown, dark- *syphis*. edged margins and 2 white dots in the apex.

The similar **N. verticilla** Hew. (36 a) has only a dark half-band across the discocellular and towards the *verticilla*. apex a smaller, white patch. — *sodalis* Hsch., which occurs together with the preceding at the boundaries of Peru *sodalis*. and Bolivia, is similarly marked. It has, however, a yellow base to the costal margin of the hindwing beneath, whilst in *verticilla* this is yellow-brown like the other margins.

18. Genus: **Sais** Hbn.

This small genus contains only a few forms of scarcely medium size, which are all very nearly allied and occur in northern South America, but are mostly not common. The species may be recognized by the long cell of the hindwing with feebly angled middle discocellular and by the strongly aborted forelegs of the ♂♂.

S. paraënsis Hsch. (36 c), from the Lower Amazon, has yellow-brown ground-colour; apex and 2 spots *paraënsis*. at the end of the cell of the forewing, as well as distal margin and median band on the hindwing, black-brown. Forewing with broad yellow oblique band. — **badia** Hsch. (= *mosellina* Stgr. i. l.), from the Upper Amazon, *badia*. is a large local form with chestnut-brown ground-colour and smaller yellow oblique band. — **camariensis** Hsch., *camariensis*. from British Guiana, has light yellow-brown ground-colour, a large red-brown spot in the apex of the forewing and a yellow longitudinal band at the median of the hindwing. — In **rosalia** Cr., the oldest form, from Surinam, *rosalia*. the apex is not black-brown but like the yellow-brown ground-colour. Otherwise this form is very near to *paraënsis*. — In the larger **virchovi** Dew. the apex of the forewing is black-brown and the yellow oblique band very narrow *virchovi*. and dentate. — **mosella** Hew. (36 c), which likewise comes from Venezuela, has a red-brown spot at the apex of the *mosella*. forewing, whilst the median band of the hindwing is almost entirely absent.

S. promissa Weym. and **zitella** Hew. (36 c) have broader wings and a yellow-brown apex to the forewing *promissa*. with black-brown marginal teeth, much as *Ceratinia pardalina*. The spots of the median band and the distal- *zitella*. marginal teeth of the hindwing are merged together in pairs into black stripes, so that streaks of the yellow-brown ground-colour are left between them. Both forms fly on the Upper Amazon, and *promissa* has a large, broad, yellow oblique band, like *paraënsis*, whilst in *zitella* this is short and narrow.

19. Genus: **Scada** Kirby.

This genus includes only a few delicate, yellow and black forms, which are almost all very similar and mostly occur in the neighbourhood of the equator. It has the forelegs of the ♂♂ strongly aborted in common with the preceding genus and the superficially similar *Aeria*. It may be recognized especially by the long upper discocellular, which to some extent forms a branch of the subcostal. — In size some forms are inferior even to the true Ithomiids and are hence the smallest of the whole family.

The *Scada*-species mostly occur in the thick undergrowth in the primeval forest, only coming into the open spaces in dull weather, when they are found feeding at small, white star-shaped flowers.

The rare **S. zemira** Hew. (36 d), from Ecuador, is the only species which in addition to very broad black *zemira*. markings has also a red-brown double spot at the hinder angle of the forewing.

S. kusa Hew. has somewhat narrower margins, it differs from the normal markings in that the oblique *kusa*. band joins the inner margin of the forewing, cutting off a yellow spot at the hinder angle. It flies, like the smaller **ethica** Hew. (36 d), in Ecuador. In the latter a yellow spot at the apex of the hindwing is cut off by a blackish *ethica*. transverse band across the end of the cell, as is also the case in *Napeogenes lamia* and *Ithomia derasa* from the same localities. — **excellens** Srka. is a local form from Ecuador, in which the black distal margins are almost *excellens*. entirely suppressed, the marginal dots being very large and yellow. — **quotidiana** Hsch., from the middle Napo *quotidiana*. in Ecuador, approximates to *ethica*; but the characteristic transverse band on the hindwing is absent.

S. zibia Hew. is a similar species from Colombia and Ecuador with more pointed apex to the forewing *zibia*. and red-brown collar. — **xanthina** Bates (36 d) is a similar form with broader, deeper black margins and more *xanthina*. vivid yellow. It is the only Central American form; from Panama and Costa Rica. — **amplificata** Hsch., from *amplificata*. eastern Colombia, is larger, with broad blackish margins and larger white marginal dots, especially at the apex of the forewing.

- philemon*. **S. philemon** Fldr., from Venezuela, is said to be very similar to *reckia* Hbn., but to have red-brown collar and patagia.
- theaphia*. **S. theaphia** Bates (36 d), from the Lower Amazon, is the smallest species of the genus and also of the whole family. Examples occur in which the wing-expanse is less than 30 mm. It has very delicate, yellowish wings and a straight, black oblique band at the end of the cell of the forewing. — **batesi** Hsch., a local form from the Upper Amazon to Ecuador, is larger, more vividly coloured, with broader black margins. — **majuscula** Hsch. is a larger form from British Guiana. It has broad deep black margins and very small white marginal dots. On the under surface there is a red-brown streak in the distal margin near the inner angle.
- reckia*. **S. reckia** Hbn., from northern Brazil, is a smaller species and may be recognised by the absence of the white marginal dots on the upper surface. The yellow ground-colour is only slightly transparent.
- ortygia*. In **S. ortygia** Druce (= *garleppi* Stgr. i. l.), from Peru, the white marginal dots are likewise absent; but it is considerably larger with very long, pointed wings. The dark margins, especially in the ♂, are very transparent; the inner margin of the forewing very broad.

20. Genus: **Dircenna** Dbl. & Hew.

With this begins the group of the true *Ithomias*, in which the lower discocellular of the hindwing forms a sharp angle with the median, so that the cell is short.

In *Dircenna* the palpi are strongly hairy, the cell of the hindwing is short. The forelegs of the ♀♀ are four-jointed. The genus comprises for the most part fine-looking species with transparent wings and short antennae. Representatives of this genus are found almost everywhere from Mexico to Argentina; they are mostly not rare and some, such as *klugi* from Central America and *dero* from Brazil, are among the commonest butterflies of the respective districts.

- klugi*. **D. klugi** Hbn. (36 e ♂, ♀). The ♂ has longer hindwing and more delicate colouring, which is not sufficiently brought out in the figure; the hindwing in the ♂ is yellowish, only at the inner angle yellow-brown, not red-brown, in the ♀ uniformly yellow-brown. Examples from the volcano Chiriqui in Costa Rica, which I therefore call **chiriquensis** *form. nov.*, are distinguished from typical specimens from Mexico, Honduras, etc., by brighter colouring and also by a much broader spot in the cell of the forewing. In the ♂ the distal margin of the hindwing is broadly coloured with red-brown near the dark border and proximally distinctly defined by the transparent basal part.
- relata*. **D. relata** Btlr. & Druce, from Costa Rica, has a blackish base to the forewing, blackish apex to the hindwing and a broad, vitreous oblique band on the hindwing, especially in the ♀. — **olyras** Fldr. (36 e) is a very similar, larger and much more brightly coloured form from Colombia, which recalls *Olyras montagui* and *Ceratinia excelsa* by the vitreous oblique band of the hindwing, especially on the underside (which is not visible in the figure) and other markings. In the ♀ the hyaline spots of the forewing and the oblique band of the hindwing are yellow. — **lonera** Btlr. & Druce is another, similar form from Costa Rica with blackish spot at the median of the forewing and blackish veins. The disc of the hindwing is colourless. The abdomen is beneath black-brown, not yellow as in *olyras*.
- jemina*. **D. jemina** Hbn. (36 e ♂, ♀) has a dark spot in the middle of the cell of the forewing and red-brown inner margin and median. The hindwing in the ♂ is blackish at the inner margin, in the ♀ with spots across the dark median veins. The species varies somewhat, the ground-colour ranging from pale red-brown to yellow; it occurs in Colombia and Venezuela, but is said also to be found in Nicaragua (= *jambe* Dbl. & Hew.). — **bairdi** Reak. is said to be similar to *jemina*, with black inner margin of the forewing. The basal half of the hindwing is ochreous, the distal half blackish with black veins. — **euchytma** Fldr. (36 f ♂, ♀) has shorter wings and red-brown inner margin. Across the cell runs a forked, black oblique band and through the cell a half-band. The hindwing has broad distal margin. The ground-colour of this wing is yellowish with red-brown veins. In Colombia and Venezuela; common.
- visina*. **D. visina** Hsch. (36 f), from eastern Ecuador, has almost colourless wings with very slight whitish smears, as in *olyras*. The median of the forewing is broadly red-brown.
- sunu*. **D. sunu** Hsch., from western Ecuador, is a very similar, smaller species, in which only the club of the antenna is yellow-brown. The spot in the cell of the forewing is linear, as in *marica*. In the ♀ the subcostal of the forewing is also red-brown, as well as the veins in the disc of the hindwing.
- marica*. **D. marica** Fldr. (36 f ♂, ♀), from Venezuela, and **steinheili** Stgr., from Colombia, are two nearly allied forms with black antennae. In *marica* the patches at the end of the cell and the apex are yellowish, in *steinheili* whitish.

D. mantura Hew. (36 g) may be recognized by the broad band across the end of the cell of the forewing *mantura*. to the distal margin. In this it recalls some *Thyridia* and *Aprotopos*. Bolivia.

D. loreta Hsch. (36 g), from Ecuador, is a similar, larger species, without the band in the hindwing. *loreta*.

D. xanthophane Hpffr., from Peru, has narrower, dark margins and vivid sulphur-yellow veins in the *xantho-* disc of the hindwing, as well as a yellow base on the underside of the wing. *phane*.

D. dero Hbn. (= *celtina* Burm.) (36 g ♂, ♀) is somewhat smaller, with short, yellowish club to the *dero*. antenna. The band across the middle of the cell of the forewing is somewhat curved. In the ♀ the margins and bands are broader. Southern Brazil to Paraguay and Argentina; very common. — **rhoeo** Fldr. is an allied form *rhoeo*. from northern Brazil, with ochre-yellow colour, also on the veins, particularly in the hindwing.

D. hugia Schaus, from Bolivia, is said to have yellow-grey wings with brown veins and margins, which *hugia*. are broadest at the end of the veins; with yellow spots at the end of the cell and the distal margin.

D. honrathi Srka. (36 g) is a rare species from Chanchamayo in Peru, with delicate, blackish margins, *honrathi*. without spot through the cell of the forewing; with larger, whitish dots at the apex of the hindwing.

D. vandona Hsch. (37 a) recalls the similar species of *Ceratinia*, *Napeogenes*, etc., by the red-brown *vandona*. patch at the inner angle of the hindwing. The wings are otherwise colourless except for the yellowish base of the hindwing; the dark distal margins sharply defined. It flies together with ab. **immaculata** Hsch., in which *immaculata*. the red-brown patch at the inner angle is absent, in the eastern Andes of Ecuador at the upper Pastaza River.

D. lorica Weym., from Guiana, is a smaller, colourless species with narrow, brown margins, without *lorica*. band across the end of the cell of the forewing.

The beautiful **D. varina** Hew. (37 a), from the eastern Andes in Ecuador, is a very distinct, brightly *varina*. coloured and rare species. The base of the forewing and the hindwing are delicate red-brown; the apex of the forewing black; across the end of the cell a broad yellow macular band with 3 dark spots: all semitransparent. — In ab. **partita** Hsch. the yellow oblique band is broken up into separate spots by a black band across the end of *partita*. the cell.

D. pulcheria Hew., from Ecuador, has the hindwing and the base of the forewing orange-coloured. *pulcheria*. The greater part of the forewing is blackish with yellow spots in and below the cell.

D. euteles Ersch., from Cayenne, is not known to me. *euteles*.

D. lenea Cr. (♀ = *melanida* Cr.) (37 a ♂, ♀), from the north-east of South America, has in the hindwing *lenea*. a peculiar, blackish longitudinal band, which is interrupted at the apex. Between this and the dark distal margin the colour is red-brown, proximally yellow in the ♂, reddish in the ♀. The forewing has a yellow oblique band; the base is red-brown, apex and end of the cell are black. — **elvira** Weym. is a very similar form, in which the *elvira*. black and the red-brown band completely surround the apex.

D. methonella Weym. (37 a) has yellowish wings with black margins and half-band across the end of *methonella*. the cell of the forewing. Behind the end of the cell of the forewing and in the disc of the hindwing the veins are partly yellow-brown. In the ♀ the margins are much broader and in the cell of the forewing there is a triangular spot at the median. It flies in southern Brazil and Paraguay. — **xantho** Fldr., from Central Brazil, is a similar *xantho*. form with yellow-brown spot in the cell of the forewing, yellow-brown veins in the hindwing and stronger yellow dusting. Larva according to W. MÜLLER on *Solanum*; the body is cylindrical, without appendages, greenish, the head very large. The pupa is short, at the ventral side strongly convex, transparent green, the greater part with a golden gloss. — **D. hulda** Fldr., from Venezuela, is said to be similar to *xantho*, but larger, with narrower *hulda*. subapical spots in the forewing and without yellow-brown in the cell.

In **D. obfuscata** Btlr., from the Upper Amazon, the base of the forewing is black. The spots at the distal *obfuscata*. margin yellowish. Hindwing near the base of the inner margin with large, transparent brownish spot and 2 smaller ones at the apex.

D. zelia Guér., from Bolivia, is said to be allied to *dero*, with black margins and band across the end *zelie*. of the cell. Veins at the base of the hindwing yellow.

D. epidero Bates, from the Amazons, has on the hindwing from the costal to the distal margin a black *epidero*. transverse band, like *Thyridia confusa*; in the cell of the forewing a triangular, black spot is placed at the median. — In ab. **signata** ab. nov. Stgr. i. l. (37 b) there are red-brown spots in the black distal margin of the hindwing, *signata*. sometimes also at the base of the forewing.

21. Genus: **Epithomia** Godm. & Salv.

This genus only contains a few forms, which were formerly placed in *Dircenna*. The species are distinguishable especially by the short hairy palpi, the 5-jointed tarsi of the ♀♀, and also by the presence of the upper discocel-

lular in the hindwing. Superficially they resembles some species of *Callithomia*, *Ithomia* and *Calloleria*. Their area of distribution is confined to north-west South America and Panama.

agrippina. **E. agrippina** Hew. (= *callipero* Bates, ♀ *balboa* Bates) is the same size as the figured *alpo*. Base of the forewing and the hindwing red-brown, the latter with broad, dark margin. Forewing with 2 yellow oblique bands across the end of the cell and at the apex, as well as a spot between these at the distal margin. The rest of the apical half is blackish, also a spot in the cell. The species flies in Colombia and Panama. — In a form *fumantis*. from Colombia, which I call **fumantis** *form. nov.*, the dark margin of the hindwing is proximally spot-like, irregular, widened almost to the cell. The ground-colour is darker. The white marginal spots of the under surface are very large.

alpo. **E. alpo** Fldr. (37 b) has semitransparent wings with diffuse, yellow-brown colouring and similar markings to *agrippina*. — In a form which like *alpo* comes from Venezuela, there is a median band in the hindwing which *nikita*. is composed of 3 angular, dark spots. I call this form **nikita** *form. nov.*

22. Genus: **Ithomia** Hbn.

Formerly most of the small, transparent forms of the family were included under this name. At the present time we understand by it a smaller, but still numerous group whose best distinguishing characters are the large, oval scent-spot of the ♂♂ and the long cell of the hindwing with angled lower discocellular. Very striking in many ♂♂, e. g. *hyala* (37 c), are the large broad forewing and small hindwing; in the latter the costal margin is strongly arched anteriorly by the scent-spot. In the ♀ the cell of the hindwing is cut off rather straight, a vein extending into the cell. The variety of colour and form in this genus is very great; it contains both gay-coloured species which closely resemble certain *Ceratinia* and *Napeogenes* and also inconspicuous, colourless forms, which are mimicked by species in the following genera. The area of distribution of the genus is correspondingly also a very large one, including the whole of the Neotropical Region. North-Western South America, however, produces the most representatives of this, as also of other genera.

heraldica. **I. heraldica** Bates (37 b), from Costa Rica, has black-brown forewing with red-brown base, 3 yellowish *plaginota*. macular oblique bands and whitish subapical dots. The hindwing is red-brown with dark distal margin. — **plaginota** Btlr. & Druce (37 b) is a similar, larger and more brightly coloured form from the same district. In it the yellow subapical and marginal dots are more strongly developed; but of the oblique bands only the distal one and the half of the median band in the cell are yellow. The base of the forewing is more broadly red-brown.

celestia. In **I. celestia** Hew. (37 c), from Colombia, the oblique bands are broken up into smaller spots. The *lurida*. distal margin of the hindwing is broader and in it are placed yellow dots. — **lurida** Hsch. is a local form of the preceding from the Cauca Valley in Colombia with very large, band-like spots in the disc of the forewing and *candescens*. large dots in the apex of the forewing and the distal margin of the hindwing. — **candescens** Hsch. is a form of *splendens*. *celestia* from Colombia and Venezuela with white instead of yellow spots and dots. — **splendens** Hsch. is coloured like *candescens*, but with very large, white spots and dots, corresponding to *lurida*.

iphianassa. **I. iphianassa** Dbl. & Hew. is a somewhat smaller, very variable species, of which *anaphissa* (37 c), *panamensis* (37 c) and others are merely local forms. *iphianassa*, from Venezuela, best represents the *Lycorea*-habitus and the pattern of the other forms can be derived from it. The scheme of markings is the same as in *anaphissa*, but the base of the forewing and the hindwing yellow-brown. The latter with undulate distal margin and black-brown longitudinal band, bent in hook-shape at the apex. The basal area, especially in the ♂, is lighter yellowish, semitransparent, with dark dots at the end of the cell. The forewing has an indistinct, yellow-brown median band and a yellow subapical band; between them is placed at the distal margin a roundish, yellowish spot. The rest of the apex and 2 spots in the basal part are black-brown; apex with 2 or more whitish marginal dots. In **anaphissa** H.-Schäff. (= *pepita* Oberth.) (37 c), from Colombia, the distal margin of the hindwing and the median band are united into a broad, black distal margin; also the apical half of the forewing is more *panamensis*. broadly black with larger, white marginal dots. — **panamensis** Bates (37 c), from Panama, has a much broader, dark distal margin to the hindwing, which reaches to the end of the cell. The yellow subapical band of the forewing *lycaste*. is entirely suppressed except for 4 very small spots. This form strongly recalls *Mechanitis macrinus*. — **lycaste** F. *negrita*. is a very similar form from Kansas in North America with still more strongly black markings. — **negrita** Reak., from California, is another allied form, in which the black median spot of the forewing is enlarged, half of it *boucardi*. being on the hindwing. — In **boucardi** Druce, from Panama, the yellow median band of the forewing is absent. The whole basal half is yellow-brown with large, black median spot. The broad distal margin of the hindwing *pumensis*. and a spot at the end of the cell are black. — As **pumensis** REAKERT designates a form of *iphianassa*, from Venezuela, with larger black spots and red-brown basal part, without the yellow median band. The yellowish spot at the distal margin is very small. The forewing has 3 white dots at the distal margin.

I. phanessa H.-Schäff. and **alienassa** Hsch. (37 d), from Colombia, have transparent yellowish wings. *phanessa* has broad, yellow-brown submarginal distal border to the hindwing and in the cell of the forewing an isolated, triangular spot. In *alienassa* the distal margin of the hindwing is black-brown with red-brown macular streak, and across the middle of the cell of the forewing there is a dark half-band. *phanessa*. *alienassa*.

I. cleora Hew. (= *chimborazana* Reak., *spruceana* Bates) (37 c ♂, ♀), from western Ecuador, was formerly often confused with the preceding two. It may, however, be recognised at once by the long, pointed, black spot in the cell of the hindwing. On the other hand the red-brown colouring varies very much. There are ♂♂ in which this is almost entirely absent and ♀♀ in which the basal half of the forewing and of the hindwing are almost entirely red-brown.

I. epona Hew. (37 d) has transparent smoke-brown wings with darker margins; half-band across the end of the cell of the forewing, as well as median spot in the cell. In the ♀ the distal margin of the hindwing is broader, with whitish dots. The species flies in the mountains of eastern Ecuador at elevations of 1500—3000 metres together with the similar *Dismenitis hewitsoni*. *epona*.

I. xenos Bates (37 d) is a similar species with narrower wings, from Costa Rica. The forewing has slightly yellowish patch and a dark half-band through the middle of the cell. The distal border of the hindwing in the ♂ is very narrow. In the rare ♀ the margins and patches are broader, at the median of the forewing and on the hindwing proximally red-brown. *xenos*.

I. ulla Hew. (= *radata* Weym.) (37 e) is another species from Colombia, but with peculiar neuration. *ulla*. BOISDUVAL erected for it the genus *Tagyris*. The forewing is very broad; the discocellulars close the cell in arc-shape and form an acute angle with the very small third section of the median vein. The scent-spot of the hindwing terminates with a neck at the end of the cell, as in *Hypoleria*-species. *ulla* has behind the band at the end of the cell of the forewing a yellowish patch and a yellow-brown subcostal. In the ♀ the margins are broader and there is also a half-band across the end of the cell of the hindwing. — The same neuration is found in **dimidiata** Stgr., *dimidiata*, from the Cauca Valley and eastern Ecuador. This species has slightly smoke-brown wings with brown margins, but without half-band across the end of the cell and without yellow patch.

Another similar species is **I. mira** Stgr., from the Amazons, but with different neuration, red-brown subcostal and small spot at the end of the cell of the forewing. *mira*.

I. peruana Salv. (= *abendrothi* Hpfr.) (37 d) has transparent, yellowish wings with broad, black margins and half-bands across the end of the cell and through the cell of the forewing. It occurs at Chanchamayo in eastern Peru. *peruana*.

I. linda Hew. (37 d), from Ecuador, has exactly the appearance of *Ceratinia antea* and *Napeogenes glycera*, with which it also flies in company. It is somewhat smaller and the ♂ is conspicuous by the broad costal margin of the hindwing. — **theuda** Hew., likewise from Ecuador, is a very similar species with somewhat yellowish wings and black antenna, whilst in true *linda* the club of the antenna is yellowish. *linda*. *theuda*.

I. nigrimargo Btlr., from Ecuador, approximates to the preceding, but has a red-brown spot at the anal angle of the hindwing and is hence very similar to *Ceratinia adelinda* and other forms. *nigrimargo*.

I. lagusa Hew., from Colombia, and **I. hymettia** Stgr. (37 d), from the Cauca Valley, strongly recall certain *Napeogenes*-species. The neuration of the ♂♂ almost exactly agrees with that of this genus in the long cell of the hindwing with the lower discocellular only weakly curved proximad. The forms may, however, be recognized with certainty by the scent-spot of the ♂♂ and the recurrent cell-vein in the ♀. In *lagusa* ♂ the basal third of the forewing is black-brown with oblong yellow-brown spot and broad half-band at the end of the cell. In the ♀ the dark margins at the base are narrower, at the apex and at the distal margin of the hindwing on the contrary broader. *hymettia* has colourless wings, broad inner margin to the forewing and yellow-brown streak at the median; further a half-band at the end of the cell and in the ♂ narrow, in the ♀ broad, dark margins to both wings. *lagusa*. *hymettia*.

The beautiful **I. ellara** Hew. (37 e), from Bolivia, has colourless wings with broad black margins and patches at the end of the cell and in the cell of the forewing, and large, transparent marginal spots. On the under surface the markings are for the most part brown-red. The antenna has a yellow-brown club. — The very similar **eleonora** Hsch., from the border of Peru and Bolivia, has narrower distal margins, without the transparent marginal spots, but at the costal margin of the forewing a suggestion of a subapical band, and also black antenna. — In an aberration, which I call ab. **beata** ab. nov., there is a large, yellow-brown spot in the distal margin at the inner angle of the hindwing above. — **avella** Hew. (♀ = *cesleria* Hew.) (37 e), from Colombia, is a similar, smaller species with red-brown subcostal to the forewing and without the dark colouring in the cell of the hindwing. The ♂ has considerably narrower margins and patches than the figured ♀. *ellara*. *eleonora*. *beata*. *avella*.

The ♂ of **I. hyala** Hew. (37 e) is conspicuous by the broad forewing and small hindwing. The wings are slightly smoke-brown with dark margins and 2 half-bands through the cell and at its end. The base of the hindwing is yellow beneath. In the ♀ the wings have the usual shape, somewhat as in *diasia*. *hyala*.

- diasia*. **I. diasia** Hew. (37 f) is a similarly marked species, without the striking forewing of the ♂♂, with glossy bluish wings margined with black. On the under surface the margins in this species are also black in exceptional cases except for the costal margin of the hindwing, which is brown and at the base yellow.
- ossuna*. As **I. ossuna** spec. nov. I designate an interesting species from Colombia, which is similar in pattern and colouring to the preceding species except for the distal margin of the forewing. This is much widened before the inner angle and red-brown.
- hippocrenis*. **I. hippocrenis** Bates, from southern Central America, is similar to *diasia*, but has a much broader spot at the end of the cell of the forewing and also a white patch, as well as red-brown margins on the under surface. —
- morena*. **morena** Hsch. is another similar form from western Ecuador. The wings are colourless; the markings as in *diasia*, only the half-band in the cell is reduced, and the margins are beneath red-brown with dark edges.
- aelia*. **I. aelia** Hew. (= *centromaculata* Weym.) (37 g) has whitish-dusted forewing with dark margins and veins, as well as broad band across the end of the cell of the forewing. The hindwing is light red-brown with dark costal and distal margins. This rare species flies in Eastern Colombia.
- jucunda*. **I. jucunda** Godm. & Salv., from Panama, has similar forewing, but colourless hindwing with broad, black-brown distal margin and a red-brown spot in it near the inner angle. The species thus recalls *ossuna* and
- galata*. is distinguished by the absence of the half-band in the cell of the forewing. — **galata** Hew., from Colombia, is also similar, with narrower band at the end of the cell of the forewing, and moreover yellow-brown, dark-edged distal margin to the hindwing.
- patilla*. **I. patilla** Hew. (= *psyche* Bates) (37 f), from Central America, has a black-brown apical half to the forewing with a large white subapical patch; the base and the hindwing are colourless, with dark red-brown
- leila*. margins. — **leila** Hew., from Mexico, is larger, with broader bands and spots, and white dots in the apex of the forewing and at the distal margin of the hindwing.
- terra*. **I. terra** Hew. (37 f), as well as **terrana** Hsch. and a third form, which I call **vulcana** form. nov., may be
- terrana*. recognized by the broadly dark-margined veins at the end of the cell of the hindwing. *terra* is one of the most
- vulcana*. widely distributed and commonest Ithomias; it occurs in north-western South America, from Colombia and Venezuela to Bolivia. The wings are transparent, shiny bluish, with triangular, black spot at the end of the cell of the forewing and small white spots near it at the costal margin. The black margins of the upper surface are beneath red-brown with dark edges. Whilst *terra* occurs in the eastern part of the Andes in Ecuador, the smaller *terrana* is found in the west. The wings in this form are colourless, with broader margins and large, white patch at the apex of the forewing. On the under surface the colour of the margins is yellow-brown. *vulcana*, from Costa Rica, has the colouring as *terrana*, with narrower, black-grey margins and smaller white patch. In size it is intermediate between *terra* and *terrana*. On the under surface the margins are yellow-brown with fine, dark border. The scent-spot of the ♂ in *vulcana* is yellow-brown, in the other two forms black-brown.
- derasa*. **I. derasa** Hew. (= *mellilla* Weym., *soligena* Weym.) (37 f) has dark-shaded veins at the end of the cell of the hindwing, like the very similar *Napeogenes lamia* and *Scada ethica*, which species likewise have yellow-dusted wings. *derasa* was described by HEWITSON from Nicaragua. But I find no difference between it and the
- travella*. form described from eastern Ecuador by WEYMER as *soligena*. — From thence also comes **travella** Hsch., which is similar to the preceding; but the dark marking at the end of the cell of the hindwing is absent and the band
- salapia*. at the end of the cell of the forewing is broader. — **salapia** Hew. (37 f) has the wings more weakly dusted with yellow and broader, black margins, without white dots in the anal margin and with red-brown central line in the margins of the underside.
- drymo*. **I. drymo** Hbn. (= *diaphana* Cr., *phono* Geyer) (37 g ♂, ♀) is a small, inconspicuous species, common in Brazil, with colourless, dark-margined wings and broad half-band across the end of the cell of the forewing. At the costal margin follows a small, white spot. In the ♀ the margins are somewhat broader and across the
- napho*. end of the cell of the hindwing is placed a triangular, dark spot. — **napho** H.-Schäff. (= *phono* Hew. p., *naxo* Oberth.), from Colombia, is a very similar form with slightly smoke-brown wings and without the spot at the
- pellucida*. discocellular of the hindwing in both sexes. — **pellucida** Weym. is also a very similar species with longer oblique band at the end of the cell of the forewing. It is said to occur both on Trinidad and in Brazil.
- agnosia*. **I. agnosia** Hew. (37 f), from Colombia and Venezuela to Peru, is a common species with similar markings to the preceding, but distinguishable by the large, white patch at the end of the cell of the forewing.
- pseudo-agalla*. **I. pseudo-agalla** Reb. (37 g), from western Ecuador, has smoke-brown wings with dark margins; yellow spot at the end of the cell and yellow-brown median vein on the forewing.
- oenanthe*. **I. oenanthe** Weym. (37 g) has more pointed forewing with brownish margins, which are vivid yellow-brown on the under surface. The half-band at the end of the cell of the forewing is pointed. It flies in the Cauca Valley of Colombia and is closely allied to *terra*.
- salcata*. **I. salcata** Schaus, from Colombia, is said to have transparent, whitish wings, with black-brown veins and margins. Forewing sparsely scaled with white at the end of the cell and the costal margin. On the under

surface the margins are light reddish brown with dark edges; forewing with 3 white apical spots. Hindwing yellowish at the costal margin, at the distal margin with small, white dots.

Whilst in the forms already dealt with the dark oblique band of the forewing was more or less distinctly forked, in the following otherwise similar species it is simple, tapering to a point posteriorly.

I. amarilla Hsch. (37 g) has very similar markings and colouring to *travella*, but the oblique band is *amarilla*, gradually pointed posteriorly. It flies with the latter on the upper Napo.

I. aquinia Hpffr., from Peru, is very similar to *salapia*, but with a simple oblique band. The 3rd median *aquinia* vein is not darkly coloured.

I. ardea Hew. (38 a) is very similar to *agnosia*, with the oblique band on the forewing prolonged to the *ardea* distal margin. It varies much in size and flies in Bolivia.

I. drogheda and **hamlini** Weeks, from Venezuela, are not known to me.

drogheda.
hamlini.

23. Genus: **Calloleria** Godm. & Salv.

Here belong a number of smaller forms which are almost all nearly allied and have mostly a red-brown ground-colour, with yellow oblique band on the forewing. The neurulation of the ♂♂ shows in the hindwing between costal and subcostal on the under surface a raised ridge, as well as an indistinctly angled lower discocellular with very long lower and very short upper divisions, so that it appears almost without angle; moreover with recurrent cell-veins as continuation of the lower radial. In the ♀ the neurulation is very similar except for the raised ridge.

The area of distribution extends over northern South America and the Isthmus of Panama to Costa Rica.

C. dorilla Bates (38 a), from Panama and Costa Rica, has between the red-brown base and the black- *dorilla*. brown apex an irregular, yellow oblique band which is connected with a yellow spot placed at the inner margin. The triangular, dark spot in the middle of the cell is mostly only indistinct; on the other hand the two at the end of the cell are very large and connected. In the apex are placed a larger and a smaller yellow spot, as well as several yellow dots at the distal margin. The hindwing is red-brown with dark distal margin and spot at the end of the cell. — The very similar **azara** Hew. (38 a), from eastern Ecuador and Colombia, has lighter, narrower *azara*. wings. The two spots at the end of the cell are smaller than in *dorilla*, so that the yellow oblique band is broader at the costal margin. Only one of the yellow dots at the distal margin is present here. The distal border of the hindwing is broader. — **tutia** Hew. (38 a) has even more transparent wings with narrower yellow oblique band *tutia*. and smaller apical spots; between the two appears another large, transparent, yellowish subapical spot. The hindwing has narrow distal margin and a distinct longitudinal band. This form flies in Venezuela and Costa Rica. — **tosca** Schaus, from Colombia, is a local form with yellow apex to the forewing and yellow colour between *tosca*. the median band of the hindwing and the distal margin. — **chanchamaya** Hsch. has similar markings to *tutia*, *chanchamaya*. without the yellow spots in the apex of the forewing, with stronger, black macular band in the disc of the hindwing and yellowish colouring between the disc and the costal margin. It flies at Chanchamayo in Peru.

In true **C. hopfferi** Weym. the yellow oblique band in the forewing is absent, the specimen figured represents *hopfferi*. a local form, which I call **onoma** *form. nov.* (38 a). Both forms fly on the Upper Amazon; they may be recognised *onoma*. by the red-brown colour of the large subapical spot of the forewing and resemble *Ceratinia pardalis* resp. *tigrina*. The marking is otherwise similar to that of *chanchamaya*. The distal margin of the hindwing, especially in *hopfferi*, is broken up into several spots.

C. poecila Bates (38 a) is a commoner, widely distributed species from Colombia, Ecuador and the *poecila*. Upper Amazon. It has a broad, distally dentate yellow oblique band and at the end of the cell 2 separated, roundish black spots. — **callichroma** is the name given by STAUDINGER to a form of *poecila* from Ecuador with narrow, yellow *callichroma*. band. — In **poecilana** Hsch., from eastern Ecuador, the median band of the hindwing is united with the distal *poecilana*. margin into a large, blackish spot. — In **azarina** Weym., also from Ecuador, there is a large black spot in the *azarina*. disc of the hindwing, which reaches to the base. — **nigronascens** Hsch., from the Upper Amazon, has the hindwing *nigronas-* black except the apex, which remains red-brown. *cens.*

C. selenides Weym. (38 a), from the Upper Amazon, has a yellow oblique band, widened in the middle *selenides*. towards the apex, which is also proximally bordered with black. The broad median band of the hindwing is continuous.

C. porrecta Hsch., from Bolivia, has longer, narrower wings, narrow yellow oblique band, similar to *porrecta*. *tutia*, and large blackish spots at the end of the cell. The hindwing has 3—4 sagittate spots in the disc. In the blackish apex of the forewing is placed a lighter, sometimes yellow-brown patch.

C. robusta Hsch., from Bolivia, is the same size as *dorilla*. The narrow, yellow oblique band is broken *robusta*. up into 2 spots. The hindwing is narrow, with dark margin. — In **fuscens** Hsch., the oblique band is also broken *fuscens*. up into spots, but its colour is the same as the ground-colour: transparent, faintly red-brown. The hindwing has 3 sagittate spots in the disc and narrow, proximally dentate distal border.

- singularis*. **C. singularis** *Reb.* is a form from western Ecuador with narrow, delicate wings. The yellow oblique band is narrow, not dentate towards the apex, provided with a projection towards the base. The median band of the forewing is broad, shadowy. The antenna is dark with brownish club.
- melanoptera*. **C. melanoptera** *Hew.*, from Ecuador, is a peculiar form with blackish wings, the cells of which are transparent yellowish brown, as also 3 larger spots at the distal margin of the forewing. On the under surface there are some quadrate reddish spots at the distal margin of the hindwing. It appears to be a melanistic aberration.
- nise*. **C. nise** *Cr.* (♀ = *selene Cr.*) (38 b ♂, ♀) has a yellowish, broad oblique band in the forewing, reaching to the inner angle, where it is strongly denticulate. The ground-colour in the ♂ is faintly red-brown, in the ♀ dark red-brown. The hindwing has a narrow median band, which is connected with the costal margin in bow-shape and in the ♂ forms the border of a transparent, light longitudinal band. *nise* flies on the Lower Amazon, as well as in Guiana and Venezuela. — **C. peruensis** *Hsch.* (38 b) is a similar form from the Upper Amazon, from Peru. The ground-colour is light red-brown in both sexes, with transparent longitudinal band at the base of the hindwing. The yellow oblique band of the forewing is still broader, not transparent, with small dark spots at the end of the cell. The dark spot in the cell is very faint. — **C. espriella** *Hew.*, from Ecuador, is a more strongly coloured form with dark apex to the forewing, without the transparent longitudinal band in the hindwing. — As **C. tarapotis** *form. nov.* I designate a form from the Lower Amazon, in which the yellow oblique band is almost entirely absent except for an indistinct spot at the costal margin. The colour, as in *espriella*, is vivid red-brown to the apex.
- radiosa*. In **C. radiosa** *Hsch.*, from eastern Ecuador, the apical half of the forewing is blackish, with radiate, yellow macular band. The dark spot at the base is elongate-pointed. The hindwing has a macular median band and dentate, dark distal margin.
- cayana*. **C. cayana** *Salv.* (38 b), from Guiana, has in the blackish apex a peculiarly formed, yellow oblique band with approximated spot at the inner angle. The spot in the cell is absent. The hindwing has a broad median band and both wings whitish marginal dots.
- jolaia*. **C. jolaia** *Hew.* (38 b), from Colombia, resembles *Napeogenes stella*. In the disc of the forewing there are a number of yellow spots, and in the distal margin of both wings large, yellow marginal dots; in the cell of the forewing a black, rounded spot and at the apex of the hindwing the commencement of a median band. — *conveniensi*. In **C. conveniens** *Hsch.* the spots in the forewing are united into an angular band at the end of the cell.
- doto*. **C. doto** *Hbn.* (38 b), from the Lower Amazon, is a very aberrant species with diaphanous wings; the margins and the discocellular of the forewing are margined with dark. The median of the forewing and a broad submarginal band on the hindwing are yellow-brown.

24. Genus: **Hyposcada** *Godm. & Salv.*

It is not possible to differentiate this genus very sharply from *Leucothyris*, as there is a gradual transition in the characters. Thus a number of forms which approximate to one another, as *ilerdina* and *ina*, have been placed in two different genera. I therefore only leave in this genus the forms which are allied to the typical species and place the others with the similar forms of *Leucothyris*.

Hyposcada is distinguishable by the long, thin antennae and the short cell of the hindwing. Costal and subcostal run at a distance from one another. Upper and middle discocellulars of the hindwing are short and almost equal in length. They are medium-sized butterflies of mostly red-brown ground-colour, which recall many species of *Ceratinia*. They occur especially in north-west South America, some also in Central America and are for the most part not common.

- adelphina*. **H. adelphina** *Bates* (38 c), from Colombia and Panama, has a broad, red-brown base to the forewing and red-brown hindwing with broad black distal margin. The rest of the forewing is black with a large number of white spots. Also at the apex of the hindwing are placed 2—3 white dots. The under surface is similarly marked to the upper. — **C. virginiana** *Hew.*, from Mexico and northern Central America, has narrower wings. The red-brown colour of the forewing reaches nearly to the end of the cell and the two white spots there are small and roundish. Especially worthy of note is the under surface, which is brown also in the whole apex of the forewing. — In a third form, from Costa Rica, which I call **C. evanides** *form. nov.*, the ground-colour of the forewing is black-brown except for two red-brown streaks at the base, and the same beneath. The wings are narrow as in *virginiana*, the white spots as in *adelphina*.
- consobrina*. **H. consobrina** *Godm. & Salv.* (38 c) is similar to the preceding, with larger, yellowish spots, without the two spots in the end of the cell of the forewing. It flies in eastern Ecuador, at the foot of the Andes.
- anchiala*. **H. anchiala** *Hew.*, from the Upper Amazon to Peru and Ecuador, has smaller white spots in the black apical half and a black streak at the median of the forewing, as well as black margins to the hindwing and a broad, spot-like median band in the disc.

H. abida Hew., from Colombia, is similar, somewhat smaller, without black streak over the median of *abida*, the forewing, with narrower median band on the hindwing. Both wings have small white marginal dots.

H. kezia Hew., from the Upper Amazon, has the markings like *anchiala*. But in the apex of the forewing *kezia*, there are only three white spots, the others are replaced by an irregular, yellow-brown band at the end of the cell. — In **rezia** Hsch. (38 c) the whole apex of the forewing is also yellow-brown except for the three indistinct whitish *rezia* spots, to each of which a black oblong spot is joined. This form flies on the Ucayali.

H. fallax Stgr. (38 c) is an interesting species from Chanchamayo in Peru, which strongly resembles *fallax*. *Ceratinia bicolora* and *semifulva*, as well as the larger *Mechanitis deceptus* and *Melinaca mothone*, by the black wings with broad red-brown bands. But it may be recognised, apart from the neurulation, by the long, thin black antenna and the differently placed black spots situated at the end of the cell and in the cell of the forewing.

H. aesion Godm. & Salv., from Panama, is similar to *abida*, smaller, without the white marginal dots *aesion*, and without the median band on the hindwing.

H. illinissa Hew., from the Upper Amazon, is similar to the preceding, with larger white spots and an *illinissa*, additional one in the cell of the forewing. The red-brown hindwing has in addition to the dark border a black submarginal band, curved correspondingly to the distal margin.

In **H. similia** H.-Schäff. (38 d) the whole base of both wings is black brown like the hindwing; on the *similia*, hindwing remains only a yellow-brown submarginal band at the distal margin.

25. Genus: **Leucothyris** Bdv.

This genus is as at present constituted rather extensive and might better be divided into several subgenera. Externally two principal groups are already differentiated: the first has shorter, rounded wings with broad whitish bands, often also with red-brown colour, especially at the apex of the forewing. The second has more pointed apex and peculiar whitish macular marking, especially at the apex and at the distal margin of the forewing, without brownish colouring. In the neurulation, however, both forms fluctuate between the typical short *Hyposcada*-cell of the hindwing and long thin antenna and long cell and shorter antenna with distinct club. In typical *Leucothyris* the costal and subcostal are said to run close together. The cell of the hindwing in the ♂ is longer anteriorly than posteriorly; the middle discocellular longer than the upper.

Considering the large number of forms which belong here it is not surprising that representatives of the genus are found in the whole Neotropical region; but as in most Ithomiids, the eastern slopes of the Andes from Colombia to Bolivia produce the greatest abundance of forms. The range of distribution of the separate forms is mostly very restricted. Almost every large river-valley has its distinct local form, which sometimes occurs there in great abundance, but a few hundred metres higher or lower, or about 10 miles to either side, is no longer met with.

On this account some forms of this and other genera remain for decades great rarities, until the restricted locality is at last revisited by some collector, who then obtains the coveted species in abundance.

L. ida Hsch. (38 d), from the Upper Napo in Ecuador, has black wings with milky vitreous spots and *ida*, a red-brown submarginal band on both wings. The latter is very broad in the apex of the forewing, as is also the case in a large number of similar forms. *ida* is distinguishable especially by the two white dots in the apex of the forewing, moreover the forewing has four white spots and a triangle at the base. The hindwing has a large whitish discal longitudinal band. In the ♂ the spots and band are smaller. — **idina** Hsch. is a smaller local *idina*, form from the Upper Amazon with indistinct dots in the apex of the forewing and broader, light red-brown apical band. Moreover, on the hindwing the red-brown submarginal band is lighter and broader. — **kena** Hew., from *kena*, eastern Ecuador, is considerably smaller than *ida*. The two vitreous spots at the apex of the forewing are confluent and completely enclosed by the red-brown subapical band. At the end of the cell three vitreous spots form an oblique band and the other three spots are also larger. — In **ilerdinoides** Stgr. (38 d) the two vitreous spots *ilerdinoides*, at the apex are absent, on the other hand there are two at the end of the cell. The red-brown subapical band of the forewing is broader. — Another similar form, which I call **lerda** form. nov., differs from the preceding in *lerda*, having only one spot at the end of the cell of the forewing, on the other hand there is another at the lower angle of the cell in the disc. These forms fly on the Upper Amazon, but each of them probably occurs in a separate district.

Whilst the preceding forms have a short cell, like *Hyposcada*, in the following, otherwise very similar forms, the middle discocellular of the forewing, and hence also the cell, begins to be appreciably longer anteriorly.

- ilerdina*. **L. ilerdina** Hew. (38 d), from Peru, which is regarded as type of the genus *Leucothyris*, differs superficially from *ilerdinoides* in the absence of the two vitreous spots at the end of the cell of the forewing.
- lerida*. **L. lerida** Kirby is similar to *kena*, but without the two apical vitreous spots. It flies on the Lower Napo.
- lerdina*. **L. lerdina** Stgr. (38 d), from Pebas on the Upper Amazon, is smaller than *ilerdina*. In it the two vitreous spots in the end of the cell and at the hinder angle of the forewing are united into a broad oblique band.
- lubilerda*. **L. lubilerda** Hsch., from eastern Colombia, is a similarly marked species, but may be recognised at once by the transparent vitreous spots, which in the other forms have a milky dusting.
- ilerda*. **L. ilerda** Hew., also from eastern Colombia, is a form similar to *ilerdina*, without the vitreous spot in the red-brown band.
- In the following forms the red-brown subapical band of the forewing is much narrower.
- sexmaculata*. **L. sexmaculata** Hsch. (38 d), from the Upper Napo in Ecuador, has 6 vitreous spots in the forewing, namely besides the two in the cell: one at the end of the cell, one at the hinder angle and 2 smaller ones at the distal margin. — In *confluens* Hsch., from the Napo, there are only 5 spots, and in *lota* Hew. (38 e) only 4. The latter form occurs at the base of the eastern Andes in Ecuador. It has a posteriorly forked, dark oblique band at the end of the cell, which in *confluens* is moreover connected with the inner margin, so that in the latter
- confluens*. a further vitreous spot is separated off. — *escura* Hsch. is a darkened form of *lota*, without the red-brown markings on the upper surface, and with brown-red instead of yellow-red colour on the under surface. The whitish dusting
- escura*. of the vitreous spots is weaker. — A form nearly allied to *escura*, from the Upper Amazon, which I call **praemona**
- praemona*. **form. nov.**, is distinguished by much broader black margins and bands. The costal and distal margins of the hindwing especially are much widened and leave in the disc only a vitreous longitudinal band, which is broader at the inner margin, as in *epicharme* (38 e).
- agarista*. **L. agarista** Fldr. (38 e). The red-brown colour is mostly much lighter than in the figure. This form may be recognised by the two large, connected vitreous spots in the apex of the forewing. It flies on the upper
- janarilla*. Rio Negro and the Upper Rio Napo. — **janarilla** Hew. is a very similar form from eastern Ecuador and Peru, without the red-brown colour on the upper surface, and without the whitish dusting in the disc of the hindwing.
- priscilla*. **L. priscilla** Hew. (38 f) and **gunilla** Hew., both from the Upper Amazon (Rio Juruá, Fonte Boa), are
- gunilla*. two rare, brightly coloured forms, with red-brown hindwing. *priscilla* has a submarginal band in addition to the dark distal margin on the hindwing. In *gunilla* only the commencement of this band is present in the apex. *priscilla* has in the dark brown forewing 4 vitreous spots and a basal triangle; in *gunilla* the vitreous spot at the hinder angle is wanting, the basal area is more extended and of a red-brown colour.
- tigilla*. **L. tigilla** Weym. (38 e) is a larger species from eastern Ecuador of similar appearance to *lota*, but without the fork of the oblique band and with broader wings.
- assimilis*. **L. assimilis** Hsch. is a very similar species from the same district, somewhat smaller, without the white spot at the costal margin and end of the cell of the forewing. The markings of the two forms also differ somewhat in other details. But they may be recognised especially by the neuration. The middle discocellular of the hindwing is considerably larger in *assimilis*, and the cell is consequently much larger.
- zelica*. **L. zelica** Hew. (38 f), from the western Andes of Ecuador, may be recognised by the yellowish colour of both wings. The pattern of the otherwise blackish apical half of the forewing consists of two subapical dots and two larger whitish spots at the end of the cell and the hinder angle. The hindwing is very broadly margined
- pagasa*. with black. — A similar form is **pagasa** Druce, from Panama and Costa Rica. The hindwing is like that of *zelica*, but the forewing has a broad band through the cell. The subapical spots are larger.
- aegle*. **L. aegle** F. (= *hippodamia* Hew.) (38 f). The wings are almost diaphanous with dark margins. In the forewing some oblique bands divide the vitreous area into a number of spots, namely besides the two in the cell: one each at the end of the cell and the hinder angle, as well as 2 smaller ones and 1—2 dots at the distal margin. A red-brown stripe traverses the distal margin of the hindwing. The species flies with the similar following form
- zarepha*. in Guiana. — **zarepha** Hew. (38 f) has at the end of the cell of the forewing a band-like row of spots to the hinder angle and 2 vitreous spots in the apex. On the under surface the white marginal dots are absent. Guiana.
- dolabella*. **L. dolabella** Hew. (38 e), from Bolivia, has a broad, white oblique band at the end of the cell of the forewing and a double spot at the apex; across the cell runs an incomplete, dark oblique band. The vitreous
- brisotis*. spots and the disc of the hindwing are dusted with white. — As **brisotis form. nov.** I designate another form, likewise from Bolivia, with narrow white oblique band on the forewing, especially at the end of the cell. The dark distal margin of the hindwing is strongly widened proximally.

I give the name of *flexibilis spec. nov.* to a species from northern Peru which is similar to *dolabella*. It is smaller and has a narrower whitish oblique band, constricted in the middle. At the hinder angle of the forewing is placed an oblong vitreous spot, as in *crispinilla*, from which *flexibilis* is distinguished by the double spot in the apex. — From Bolivia comes another very similar form, which I call *virina form. nov.* It has a white oblique band like *dolabella*, but the other vitreous spots are colourless, not dusted with white. At the hinder angle of the forewing there is a vitreous spot as in *flexibilis*, but the black oblique band across the end of the cell is quite narrow, linear from the median onwards.

L. perspicua Btlr. (38 e) is very similar to *janarilla*, considerably larger, with subapical band instead of the double spot, and also a pear-shaped spot at the hinder angle of the forewing. It flies with the allied *onega* and *epicharme* at the Upper Amazon. — *onega* Fldr. has a broader white oblique band on the forewing and the hindwing is black with a narrow, curved vitreous band behind the middle, which is shaded with dark at the inner margin. — In *epicharme* Fldr. (38 e) the vitreous band of the hindwing is broader, wedge-shaped, broadest at the inner margin.

L. amazona Hsch., from the Upper Amazon, is similar to the preceding, with uniformly broad oblique band on the forewing, without the vitreous spot at the hinder angle. — Another similar form, which I call *ramona form. nov.*, has colourless vitreous spots except for the white oblique band, the spot at the hinder angle being elongate-quadrate. The median band of the hindwing is narrowest in the middle, the broad costal margin forming an angle at the 2nd median vein. It flies near Sara-yacu on the Ucayali.

L. crispinilla Hpffr. (38 e), from eastern Peru, is distinguished from the preceding by whitish dusting and narrow black costal margin to the hindwing, which does not enter the cell.

A species very similar to the preceding, which I call *L. enania spec. nov.*, flies also in Peru. It is appreciably smaller and has different neurulation, as well as narrower bands and margins. Especially noteworthy is the black streak across the cell of the forewing, which is here placed in the prolongation of the 1st median vein, whilst in *crispinilla* it is nearer to the base.

L. didymaea Hew., from Bolivia, has a similar pattern to *virina*, without the double spot in the apex of the forewing. It may be recognised by the black oblique band across the end of the cell of the forewing, which forms a streak from the median to the distal margin, as well as by the narrow, uniformly broad distal margin of the hindwing.

In the following forms the band-like streak through the cell of the forewing is absent.

L. borilis spec. nov. I thus name a similar species to *didymaea*, from Pozuzo in South Peru, with the wings dusted with white, without the streak in the cell. The distal margin of the hindwing is much broader.

L. synnova Hew. (38 f). This rare and beautiful species is very strikingly distinguished by the orange colouring (in the figure this is too dark) from the otherwise similarly marked species, such as *ramona*, etc. According to BATES it only flies on the north bank of the Upper Amazon, near Tunantins.

L. quintina Fldr. (38 f) is said to come from Venezuela, I know it only from Bolivia and Peru. It has white-dusted wings with black margins and an oblique band at the end of the cell of the forewing, which is gradually narrowed posteriorly. — The very similar *alexina* Hew., from Peru and Bolivia, has colourless wings, only the subapical band of the forewing is dusted with white. The markings strongly recall *Ithomia ardea*, which, however, is distinguished by the neurulation.

Next follows another small group with broad, rounded wings and black streak through the cell of the forewing, of which *L. astraia* Cr. (39 b) is often mistaken for some other species. The typical form comes from Guiana. It has a broad, black oblique band on the forewing, which is only forked shortly before the distal margin; also quite faint red-brown colour in the distal margin of the hindwing. — *thimei* Oberth. (= *flora thimei* Hew. Exot. But. f. 68), from the Rio Magdalena in Colombia, is very similarly marked, but has no red-brown on the upper surface and beneath only at the base. Moreover, the distal margin of the hindwing is narrower and uniformly broad. — *flora* Cr., from Cayenne and Surinam, is a larger form with broad margins and bands and also red-brown markings in the distal margin of the hindwing. At the distal margin of the forewing 2 distinct white spots are marked off by the branches of the oblique band. — On the Lower Amazon flies a smaller form of *astraia*, with roundish apex to the forewing, which I call *antaxis form. nov.* It has a light red-brown, dark-bordered distal margin to the hindwing and a similar spot at the hinder angle of the forewing.

An extremely similar species from the Middle Amazon, which I call *L. stradopsis spec. nov.*, has different neurulation and more pointed apex to the forewing. The upper arm of the lower discocellular and also the middle discocellular are longer. The oblique band of the forewing is rather gradually narrowed beyond the 2nd median, the 3rd is not thickened,

In *L. egra* Hew. (39 b) the black oblique band of the forewing is very broad, runs on the 3rd median vein and is connected at the other side with the black inner margin. The species flies on the Amazons.

aquata. **L. aquata** Weym. (39 b), from Brazil, is similar to *astraea*, with narrower margins and bands. The oblique band at the end of the cell only extends a little beyond the inner angle. The black streak across the middle of the cell is said to be of uniform width in typical specimens. Many examples, however, occur in which it is wedge-shaped.

serdolis. In another species, which I call **L. serdolis** *spec. nov.*, a wedge-shaped oblique band runs from the end of the cell across the 3rd median vein, and the vitreous spots are dusted with white. The pattern otherwise the same as in *astraea*. This form flies on the Upper Amazon.

Here begins the 2nd principal group of *Leucothyris* with elongate, colourless wings, which bear delicate whitish spots. Of these one at the distal margin of the forewing between the 2nd and 3rd median veins is especially characteristic of the group, as it is placed so close to the distal border that the dark distal margin is always narrowed here. There are two similar whitish spots at the apex of the forewing. The neurulation of the hindwing is also very varied in this group. There occur both species with typical *Hyposcada*-neurulation and also very many in which the cell is considerably longer than in typical *Leucothyris*-species.

susiana. **L. susiana** Fldr. (38 g). This beautiful and rare species from the eastern Andes of Colombia and Ecuador has black wings with several rows of white vitreous spots. On the under surface the predominant colour is red-brown. The forewing has at the base an oblong spot, then follow 2 rows of white spots before and behind the end of the cell, and also 3 subapical spots and some white marginal dots. The hindwing shows in the disc a continuous white macular oblique band and large white double marginal dots. — *susanna* Stgr. is a very similar form from Colombia with smaller white spots and dots, but a broader yellowish oblique band on the hindwing.

cyrene. **L. cyrene** Latr. is similar to *susiana*, from the Upper Amazon and Peru. The position of the vitreous spots is somewhat different. The middle spot of the first row is absent and the band of the hindwing is widened at the inner margin. — A nearly allied form from Colombia, which I call **radina** *form. nov.*, has a double spot in the end of the cell of the forewing and behind it 3 vitreous spots. The oblique band of the hindwing is widened at the inner margin to the base. — *Napeogenes domiduca* Hew., from Bolivia, very closely resembles the *Leucothyris*-forms now under consideration, but belongs to the genus *Napeogenes*, as I have only recently been able to prove from typical specimens. It has a large basal vitreous area in the forewing and from the end of the cell to the hinder angle a broad macular band, divided at the costal margin. Cf. Additions, p. 165.

attalia. **L. attalia** Hew. (38 g) has a black spot in the end of the cell of the forewing and numerous vitreous spots in the apical half. The species flies in Bolivia and Peru. — **attalita** Hsch. is a much smaller form from Bolivia. The vitreous spots have a strong milky colouring and on the under surface the yellow-brown colour of *attalia* is here grey-brown.

taliata. **L. taliata** Hew., from Peru, has larger, contiguous vitreous spots in the disc of the forewing and a very broad vitreous band on the hindwing, as well as larger marginal dots on both wings.

solida. **L. solida** Weym. (38 g). Here the vitreous spot between the 2nd and 3rd median veins in the discal macular band of the forewing is the longest (in *taliata* it is the one between the 1st and 2nd veins). The large marginal dots are almost entirely absent. On the hindwing the vitreous band is narrower in the middle. — In *ab. completa* Hsch., which flies with the type in eastern Ecuador, the costal margin of the hindwing is black to beyond the cell, so that the vitreous band is narrower.

orestilla. **L. orestilla** Hew. (38 g) is the largest species of the true Ithomiids. The markings are similar to those of *solida*, with much larger vitreous spots. The third apical spot at the costal margin is absent. It flies in the eastern Andes of Colombia and Ecuador in thick mountain woods near the tree-limit at elevations of up to 3000 m.

valida. **L. valida** Hsch., from the borders of Peru and Bolivia, is the same size as *susiana* and resembles *completa*, without the white marginal spots on the upper surface. The small white dot between the end of the cell and the apex is in alignment with the two other subapical spots, and the vitreous spots at the hinder angle are larger.

fasciata. **L. fasciata** Hsch., from the Upper Pastaza in Ecuador, is smaller, with narrow black costal margin to the hindwing and spot across the end of the cell. It has a milky oblique band in the vitreous area of the hindwing, whilst in *solida*, which is otherwise similar, the whole disc is milky coloured.

deronda. **L. deronda** Hew. (39 a), from Peru and Bolivia, is distinguishable from the similar forms by the yellowish tinted forewing. In markings it is similar to the preceding forms, but the apex is much more narrowly black, so that the two apical vitreous spots are not defined proximally. — **derondina** (Stgr. i. l.) is a much smaller but otherwise extremely similar form from Bolivia with somewhat different neurulation. The second yellow spot at the costal margin of the forewing above is absent. The spot in the cell is narrower and in the ♀ the black spot is absent in the angle which the median forms with its 1. branch.

cytharista. **L. cytharista** Hew., from Peru, probably also belongs here. It is of the same size as *deronda* and has yellowish forewing with dentate distal margin and curved half-band across the end of the cell. The hindwing has a bluish white tone and broad distal margin, strongly dentate proximally, with large white dots: -

Under the name **L. athalina** (38 g) STAUDINGER united several similar forms. I regard as typical specimens according to STAUDINGER's figure those from Bolivia of which the ♀ bears a dark mark across the cell of the hindwing. The forewing is similar to that of *valida*, but the second white dot at the costal margin near the apex is absent. — The similar form from Colombia I call **tremona** *form. nov.* In the ♀ the dark mark on the median of the hindwing is absent and also the connecting triangle between the end of the cell and the inner margin. The half-band at the end of the cell is produced into a point at the 3rd median vein. — **banjana** Hsch. is the form from eastern Ecuador, which occurs at elevations of from 2—3000 m. The two apical vitreous spots are proximally bordered with black. The half-band at the end of the cell is as in *athalina*, but in the ♀ the dark mark on the median of the hindwing is absent. On the under surface the colour is brown-red, lightest in *tremona*: yellow-brown. — **santineza** Hsch. is a smaller form from Ecuador; it flies at elevations of from 1000—15000 m. The spot in the cell of the forewing in the ♂ is wedge-shaped, in the ♀ broader, with the extremity obtuse.

L. tabera Hew. (39 a), from the eastern Andes of Ecuador, has narrower half-bands across the end of the cell of the forewing and in the middle of the cell. The distal margin of the hindwing is very broadly edged with black. On the under surface the margins have dark brown-red markings. — In ab. **maerenda** Hsch. the apex of the forewing is broadly black with two vitreous spots. The hindwing has the distal half and the apex black.

The following forms have a narrower distal margin to the hindwing.

L. makrena Hew. (39 a), from Venezuela and Colombia, differs from the similar forms, such as *santineza*, etc., in the much narrower distal margin of the hindwing. The half-band at the end of the cell of the forewing is broad, the streak in the middle of the cell narrow. — **makrenita** Hsch. (39 a) is considerably smaller, it flies in eastern Ecuador. The markings are similar to those of *makrena*, behind the end of the cell of the forewing there is a white macular band.

L. baizana Hsch., likewise from the eastern Andes of Ecuador, may be recognised at once by the smoky brown colour and the long, narrow wings. The markings are similar to those of *makrena*. The dark brown distal border of the hindwing is proximally dentate at the veins

L. quadrata Hsch. (39 a), from eastern Ecuador, is smaller than the preceding and may be recognised by the broad wings and the 2 vitreous spots in the apex of the forewing. The wings have a bluish white sheen.

L. amalda Hew. (39 b), from Colombia, has very similar markings, but differs notably in the red-brown colour in the distal half of the hindwing. It flies together with the very similar *Pseudoscada lavinia*, but is easy to recognise by the dark streak in the cell of the forewing. — **amaldina** (Stgr. i. l.) is a smaller, more weakly marked form, likewise from Colombia. Its hindwing is diaphanous except for a yellow-brown distal margin.

L. modesta Hsch., from western Ecuador and Colombia, has similar markings to *quadrata*. The apex of the forewing is rounded; the half-band at the end of the cell is short, triangular; the dark distal border of the hindwing narrow.

L. bioculata Hsch., from Bolivia, is likewise a similar form to *makrenita*; with 2 vitreous spots in the apex of the forewing and indistinct streak in the cell. Beneath the margins are yellow-brown, with only 2 white dots in the apex of each wing.

L. epimakrena Hsch., from Bolivia, is about the same size as *makrena* and has similar markings. It may be recognised by having the distal border of the hindwing proximally dentate at the veins and a dark streak at the end of the cell. The wings are elongate; the spot in the middle of the cell of the forewing wedge-shaped.

L. zea Hew. (39 b) is one of the few but peculiar Ithomiids which occur in Mexico. Prominent characters are the brown-red margins and the presence of only one vitreous spot in the apex of the forewing. — **vicina** Salv. is a similar form, also with brown-red margins, from Costa Rica. It is smaller, the margins in the apex of the forewing are narrower. The spot at the end of the cell is triangular; the streak in the middle of the cell narrower.

L. caucana Stgr. (39 b), from the Cauca Valley in Colombia, has narrower margins and patches than *makrena*. The black streak in the middle of the cell is often entirely absent.

L. phemonö Dbl. & Hew. (= *morphenoë* H.-Schäff.) (39 b), from Colombia and Venezuela, has rounded wings with narrow margins and a narrow streak in the cell of the forewing. The subcostal of the forewing is red-brown; the whitish patches at the apex and distal margin are indistinct. — **burchelli** Sand., from the Rio Tocantins, is said to be nearly allied to the preceding form, but to be distinguished by broader margins and patches. Especially the dark oblique band across the end of the cell is prolonged and then continued as a distinct stripe on the 2nd median vein to the distal margin.

- rubescens.* **L. rubescens** Btlr. & Druce (39 c), from Costa Rica, has the margins partly red-brown, as in *vicina*, but a broad black-brown apex to the forewing, and also a broad white oblique band.
- The following forms have no dark streak in the cell of the forewing.
- inelegans.* **L. inelegans** Hew., from Ecuador, is of the same size as *susiana* and has vitreous wings with dark distal margins, strongly dentate proximally, especially in the hindwing. Across the end of the cell of the forewing is placed a half-band, with process at the 3rd median vein. On the under surface the margins are red-brown with white distal-marginal double spots.
- fumata.* **L. fumata** Hsch., from the Cauca Valley, is of the same size as *makrenita* and has narrow borders to the slightly smoke-brown wings and narrow half-band at the end of the cell of the forewing. Beneath the margins are light yellow-brown.
- manora.* **L. manora** Schaus, from Central Brazil, is said to have transparent bluish white wings with blackish margins and veins. In the apex of the forewing a vitreous spot, at the end of the cell a whitish patch.
- sarilis.* As **L. sarilis** spec. nov. I designate a form from the Upper Amazon, similar to *graciella*, with 2 vitreous spots in the black apex of the forewing. The half-band at the end of the cell has a projection above the 3rd median vein; the whole of the 2nd vein is broadly black.
- graciella.* **L. graciella** Oberth. (= *victorina* Hew.) (39 c), from the Upper Amazon, and **victorina** Guér., from Venezuela and Colombia, are very much alike. They have a broad black apex and a broad white oblique band at the end of the cell. In *graciella* the veins in the white oblique band are completely covered, whilst in *victorina*
- padilla.* the upper vein and half the second one appear black. — **padilla** Hew., from western Ecuador, is also very similar, with broader white oblique band, which reaches to the hinder angle, so that the 2nd median vein also
- paula.* is dusted with white. — **paula** Weym., from Central America, is likewise similar, with narrow white oblique band, broad, almost quadrangular, black spot at the end of the cell and red-brown costal margin, and also a red-brown spot at the hinder angle of the forewing and distal margin of the hindwing.
- estella.* **L. estella** Hew. (39 c), from eastern Ecuador, is a small species with broad black apex to the forewing and distal margin to the hindwing, the latter with a red-brown stripe, and also with a broad white oblique band in the forewing. On the under surface the dark margins have yellow-brown central stripes. — In Bolivia
- subosa.* occurs a similar form, which I call **subosa** form. nov. It has a narrower white oblique band and narrower distal margin to the hindwing. Moreover, the whole disc of the latter is whitish, together with the veins; in *estella* only at the apex, the rest being colourless with black veins.
- Finally I refer here 2 new forms, which are very different from the preceding, but according to the neururation agree best with *Leucothyris*.
- ferra.* **L. ferra** spec. nov. (39 d) strongly recalls by its markings species of *Thyridia*, *Aprotopos* and *Dircenna*. The wings are almost colourless with dark brown margins and a transverse band across the end of the cell of each wing. In the middle of the distal margin of the hindwing there are 3 white dots. The antenna has yellowish club. On the under surface all the distal margins have white marginal dots as far as the apex.
- thyridiana.* From southern Peru. — **thyridiana** form. nov. is a similar, larger form from Bolivia with black margins and bands and a triangular spot in the cell of the forewing. Otherwise the markings are as in the preceding. On the under surface a yellowish streak is placed behind the base of the hindwing.

26. Genus: **Episcada** Godm. & Salv.

This also is only a genus of convenience, whose characters are not sharply defined. Properly the upper discocellular of the hindwing should be entirely absent in the ♂, but mostly it is still feebly present. The habitus of the species referred to *Episcada* is always very different from that of *Leucothyris* and approaches much more that of the following genus *Pteronymia*. The lower discocellular in *Episcada* appears to be always very distinctly angled, whilst in *Leucothyris* the anterior arm disappears in the dark costal-marginal stripe. The cell of the hindwing in typical species is almost equally long anteriorly and posteriorly.

The species of *Episcada* are mostly not easy to recognise as such, since superficially they closely resemble certain species of *Pteronymia*. Only the ♂♂ are more certainly distinguishable by the upper discocellular and radial of the hindwing. The few species of *Episcada* are scattered over the whole Neotropical region and are generally not very common.

- salvinia.* **E. salvinia** Bates (39 d), from Guatemala, has delicate, almost colourless wings with narrow brown margins and half-band at the end of the cell of the forewing, and also a white spot at the costal margin. On
- rufocincta.* the underside the margins are lighter yellow-brown. — **rufocincta** Salv., from Mexico, is a similar form with yellow-brown margins, blackish streak at the inner margin of the forewing, and without white patch at the end of the cell.

- clausina.* **E. clausina** Hew. (39 d), from Bolivia, has dark brown margins and half-band with yellow spot at the end of the cell. The costal margin of the hindwing is yellow beneath. The subcostal of the forewing is
- striposis.* red-brown; in the ♀ also the inner margin. — In Central Brazil occurs a very similar form, which I call **striposis**

form. nov. It has additional yellow dusting in the end of the cell of the forewing and on the hindwing. On the under surface the margins are darker red-brown with blackish borders.

E. carcinia Schaus, from South Brazil, is said to have colourless wings with narrow margins and a *carcinia*. white spot behind the cell at the costal margin of the forewing. — In **pasena** Schaus, from Central Brazil, the *pasena*. body is said to be grey beneath; the transparent wings with very narrow brown margins. Forewing with narrow streak at the end of the cell and a transparent streak at the costal margin. Hindwing with 1—2 white dots at the apex of the under surface.

E. mira Hew. (= *segesta* Weym.) (39 d), from eastern Ecuador, has a very broad yellow half-band at *mira*. the end of the cell of the forewing and is otherwise similar to *clausina*.

E. hymenaea Prittw. (39 e), from Central Brazil, has brownish margins and half-band at the end of the *hymenaea*. cell of the forewing and in addition a whitish patch. Diaphanous spots are placed at the distal margin of both wings. On the under surface the margins are lighter. — **hymen** Hsch. (39 e), from southern Bolivia, *hymen*. is smaller with broader margins and half-band at the end of the cell, and also a yellow oblique band. Subcostal red-brown at the base. The median, the end of the cell and the hinder angle of the forewing are dusted with yellow, and also the lower radial of the hindwing and a stripe at the costal margin on the under surface.

E. sulphurea Hsch., from the border of Peru and Bolivia, has longer wings, broader yellow oblique *sulphurea*. band and broader dark brown margins. The yellow dusting is extended over the cell of the forewing and the greater part of the hindwing; on the other hand it is absent at the costal margin of the hindwing beneath.

E. sao Hbn. (39 d), from Brazil, has broader dark margins and yellow patch at the end of the cell of *sao*. the forewing. Base of the under surface of the hindwing yellow-brown, distal margin with 4 white crescents.

— **obscurata** F. is according to BUTLER a dark form of the preceding. *obscurata*.

E. sylpha Hsch. (39 e), from Venezuela, is similar to *Miraleria sylvella*, but is smaller and has different *sylpha*. neurulation. The wings are diaphanous with brownish margins; at the costal and inner margins of the forewing with yellow-brown, and the same at the inner angle of the hindwing. At the end of the cell of the forewing a yellow patch.

E. polita Weym. (39 e) is very similar to *Pteronymia aletta*. The wings are dark-shaded with dark *polita*. brown margins. The inner margin and the subcostal of the forewing, as well as the veins in the disc of the hindwing, are yellow-brown. Besides the yellow spot at the end of the cell both wings have further yellowish patches at the distal margin and in the end of the cell. *polita* flies together with *Pteronymia aletta* in Colombia.

E. cabenis Hsch. is somewhat larger, with colourless wings, dark brown margins and white half-band *cabenis*. behind the brown one at the end of the cell. On the under surface the margins are yellow-brown, dark-margined with 1—2 dots in the apex of both wings. It flies like the similar *helena* Hsch. in eastern Colombia. The *helena*. latter is still larger, with narrower margins, triangular spot at the end of the cell of the forewing and broader white half-band.

E. sidonia Hsch., from southern Peru, has more pointed wings; cell of the hindwing with long recurrent *sidonia*. vein. The white patch at the end of the cell of the forewing is only distinct at the costal margin and on the radials. On the under surface the margins are deep ochreous coloured, without white dots in the apex.

E. cora (Bang-H. i. l.), from Bolivia, is larger than the similar *tigidella* Hew. (39 e), from eastern Ecuador. *cora*. *tigidella*. The wings in *cora* are slightly brownish; behind the end of the cell of the forewing, at the distal margin and at the inner angle of the hindwing yellowish. Across the end of the cell of the forewing there is a broad brown wedge-spot; in *tigidella* there is only a very narrow dark mark here and behind it a whitish patch. On the under surface the margins in *cora* are light yellow-brown, in *tigidella* brownish with white dots in the apex of the forewing and at the distal margin of the hindwing.

E. canilla Hew. (= *canaletta* Stgr.) (39 e) has elongate wings with yellow dusting, except in the apex. *canilla*. The margins are dark brown; in the ♀, especially in the hindwing, much broader. On the under surface the margins are brown-red, with dark borders; at the base of the hindwing yellow; with white double spots in the apex of the forewing and at the distal margin of the hindwing.

E. perasippa Hew. (39 e) is a very large, little marked species from Ecuador and Colombia. The wings *perasippa*. are yellowish, vitreous with narrow brown margins and a streak across the end of the cell of the forewing. The subcostal of the forewing and the underside of the margins are yellow-brown.

E. dirama Hsch. (39 f), from Bolivia, is smaller, with broader streak at the end of the cell and yellow *dirama*. spot behind it. The costal margin of the hindwing is yellow on the under surface. — **alidella** Hew., from Co- *alidella*. lombia, is a very similar form, which also much resembles *Pteronymia alida*. HEWITSON has noticed that there is a difference between the two in the neurulation, which also appears to be constant for other species of *Episcada* and *Pteronymia*: in *alida* the lower arm of the lower discocellular of the forewing is the longer; in *alidella* it is the upper one. *alidella* has broader wings with dark margins and broad yellow half-band at the end of the cell of the forewing. In the ♀ there are further several yellow patches at the distal margin.

E. scantilla Hew., from eastern Ecuador and Colombia, has similar wing-form to *dirama*, a white spot *scantilla*. at the end of the cell of the forewing and white patches at the distal margins.

- paradoxa*. **E. paradoxa** Stgr., from the Cauca Valley, is a large species with colourless wings and narrow borders. only the costal and inner margins of the forewing have broad margins, the end of the cell is without marking. Similar species are *Napeogenes flossina* (35 g) and *Hymenitis quinta*.
- praestigiosa*. **E. praestigiosa** Hsch. closely resembles *Dismenitis cleonica* (41 e), but is distinguishable at once by the acutely angled lower discocellular of the hindwing. The forewing is slightly shaded, the hindwing tinged with yellowish; with white patches at the end of the cell of the forewing and the distal margins. The end of the cell of the forewing is in the ♂ very narrowly, in the ♀ broadly coloured with brown. The distal margins are proximally produced into points at the veins. — A similar, smaller species from Colombia, which I call
- lobusa*. **lobusa** spec. nov., has a yellowish patch at the end of the cell, more weakly dentate distal margins, narrower marks at the end of the cell and at the distal margin of the hindwing; on the under surface large white double spots, which are entirely absent in *praestigiosa*.
- philoclea*. The following **E. philoclea** Hew. (39 d), from southern Brazil, has already quite the appearance of a *Pteronymia*, but still a distinct upper discocellular and radial in the hindwing of the ♂♂. It has yellowish wings with black margins, half-band across the end of the cell and yellowish patch beside it. In the disc of the hindwing the veins are also yellowish. On the under surface the margins are dark brown-red, with white double spots at the distal margin of the hindwing and the apex of the forewing. The costal margin of the hindwing is yellowish with reddish spot at the base. The species recalls *Ceratinia eupompe* (35 d), with which it occurs
- munda*. together. — **munda** Weym. is a form with broader margins and connecting streak between the half-band and the inner margin of the forewing.

27. Genus: **Pteronymia** Btlr. & Druce.

To this genus should rightly belong only species in which the upper discocellular of the hindwing is absent and in the ♂♂ of which at least the greater part of the upper radial is coincident with the subcostal. But when one has only female specimens it is often difficult to determine whether the species belongs to *Pteronymia* or *Episcada*, for superficially forms of the two genera are often very similar. There are no distinctive external characters for the whole genus, as in *Leucothyris*. The commonest pattern is that shown in *zerlina* (39 g); yet there are also gay-coloured species, such as *latilla*, which recall *Episcada*. The forms belonging to *Pteronymia* are rather numerous. They often occur in numbers, are mostly widely distributed and therefore not rare. A few even occur in great profusion, such as *zerlina*, *simplex*, *artena*, *euritea*. The Andes from Bolivia to Colombia produce the largest number of species.

- latilla*. **P. latilla** Hew. (39 f), from Venezuela and Colombia, has transparent yellowish wings with yellow-brown dusting, especially at the base of the forewing and the inner angle of the hindwing. The apical half of the forewing is blackish with 2 yellow macular bands. The margins of both wings and a spot in the cell
- albicans*. of the forewing are also blackish. — In ab. **albicans** Hsch. the yellow macular bands are whitish and the end
- nigricans*. of the cell of the forewing and the apical third of the hindwing are dusted with yellow. — In ab. **nigricans** Hsch. the spot in the cell, the costal and inner margin, and also the end of the cell of the forewing and a band on the median are broadly black-brown. It flies in Colombia.
- barilla*. **P. barilla** Hsch. is a form similar to *latilla*; from western Ecuador. It has more delicate colouring, smaller yellow dots, a red-brown base to the inner margin of the forewing, slightly reddish colour on the hindwing and much smaller white marginal dots in the distal margin of the hindwing beneath.
- picta*. **P. picta** Salv., from Colombia, has a blackish forewing, the base of the cell is brown, the middle yellow, across the end is placed a black spot. In the distal half there are 2 yellow macular bands consisting of 4 or 5 spots. The hindwing is yellow, with broad black distal margin and brown streak at the inner angle.
- notilla*. **P. notilla** Btlr. & Druce (39 f ♂, ♀). The ♂ has a similar pattern to *latilla*, but paler, also the dark spot in the cell is absent. In the ♀ the colouring is much lighter; the cell shaded with dark and the hindwing unicolorous. red-brown. This is the Central American form of the group, from Costa Rica. It has black
- olyrilla*. antenna, while that of the preceding forms has a yellowish club. — **olyrilla** Btlr. & Druce, likewise from Costa Rica, recalls the similar *Dircenna olyras* by the vitreous longitudinal band in the hindwing, and differs principally in this from the preceding form.
- donella*. **P. donella** Fldr., from Colombia, has a red-brown basal third to the forewing and a differently shaped half-band at the end of the cell. The hindwing as in the ♀ of *notilla* is uniformly red-brown with broader dark distal margin.
- donata*. **P. donata** (Bang-H. i. l.) is a smaller form from Panama and Costa Rica with lighter colour and very broad, angled yellow band to the forewing, which extends from the costal margin across the end of the cell to the inner margin. Otherwise the markings are similar to those of *donella*.
- fulvimargo*. **P. fulvimargo** Btlr. & Druce, from Costa Rica, is said to be similar to *Episcada obscurata* and *Dircenna olyras* (36 e). The forewing is transparent with faint yellowish macular band at the end of the cell and the distal

margin, and also with blackish half-band at the end of the cell. The hindwing has dark margins and also a red-brown sub marginal band and red-brown veins. ♂ and ♀ are coloured almost alike.

P. fulvescens Godm. & Salv., from Costa Rica, is said to be similar to *latilla* and *fulvifrons*. The *fulvescens*. upper radial of the hindwing is entirely absent. The club of the antenna is yellow.

P. splendida Hsch., from eastern Colombia, of which only the ♀ is known to me, has the fore- *splendida*. wing similar to that of *notilla*-♀, with broader black margins and dark spot in the middle of the cell. The hindwing is slightly yellow-brown, with a yellow spot at the apex and very broad black distal margin. The club of the antenna is yellow-brown.

P. dispar Hsch. (39 f) has transparent yellowish wings with black margins and half-band at the end *dispar*. of the cell, which beneath are variegated with brownish. Club of the antenna yellow-brown. In the ♀ the subcostal and median of the forewing, as well as the veins in the disc of the hindwing, are yellow-brown. The species flies in Colombia and Venezuela.

P. alinda Fldr., from Venezuela, is said strongly to recall *donella* in the markings. Forewing in the *alinda*. cell yellow-brown, subcostal and median red-brown, the other margins black-brown. In the blackish apical area 2 yellowish macular bands. Hindwing dusted with yellow-brown, with red-brown veins and broad blackish distal margin.

P. veia Hew. (39 g), from Venezuela and Colombia, has a broad yellow oblique band at the end of *veia*. the cell of the forewing and yellow-brown margins on the under surface with large white crescents. In the ♀ the margins are broader and a dark spot is placed at the end of the median of the forewing. — In ab. **brunnea** (Stgr. i. l.) the subcostal and median of the forewing and also the veins in the disc of the *brunnea*. hindwing are yellow-brown. The yellow oblique band is still broader and more brightly coloured.

P. zerlina Hew. (= *arinia* H.-Schäff.) (39 g) has vitreous wings with blue-grey sheen and dark *zerlina*. brown margins; only the costal margin of the forewing is red-brown. At the dark band at the end of the cell and at the distal margin of the forewing there are whitish patches. In the red-brown margins of the under surface are placed at the apex of the forewing single, and at the distal margin of the hindwing double white dots. In the ♀ the inner margin and the half-band of the forewing are connected by a dark triangle. — In a local form from southern Peru, which I call **tamina** *form. nov.*, the club of the *tamina*. antenna is yellow-brown. The basal half of the cell is shaded with dark; the apical half of the forewing is yellowish and the disc of the hindwing has bluish white sheen. On the under surface the white dots are much smaller. — **hara** Hew. is a local form of *zerlina*, from Ecuador, with whitish patches behind the *hara*. end of the cell and at the distal margin of the forewing. The subcostal is red-brown.

P. lincera H.-Schäff. (39 g) has transparent yellow-brown wings, with yellowish patches at the end *lincera*. of the cell and at the distal margin of the forewing. Subcostal and median are light red-brown. Otherwise the markings are similar to those of *zerlina*. Eastern Ecuador and Colombia. — **alina** (Stgr. i. l.) is *alina*. a form similar to *zerlina*, from Bolivia, with red-brown, dark-edged margins on the upper surface, light yellow-brown beneath; with yellowish patches in the end of the cell, behind the cell, at the distal margin of the forewing and at the apex of the hindwing. In the ♀ the margins are proportionately broader.

P. pronuba Hew., from western Ecuador, has colourless wings with black margins and black-white *pronuba*. half-band at the discocellular. Subcostal and median are red-brown at the base. In the ♀ both the margins and the white half-band are much broader.

In **P. tucuna** Bates (39 g), from the Upper Amazon, the dark-margined wings are provided with *tucuna*. numerous yellow dots, namely in and behind the end of the cell, at the distal margin and hinder angle of the forewing, and also in the disc of the hindwing. The black antennae have yellow-brown clubs. — **tanampaya** (Stgr. i. l.), from Bolivia, has narrower wings. The whole cell of the forewing and the *tanampaya*. disc of the hindwing are dusted with yellow. The margins beneath are dark red-brown, in *tucuna* yellow-brown. — **bueya** (Bang-H. i. l.) is very similar to the preceding, but with red-brown subcostal and red- *bueya*. brown margins on the underside. It likewise flies in Bolivia.

P. zabina Hew. (40 b), from Colombia and Ecuador, has broader wings with smaller yellowish dots *zabina*. at the end of the cell and the distal margin of both wings. Antenna black; subcostal and a narrow inner-marginal stripe are red-brown. — In ab. **brunneata** Hsch. the median and the veins in the disc of *brunneata*. both wings are also red-brown. At the end of the cell of the forewing there is a yellow half-band.

P. huamba *spec. nov.* I call a small form similar to *lincera*, also from the eastern Andes of Ecu- *huamba*. dor, with slightly yellowish wings and faint yellow-brown patches at the end of the cell and distal margin of the forewing. The margins are black-grey, only the subcostal of the forewing slightly yellow-brown. The white double spots at the distal margin of the hindwing are very large. — **oneida** Hew. *oneida*. (39 g), from Colombia and Ecuador, is somewhat larger, with more brightly coloured wings. The distal margin of the hindwing is proximally dentate, especially in the ♀. There is a dark, isolated spot in the disc of the forewing at the end of the cell. The subcostal is broadly yellow-brown.

inania. **P. inania** Hsch. is a similar, larger species with broader wings and deep black-brown margins. Behind the end of the cell is placed at the costal margin an oblong yellow-brown spot. On the under surface there are numerous roundish white dots in the distal margin. This species, like the preceding, comes from the border of eastern Ecuador and Colombia.

serrata. **P. serrata** Hsch. has still larger and broader, slightly yellowish wings with strongly dentate distal border. The half-band at the end of the cell of the forewing is proximally widened. On the under surface there are quadrate, yellow-brown, dark-margined spots at the distal margin of the hindwing between the white double spots. This species flies with *Dismenitis theudelinda* (41 d) and other similar forms in the mountain forests of the eastern chain of the Cordilleras of Ecuador at elevations of from 2—3000 m.

teresita. **P. teresita** Hew. (40 a, b), from eastern Ecuador, has broad wings, almost colourless in the ♂, with narrow dark margins. In the ♀ the wings are dusted with yellowish, especially the hindwing. The latter has much broader distal border than in the ♂. On the under surface the margins are dark red-brown, with white dots in the apex of the forewing and at the distal margin of the hindwing.

evonia. In **P. evonia** Hsch., from Colombia, with shorter wings, the ♀ is of a yellow-brown colour, especially in the cell and at the end of the median of the forewing, and also at the proximal border of the costal and distal margins and on the veins in the disc of the hindwing. The antenna is black. The distal margin of the hindwing very broadly black.

sulmona. **P. sulmona** Hew., from Ecuador, is said to be similar to *teresita*, with narrower margins and black antenna. The base of the forewing and the hindwing are dusted with red-brown. On the under surface there is a white spot in the apex of each wing and the base of the hindwing is yellow.

suesa. **P. suesa** Hew., from Ecuador, has transparent wings with yellowish sheen and narrow brown margins and half-band across the end of the cell of the forewing. The club of the antenna is yellow-brown. On the under surface the margins are yellow-brown, with 2 white dots in the apex of the forewing and a row of double dots at the distal margin of the hindwing.

thabena. **P. thabena** Hew. (40 a), from the eastern ridge of the Andes in Ecuador, has broad, transparent wings, the forewing with yellowish, the hindwing with bluish sheen. Unfortunately only ♀♀ are known of this and the following similar forms, so that the genus cannot be exactly fixed. The marking recalls forms of *zerlina*. The distal margin of the hindwing especially is very broad, and on the underside, where it is red-brown, provided with whitish double dots. The antenna has yellow-brown club. — A local form from Bolivia, which I call **stantis** *form. nov.*, is distinguished by a narrow black half-band at the end of the cell of the hindwing. — From Ecuador comes another similar form, **aegineta** Hew. It has the distal margin of the hindwing strongly dentate proximally and a proximally widened half-band at the end of the cell of the forewing. — **cleobulina** Hew., from Bolivia, probably also belongs here. It has the hindwing like *thabena*, but in the cell of the forewing in addition a black bar, and at the black distal margin a projection in the direction of the somewhat prolonged half-band at the end of the cell.

denticulata. **P. denticulata** Hsch. (40 b), from Bolivia, has black margins and half-band at the end of the cell of the forewing; the distal margins are proximally dentate. The club of the antenna is yellow-brown. — In *dispaena*, **dispaena** Hew. (40 a), from the same district, the margins are brown; subcostal of the forewing reddish; antenna black. In the ♀ the margins are broader and partly red-brown.

alida. **P. alida** Hew. (40 a), from Venezuela, has narrower margins and a broad yellow half-band behind the uniformly broad half-band at the end of the cell. It closely resembles *Episcada alidella*.

calgiria. **P. calgiria** Schaus (? = *diracennoides* Stgr. i. l.), from Bolivia, is said to have transparent yellowish wings, with narrow dark brown margins and veins, and also curved half-band at the end of the cell of the forewing; behind this there are yellowish spots at the costal and distal margins; also at the base and in the end of the cell of the forewing. The distal margin of the hindwing is broadest at the 2nd median vein and in the apex. Club of the antenna yellow-brown.

tigranes. **P. tigranes** Godm. & Salv. (40 b), from Central America, has colourless wings with narrow dark margins, somewhat broader in the ♀; in the forewing red-brown subcostal, and also a broad dark and white half-band at the end of the cell. — **timagenes** Godm. & Salv., from Mexico, at elevations of up to about 2000 m., differs from the preceding by the red-brown margins, only the inner margin of the forewing is blackish. The half-band at the end of the cell is much smaller. — **alcmena** Godm. & Salv., from Guatemala, is somewhat smaller, with broader, reddish margins. The dark and the white half-band at the end of the cell are larger and more obliquely placed.

adina. **P. adina** Hew., from Venezuela, is a similar species to *tigranes*, without red-brown subcostal and with oblong white spot at the costal margin of the forewing. The costal margin of the hindwing is strongly arched, the middle discocellular very long and curved.

eulyra. **P. eulyra** Fldr., from Venezuela, is said to be similar to *Episcada alidella*, but much smaller, with white submarginal spots on the under surface.

P. apuleia Hew. (? ♀ = *santanella* Hsch.) (40 a), from eastern Ecuador, is very similar to *Mira- apuleia*, *leria sylvella* (40 e), but may be known by the strongly angled lower discocellular of the hindwing. The margins, except the yellow-brown costal margin of the forewing, are narrowly dark brown; the half-band at the end of the cell of the forewing is somewhat curved and pointed.

P. granica Hew. is a similar species, also from Ecuador; but the half-band at the end of the cell is absent. On the under surface the base of the costal margin of the hindwing is yellow and each wing has 2 whitish dots in the apex.

P. ticida Hew. (40 e), from eastern Ecuador, has narrow wings with black margins; at the base of *ticida* both wings yellowish dusting. It closely resembles *Episcada tucidella* (39 e). But on the under surface the margins are black, only the base of the hindwing is yellow. In the apex of the forewing are placed 3, at the distal margin of the hindwing 5 oblong white dots. — **yungava** Hsch. is a similar form from Bolivia. *yungava*. The margins are brownish; subcostal of the forewing red-brown, on the underside yellow-brown with only one white dot in the apex of the hindwing.

P. starkei Stgr., from Venezuela, has broader wings and in addition to the usual dark markings and *starkei*, the half-band at the end of the cell an indistinct bar in the cell of the forewing. In other respects this form approaches *adina*. — A form from western Ecuador, similar to *adina* and *starkei*, which I call **semonis** form. nov., has broad vitreous wings with narrow dark margins and red-brown subcostal, as *semonis*, well as dark half-band and whitish spot at the costal margin of the forewing. On the under surface very minute whitish dots are placed in the dark distal border of the yellow-brown margins.

P. ladra Stgr., from Ecuador, has similar wing-contour to *ticida*. The margins are brown above, *ladra*, yellow-brown beneath except the yellowish costal margin of the hindwing. The end of the cell of the forewing has no markings.

P. minna Schaus, from Bolivia, is said to have transparent wings of 55 mm. expanse; with narrow *minna*, dark margins and a yellow streak at the costal margin of the forewing, which is continued in a patch at the end of the cell. There are also yellowish patches at the distal margin. The subcostal of the forewing is red-brown. On the hindwing the cell and the inner margin are dusted with yellowish. On the under surface the margins are red-brown, with 3 white, dark-edged spots in the distal margin of the hindwing.

P. ilsia Schaus, also from Bolivia, is said to be smaller, with broad brown and white half-band at *ilsia*, the end of the cell of the forewing; apex broadly brown.

P. medellina Hsch. (40 e), from Venezuela and Colombia, is a smaller species with fairly uniformly *medellina*, broad dark margins and triangular half-band as well as white spot at the end of the cell of the forewing. In the basal part both wings are dusted with yellowish. — **ozia** Hew. is a very similar form from Ecuador, *ozia*, with yellowish club to the antenna.

P. antisao Bates (40 d), from the Upper Amazon, has a sulphur-yellow oblique band at the end of *antisao*, the cell of the forewing to the distal margin. In the ♂ the median and subcostal of the forewing are only slightly yellow-brown, in the ♀ very broadly; here also the veins in the disc of the hindwing, as well as a more or less broad stripe in the dark distal margin, are yellow-brown.

P. simplex Salv. (40 b), from Costa Rica and Panama, has delicate wings with narrow brown mar- *simplex*, gins; yellow-brown subcostal and white spot at the narrow half-band of the forewing. On the under surface the veins are yellow-brown with indistinct dots at the apex. In the ♀ the margins are broader, half-band and white spot larger. Before the distal margins are placed whitish dots.

P. nepiscada Hsch., from southern Peru, is a similar, smaller species, which recalls forms of *Epi- nepiscada*, *scada*. Subcostal and median of the forewing are broadly yellow-brown. The spot at the end of the cell is yellowish. On the under surface an elongate yellow-brown spot is separated off at the costal margin by sulphur-yellow bordering and there are yellow dots in the apex of both wings.

P. sylvo Hbn., from Guiana, Venezuela and Brazil, in an insignificant-looking species, similar to *sylvo*, *alissa*, with wedge-shaped dark spot at the end of the cell of the forewing and white spot at the costal margin, as well as a streak at the end of the upper discocellular and a whitish patch in the hinder angle. — **carlia** Schaus, from Central Brazil, is probably, if not the same, at least a very similar form. *carlia*.

P. hemixanthe Fldr. (40 d), from Central Brazil, has the proximal half of both wings strongly *hemixanthe*, dusted with yellow. In this it resembles the smaller **euritea** Godt. (= *eudema* Godt.) (40 d), from the same *euritea*, district. The latter has, however, dark bands across the end of the cell and at the inner margin of the forewing, which are absent in *hemixanthe*; the present species on the other hand has a large reddish dot at the base of the hindwing beneath.

P. cotytto Guér. (40 c), from Central America and Mexico, has a broad black-brown apex to the *cotytto*, forewing and a broad half-band at the end of the cell, together with a white oblique band, which extends to the distal margin. The subcostal is red-brown. — **parva** Salv., from Costa Rica, is smaller than *parva*, *cotytto*, with narrower black apex to the forewing.

- fizella*. **P. fizella** Bdv., from Guatemala, is said to be very similar to *Ithomia agnosia* (37 f), with the margin of the forewing widened towards the apex and quadrate spot at the end of the cell. The white oblique band reaches the distal margin.
- artena*. **P. artena** Hew. (40 c) is said to come from Mexico, but a similar form is common in the eastern Andes from Colombia to Peru. *artena* has about the size and appearance of *tigranes* and *adina*. The black half-band at the end of the cell of the forewing is proximally forked, the white band ends at the third median vein. In the apex of the margins, which are red-brown beneath, are placed in the forewing 2 white dots, in the hindwing only one. — **olimba** Hsch., from southern Peru, is distinguished by a yellow base to the hindwing beneath and yellow underside to the abdomen, which is grey in *artena*.
- derama*. **P. derama** Hsch., also from the border of Peru and Bolivia, recalls *Pseudoscada salonina* (41 b). The wings are diaphanous with narrow margins. Across the end of the cell of the forewing is placed a wedge-shaped black spot and towards the apex a delicate yellow-white half-band, cut off at the 3rd median vein. On the under surface the margins are brown-red with 3 whitish dots in the apex of the forewing.
- afrania*. **P. afrania** Hpfr., from Bolivia, resembles *Miraleria sylvella* (40 e) and *Episcada salvinia* (39 d), without the red-brown colouring of the subcostal and median of the forewing. The narrow black margins are broadest in the apex and at the inner margin of the forewing. Beside the narrow, uniform black band at the end of the cell is placed a similar white one.
- apia*. **P. apia** Fldr., from Colombia, is similar to *tigranes*, with narrow margins and pointed dark half-band at the end of the cell of the forewing, and also a broad white one beside it. Subcostal red-brown. On the underside the costal margin of the hindwing is yellowish at the base.
- asopo*. **P. asopo** Fldr., from Venezuela and Colombia, is smaller than *artena*. The half-band at the end of the cell of the forewing is triangular; the white patch beside it proportionally broader. On the under surface there are 3 whitish spots in the apex of the forewing, 2 in that of the hindwing, as well as 3 indistinct ones at the distal margin. — **asellia** Hpff. (= andreas Weeks) (40 c), from Peru and Bolivia, is a similar form with the triangular spot at the end of the cell broader costally and beneath not blackish but rust-brown. Moreover the white marginal spots are absent and the 2nd median vein of the forewing is dark-margined. — In **aselliata** Hsch., from Ecuador, the white oblique band of the forewing is broader and reaches the 2nd median vein; also the white patch at the hinder angle is larger and in the ♀ united with the oblique band.
- alissa*. **P. alissa** Hew. (40 c), from western Ecuador, has a somewhat curved half-band at the end of the cell of the forewing and a small, white, black-edged spot at the costal margin. The apex of the forewing is more strongly rounded. — In **alissana** Hsch. the forewing has also a broad white oblique band, which, however, is semitransparent and not sharply cut off at the 2nd median vein, as in the similar *aselliata*. It flies likewise in western Ecuador.
- restilla*. **P. vestilla** Hew., from the Upper Amazon, has broader dark margins; the dark oblique band at the end of the cell is continued beyond the 2nd median vein to the distal margin. Behind it follows towards the apex a yellow oblique band. There is in addition yellow dusting in the end of the cell and at the hinder angle of the forewing, as well as in the anterior half of the hindwing. — In **ucaya** Hsch., from the Ucayali River, the yellow oblique band is whitish. — **sparsa** Hsch. is another form of *restilla*, from the Upper Napo in Ecuador. The yellow dusting of the wing is much stronger, especially in the whole of the hindwing, where also the veins stand out strongly yellow.
- laura*. **P. laura** Stgr. (40 d), from Colombia, is one of the few brightly coloured small species. It is similar in colouring to *Hypoleria vanilia* (40 g) and *Pseudoscada lavinia* (41 b). The half-band at the end of the cell is somewhat emarginate towards the apex and encloses a white patch. In the dark shaded apical area of the forewing are placed in addition a number of whitish dots at the distal margin and in the disc. The hindwing, especially at the distal margin, is red-brown (more strongly in the ♀) and with dark margins at the apical half.
- aletta*. **P. aletta** Hew. and **agalla** Godm. & Salv. (40 d) are 2 very similar forms, the former from Colombia and Venezuela, the latter from Panama and Costa Rica. *agalla* has a sharply defined yellow oblique band at the end of the cell of the forewing and roundish spots before the distal margin. In *aletta* the oblique band is composed of indistinct spots, between which the lower radial remains dark. On the yellow-brown hindwing the veins in *agalla* are bright red-brown, in *aletta* blackish in the distal half. Both forms have a broad red-brown inner margin to the forewing, whilst in a third form, **alopec** Godm. & Salv., from Panama and Venezuela, which is said to be otherwise similar to *aletta*, the inner margin remains blackish. Another species similar to these forms is *Episcada polita* (39 c).
- lilla*. **P. lilla** Hew. (40 c) has in addition to a yellow oblique band yellow dusting in the cell of the forewing and the costal half of the hindwing, and yellow dots at the distal margin of the forewing. On the under surface the margins are brown with yellow-brown markings, only the base of the hindwing is reddish yellow-brown. In the apex of the forewing are placed beneath 4 white dots, in the distal margin of the hindwing 5 oblong double dots. In western Ecuador at the foot of the Andes.

P. primula Bates, from the Upper Amazon, is a species similar to *vestilla*; the dark oblique band at the end of the cell is forked at the 2nd and 3rd median veins. The vitreous parts of both wings are for the most part dusted with yellow. The distal margins are broadly blackish brown, broadest in the apex of the forewing and the middle of the distal margin of the hindwing; on the under surface they are suffused with light brown, yellow-brown at the base and the inner angle of the hindwing. — **tenuis** Hsch. (40 c), from Colombia, is a similar form with delicate wings. Between the 2nd and 3rd median veins of the forewing is placed a triangular additional yellow spot. The yellowish oblique band is arc-shaped. On the under surface the margins are paler and in the distal margin of the hindwing there are no white dots as in *primula*.

P. auricula Hsch. (40 c), also from eastern Colombia, is larger, with broader black margins. The proximal edge of the distal border of the hindwing is nearly straight, not parallel to the outer edge. On the under surface the edges are dark, except at the end of the cell of the forewing and at the costal and distal margins of the hindwing, where they are yellow-brown.

P. glauca Hsch., from western Ecuador, recalls *Leucothyris quadrata*, but the vitreous spots in the apex of the forewing are absent. The wings have a strong blue-white sheen. The oblique band at the end of the cell is forked at the median veins. At the costal margin there is only one small whitish spot. On the under surface the margins are red-brown, dark-edged; with 4 white dots in the apex of the forewing, and 5 in the apex and distal margin of the hindwing.

28. Genus: **Miraleria** Hsch.

Here belong only a few forms, which may be recognised by their having the end of the cell straight in the hindwing. The lower and middle discocellulars are of equal length, weakly curved and alone closing the cell, whilst both the upper discocellular and the upper radial are absent in the ♂. The ♂ has an oblong scent-spot, which, as in *Hypoleria*, is not closed distally. The known forms are plain-looking, medium-sized butterflies, and occur only in the north-west of South America; they are not rare.

M. cymothoë Hew. (40 c), from Venezuela and Colombia, has colourless wings with brown margins, of which the distal ones are proximally dentate. The subcostal of the forewing is red-brown; the costal margin of the hindwing and all the margins on the under surface are yellow-brown. Beside the brown half-band of the forewing is placed a whitish band and in the apex of both wings on the under surface 2 whitish dots. — In ab. **flavomaculata** Hsch., from Venezuela, the band at the end of the cell is yellow, and also the dots on the underside.

M. sylvella Hew. (40 c), from western Ecuador, closely resembles the smaller *Episcada sylpha* (39 c). The ♂ has in addition to the red-brown subcostal a broad streak at the median of the forewing and also a partly reddish brown distal margin to the hindwing. The half-band at the end of the cell is proximally narrower and beside it is placed only a small white spot at the costal margin. In the ♀♀ the red-brown colour is absent above, only the subcostal of the forewing is slightly red-brown. — In ab. **ornata** Hsch. the forewing has a broad white half-band, which in the ♀ is sometimes continued, though here less distinct, to the distal margin.

29. Genus: **Aeria** Hbn.

Here begins the group of genera in which the lower discocellular of the hindwing in the ♂ is not angled and forms an acute angle with the median. In *Aeria*-♂ the lower discocellular is slightly undulate, the middle somewhat shorter than the long upper one; in the ♀ the lower is angled, the upper is absent, as the upper radial branches off from the subcostal. The ♂♂ of some forms have at the end of the cell of the forewing on the upper surface a larger spot of thickly massed, glossy brown scales. The few known forms are all very nearly allied and recall species of *Scada* by their yellow-black colouring. They mostly occur in northern South America and in Central America, and are not rare in open places in the woods.

A. eurimedia Cr. (= *aegle* Hbn., *indola* Dbl. & Hew.) (40 f). Typical examples of this species occur only in Guiana and on the Lower Amazon. They have a large, half oval yellow subapical spot in the forewing and also broad black oblique band and margins, there being only an oblong yellow spot at the base. — In the form **negricola** Fldr., from the Upper Amazon, the subapical spot is longer and the yellow basal patch is broader and triangular. On the under surface of both forms the margins are variegated with red-brown. — **pacifica** Godm. & Salr. is the form from northern Central America. The black markings are very broad, so that only narrow yellow stripes remain at the base of the forewing and in the disc of the hindwing. The subapical band of the forewing is very large and like the other yellow markings darker than in *eurimedia*. The under surface, as in the latter, is variegated with red-brown. — **agna** Godm. & Salr. (40 f) is the form from southern Central America as well as Colombia and Venezuela. It may be recognised especially by the absence of the red-brown colour on the under surface. The pattern and colouring are otherwise similar to the preceding, with somewhat broader yellow bands at the base of the forewing and on the hindwing. — **palmara** Hsch. is a form from western Ecuador. It differs from *agna* in

sisenna, the narrower yellow subapical band and broader basal triangle on the forewing. ab. **sisenna** Weym. is a form of the preceding in which the yellow subapical band of the forewing is broken up into 2—3 small yellow spots. It occurs together with the principal type in Ecuador.

elara, **A. elara** Hew. is a smaller, delicate species from the Upper Amazon, with proximally sinuous yellow subapical band and narrower distal margin to the hindwing. On the under surface it shows the red-brown colour especially at the hinder angle of the forewing and the inner angle of the hindwing. — **elarina** Oberth., from the Lower Amazon, is somewhat larger, with narrower wings and brighter colouring. The special character of this form is the presence of a black triangle at the end of the cell of the hindwing, extending from the costal margin.

elodina, **A. elodina** Stgr., from Venezuela, is pale yellow and has a narrow black oblique band across the end of the cell of the forewing, the costal and distal margins of the forewing are also black and the costal margin of the hindwing is narrowly so. *elodina* may be recognised especially by the narrow yellowish costal margin of the hindwing beneath.

olena, **A. olena** Weym. (40 g), the only species from Central Brazil, differs from the preceding by the absence of the white marginal dots on the under surface. It is of only small size, and has delicate, blackish colour with narrow yellow subapical band on the forewing and longitudinal band on the hindwing. The yellow basal triangle in the forewing on the contrary is broad.

30. Genus: **Velamysta** Hsch.

Under this name I unite a small group of species which differ from *Hypoleria* in the absence of the oblong scent-spot in the middle of the costal margin in the ♂. Costal and subcostal in this genus separate gradually and only approach one another again behind an indistinct scent-spot which is placed at the extremity of the cell, after which, parting once more, they reach the margin in a curve. The scent-spot is mostly marked by a whitish angular spot on the under surface and on the upperside covered by a hair-pencil arising at the end of the cell. In the ♀ costal and subcostal are coincident to one half, the upper discocellular is absent and the lower is mostly angled, which is not the case in the ♂. There belong here only a few rare, medium-sized forms, which in the markings recall species of *Leucothyris* and *Dismenitis*. They occur apparently only in high-lying mountain-forests of the eastern Andes from Ecuador to Bolivia.

crucifera, **V. crucifera** Hew. (40 f), from Ecuador, is similar to *Dismenitis theudelinda* (41 d) and *V. pardalis*, but somewhat smaller. The forewing is shaded with light brown, with whitish dots, dark borders and a brown, irregular spot at the end of the cell of the forewing. The hindwing has bluish sheen and a peculiar, broad black-brown colouring at the distal margin, in which are placed large whitish distal-marginal spots. The costal margin of the hindwing is blackish to the apex with a wedge-shaped spot at the end of the cell. In the ♂ the colouring is on the whole somewhat weaker than in the figured ♀.

torquatilla, **V. torquatilla** Hew. (40 f, as *peninna*) and **peninna** Hew., both from Bolivia, are very similar, so that I at first regarded them as one species. Only after seeing a specimen of the true *peninna* I discovered my mistake and it seems to me now that the two even belong to different genera. The specimen figured is a ♀ of *torquatilla* (**not** *peninna*); in the ♂ the dark markings are weaker, especially in the disc of the forewing; and on the hindwing the median band is only indicated at the apex. On the under surface all the margins are rust-brown. — In *peninna* the otherwise similar marking is on the whole weaker and lighter brownish. In the ♀ the oblique band of the hindwing is placed nearer to the distal margin.

pardalis, **V. pardalis** Salv. (40 e) is probably also best placed in this genus. The venation appears to vary somewhat, as I possess a ♂ with the lower discocellular of the hindwing angled, much as in *Callithomia*, whilst in other specimens this vein is not angled. Superficially this rather rare species recalls *Dismenitis theudelinda* (41 d), with which it occurs in the highest mountain-forests of the Andes in Ecuador. It may be known by the dark oblique band at the end of the cell of the hindwing and the spots between the end of the cell and the apex of the forewing. In the ♀ the hindwing is of the same brownish colour as the forewing.

pupilla, **V. pupilla** Hew. (40 f), from Bolivia, is smaller, with similar markings and lighter margins, especially the costal margin of the forewing, which is reddish. The half-band at the end of the cell and the spot in the cell of the forewing are narrower. The dark marking in the apex of the hindwing is only very weak in the ♂. The ♀ probably resembles *dispersa*, if this is not indeed the ♀ of *pupilla*. — **dispersa** Weym., from Bolivia, has very similar markings to the ♀ of *torquatilla*. The dark patches at the apex and between the cell and distal margin of the forewing are fainter. — Another similar form, but somewhat larger, is **circilla** Hew., from Bolivia. The wings have a yellowish tint, with similar markings on the forewing to *crucifera*, but with yellow-red costal margin and yellow spot at the end of the cell. The hindwing has in the ♀ a proximally dentate dark distal margin, with 2 white dots at the apex and a half-band at the end of the cell.

anomala, **V. anomala** Stgr., from the Cauca Valley, has almost unmarked wings and recalls *Episcada canilla* (39 c) and *paradoxa*. The ♂♂, however, have the characteristic white spot at the costal margin of the hindwing beneath. The wings have a slightly yellow-green appearance, with no other markings. The costal and inner margins of the forewing are brown, the distal margins only very finely edged with dark.

31. Genus: **Hypoleria** Godm. & Salr.

The ♂♂ may be recognised by the elongate oval scent-spot at the costal margin of the hindwing and by the non-angled lower discocellular, which forms an acute angle with the median, is curved inwards and mostly aborted at the lower radial. In the ♀ costal and subcostal are coincident to the middle, otherwise the venation is as in the ♂.

The forms which belong here have mostly a rounded apex to the forewing and roundish hindwing. In addition to those with colourless wings there are also gay-coloured species, especially a group with red-brown band in the apex of the forewing, such as may be found in *Leucothyris* and also in *Pseudoscada*. Some forms also resemble the latter genus in other respects, so that it is often not easy to differentiate ♀♀ of the two genera.

Of this not very extensive genus also the region of the eastern Andes produces the largest number of species, yet some forms also occur as far as South Brazil and in Central America.

H. vanilia H.-Schäff. (40 g), from Colombia, is very similar to the smaller *Pseudoscada larinia* (41 b). *vanilia*. The forewing is shaded with dark, with black margins and 2 oblique bands at the end of the cell and before the apex. The interspace is divided by the dark-marked veins into a number of whitish spots. The hindwing is rust-brown, with broad border at the apex; in the ♀ with yellow-brown, proximally dark brown costal margin, in the ♂ transparent at the costal margin. — **libera** Godm. & Salr. is a local form of *libera*, the preceding from Central America (Panama, Costa Rica). It has more strongly marked dark patches and brighter red-brown colour on the hindwing. — **fumosa** Godm. & Salr., from Panama, is a form of the *fumosa*, preceding with darkened apical spots and triangular spot in the cell of the forewing.

H. hyalinus F., from Brazil, is a doubtful form and unknown to me in nature. According to *hyalinus*. BUTLER it is a form similar to *vanilia*, with transparent forewing and black margins, and also a macular band in the apex. Hindwing red-brown with narrow black distal border.

H. fausta Stgr., from the Upper Amazon, is a smaller species with brownish hindwing and base of *fausta*. the forewing. Across the end of the cell of the forewing is placed a broad dark half-band, which is divided at the median veins. In the end of the cell and at the distal margin there are whitish patches.

H. alema Hew., from Colombia, has according to HEWITSON'S figure transparent yellowish wings with *alema*. dark margins and narrow band across the end of the cell of the forewing; before the distal margin of the latter with whitish dots. On the under surface the margins are reddish, except the blackish costal margin of the hindwing.

H. ina Hew., from Ecuador, is a similar species with a row of whitish submarginal dots at the *ina*. distal margin of the forewing and without markings at the end of the cell. The inner margin of the hindwing is broadly reddish yellow-brown. In this the species recalls *Napeogenes apulia* (35 f).

H. ocalea Dbl. & Hew. (41 g), from Venezuela, Trinidad and Colombia, has light yellow-brown wings *ocalea*. with dark margins and an oblique band across the end of the cell of the forewing, which is continued beyond the 3rd median vein. The median of the forewing and the veins of the hindwing are yellow-brown. The macular band of the forewing is yellowish. — The white, longitudinally ribbed eggs are according to GUPPY attached singly about 2 ft. above the ground. The larvae hatched in 5 days. They are transparent, green, with whitish head and take 9 days to feed up.

H. gephira Hew. (41 g), from Colombia and the adjoining parts of Central America, is a similar *gephira*. species with broader margins; with whitish spots in the apex of the forewing and at the distal margin of the hindwing. Moreover the veins in the distal half of both wings are black.

The following forms have a broad yellow-red subapical band in the forewing and hence resemble the similarly marked forms of *Leucothyris* and *Napeogenes*, and also certain Erycinids.

H. chrysodonia Bates, from the Upper Amazon, is almost the same size as **aureliana** Bates (= from *chrysodonia* *aureliana*. *bona* Srka.) (41 a), from the same district. In the former the yellow-red colour is proximally semitransparent. The 2nd and 3rd median veins of the forewing are only narrowly margined with dark. In *aureliana* the yellow-red band is broader and the extremity of the median and also its branches are broadly margined with dark brown, so that between the veins only 2 smaller vitreous spots remain. Moreover, the base of both wings is also shaded with dark. The antennae are black in both species, whilst in **karschi** Hsch., which is otherwise very similar to *chrysodonia* and flies at the Upper Napo in Ecuador, they *karschi*. have a yellow-brown club. In *karschi* the yellow-red subapical band only reaches the 3rd median vein. — Another similar form is **cidonia** Hew., from Colombia. In this the antennae are black and between the *cidonia*. median veins there are 2 larger colourless vitreous patches. The hindwing has a yellowish submarginal band.

H. orolina Hew. (40 g), occurring at the Upper Amazon as far as the foot of the Andes in Peru and *orolina*. Ecuador, is a smaller, delicate species with almost colourless wings and yellow-brown subapical band. — In **oculata** Hsch., from the Upper Napo, which is the same size, there is another rounded vitreous spot be- *oculata*. tween the end of the cell and the band, which is narrower. — A similarly marked form, but larger than *oculata*, from Ucayali, which I call **sedusa** form. *nor.*, has a white patch at the end of the cell of the *sedusa*.

forewing and 3 whitish dots before the distal margin. The vitreous areas of both wings are slightly shaded with brownish.

- oncidia*. **H. oncidia** Bates, from the Upper Amazon, has similar markings to *orolina*; it is somewhat smaller and has whitish dusting in the end of the cell and before the distal margin of the forewing, and also in *tenera*, the disc of the hindwing. — A very nearly allied form is **tenera** Srnka, from Pebas, which has 3 white dots between the median veins of the forewing, whilst only 2 of these are said to be present in *oncidia*. — *quadrona*. In a further form from Yurimaguas, on the Upper Amazon, which I call **quadrona** form. nov., the yellow-red band is only very narrow and between it and the broad band at the end of the cell of the forewing there is another whitish patch.
- cymo*. **H. cymo** Hbn. (= *galita* Hew.) (41 a) has a dark half-band across the end of the cell of the forewing and adjoining it a white patch. The distal margin of the hindwing is red-brown, with dark edges. On the under surface the distal margins together with the costal margin of the hindwing are light red-brown with dark edges. — In the form **indecora** Hsch. (= *sylphis* Kaye), from British Guiana, the red-brown colour at the distal margin of the hindwing is absent. At the distal margin of the forewing there are white dots, and the margins of the under surface are yellow-brown.
- garleppi*. **H. garleppi** Hsch. is similar to the preceding, with narrower white patch at the end of the cell and without the whitish dots at the apex of the forewing.
- famina*. **H. famina** Hsch. (41 a), from Peru, has the wings more strongly dusted with white and an angular smoke-brown spot in the cell of the forewing. On the under surface the dark margins are variegated with yellow-brown. — In **oriana** Hew., from the Upper Amazon, the costal and distal margins of the hindwing are much broader and leave in the disc only a vitreous longitudinal band, just as in *Leucothyris onega*.
- virginia*. **H. virginia** Hew. (40 g), from the Amazons, has smoke-brown wings with broad dark margins and broad apex to the forewing. Across the cell of the latter is placed a wedge-shaped oblique band and towards the apex a broad, segment-shaped, white band.
- xenophis*. As **H. xenophis** spec. nov. I designate an isolated species from the Rio Ucayali, with elongate, yellow-dusted wings, which recalls *Episcada canilla* (39 c). The forewing has before and behind the end of the cell a dark pointed half-band, as well as dark margins. The greater part of the hindwing is dusted with yellow; it has likewise dark margins. On the under surface all the margins are red-brown, dark-edged, without white marginal dots.
- coenina*. **H. coenina** Hew. (40 g) differs considerably from most of the other forms by the pointed apex of the forewing and the absence of marking at the end of the cell. The wings are dusted with grey and have fairly uniform black margins. The latter are black also beneath. — In ab. **adornata** Hsch. the margins are bright red-brown on the underside, especially at the base and the anal angle of the hindwing.
- veronica*. **H. veronica** Weym., from Colombia, is larger than *coenina*; the distal margins are proximally dentate. Across the end of the cell of the forewing there is a black triangle and at the anal angle of the hindwing a rust-coloured oblong spot. The species resembles *Pteronymia thabena* and *tucuna*.
- oreas*. **H. oreas** Weym. (41 a), from southern Brazil, has broad, glossy bluish white wings with dark margins and on the forewing whitish dots at the distal margin. The half-band at the end of the cell is broad, especially in the ♀. — A nearly allied form is **proxima** Weym., likewise from South Brazil. Here the wings are colourless, the margins above grey-brown and beneath yellow-brown. In *oreas* the margins are red-brown beneath.
- mirza*. **H. mirza** Hew. (= *lavinia* Hew. p., *ryphaeno* Oberth.) (41 a), from western Ecuador, has a narrower half-band in the forewing and whitish dots at the end of the cell and the distal margin, of which those before the apex are proximally bounded by a weak oblique band. — **riffarthi** Hsch., from Ecuador, has similar, but stronger markings. But here the forewing is further distinguished by a white half-band between discocellular and apex.
- cassotis*. **H. cassotis** Bates, from Guatemala, and **rhene** Godm. & Salv. (41 a), from Panama, are very similar to each other. In *cassotis* the half-band at the end of the cell of the forewing is proximally forked, in *rhene* pointed. Moreover, the cell of the hindwing is said to be much longer in *rhene*, the lower radial on the contrary very short. — **cajona** Hsch., from south-eastern Peru, is another similar form with broader black apex to the forewing and without reddish subcostal.

32. Genus: **Pseudoscada** Godm. & Salv.

This genus differs from *Hypoleria* in the absence of the oblong scent-spot in the ♂. Costal and subcostal are almost entirely coincident. The separation of the two genera, however, cannot be rigidly carried out, as in some species an oblong raised patch combined with an indistinct costal indicate the transition. On the other hand *Pseudoscada* shows also relationship to *Hymenitis*, so that it is doubtful to which genus some species belong.

To *Pseudoscada* are referred a number of small species, some of which are also externally very similar to forms of *Hypoleria*. The sources of the Amazon and Brazil produce the most species, whilst from Central America only a few species are known from the southern part.

P. lavinia Hew. (= *saturata* Stgr.) (41 b), from eastern Colombia, much resembles *Hypoleria vanilia*, *lavinia*, but is smaller and the shape of the wings is different, as is also the neuration. — An allied form is **troetschi** *troetschi*, Stgr., from Costa Rica. The base of the forewing is colourless and the hindwing has only at the dark distal margin a broad red-yellow stripe. The rest of the hindwing is colourless.

P. florula Hew., from Cayenne, has a similar pattern to the figured local form **exornata** Hsch. (41 b), *florula*, *exornata*, from British Guiana. It lacks, however, the red-brown colour in the distal margin of the hindwing, which distinguishes *exornata*. On the under surface the margins in both forms are yellow-brown. *exornata* resembles *Napeogenes potaronus* (35 f), which likewise flies in British Guiana, and also *Hypoleria cymo* (41 a).

P. egla Hew., from the Upper Napo, and the two following forms are very similar to *Hypoleria on- egla*, *cidia* and its allies, as well as *Napeogenes corena* (36 b). *egla* has a broad yellow-red subapical band in the forewing and at the hinder angle 2 separated, roundish vitreous spots between the median veins. — In **aureola** Bates (41 b) the yellow-red band is still broader, so that at the hinder angle only one larger vitreous *aureola*, spot remains. This form flies on the Upper Amazon. — In **sarepta** Hew., from the Rio Negro, the yellow- *sarepta*, red band is proximally bordered by a broad brown stripe, which extends from the end of the cell beyond the 2. median vein to the hinder angle, as in *Napeogenes corena*.

P. utilla Hew. (= *pusio* Godm. & Salv.) (41 b), from western Colombia and Ecuador, recalls *Hypo- utilla*, *leria mirza* (41 a), but is considerably smaller and the whitish dots in the apex of the forewing are not proximally surrounded with dark.

P. seba Hew., from eastern Ecuador, has broader distal margins and no white dots at the distal margin *seba*, of the forewing, on the other hand a faint white macular oblique band at the end of the cell. — A similar form is **timna** Hew. (41 c), from Venezuela and the eastern Andes from Ecuador to Bolivia. Here the white *timna*, oblique band is stronger and the veins intersecting it are dusted with white. — Another similar form is **arzalía** Hew. (41 b), from Bolivia, with broader black apex, broader half-band at the end of the cell of the *arzalía*, forewing and a broader, arched, white oblique band.

P. adasa Hew. (41 c), from southern Brazil, is larger than the preceding, and has only a whitish spot *adasa*, at the end of the cell and whitish dots at the distal margin of the forewing. — **acilla** Hew. is a similar *acilla*, form, but smaller, with pointed half-band at the end of the cell and narrower distal borders. — **jessica** Hew. *jessica*, is the same size as *adasa*, but has a pointed half-band like *acilla*. It differs from the latter in the neuration of the hindwing, the lower discocellular forming a very acute angle with the median and ending proximally to the middle discocellular, in *acilla* on the contrary distally to it. — A fourth similar form is **erruca** Hew., *erruca*, with the distal margins more strongly dentate at the veins and white half-band beside the end of the cell on the forewing. It is said to be further distinguished from *adasa* by its more elegant form and to have the end of the cell of the forewing placed almost transversely to the length of the wings. — All four forms come from southern Brazil and are not easy to differentiate. They might even belong to different genera, which can only be determined with certainty from the types.

There follows now another group of forms whose ♂♂ are distinguished by the more pointed apex of the forewing.

In **P. fallens** Hsch. (41 c), from Central Brazil, the basal half of both wings is dusted with yellow, *fallens*, especially in the ♀, which on account of the broader distal borders strongly resembles *Pteronymia euritea* (40 d). The half-band at the end of the cell of the forewing is strongly pointed. The base of the hindwing beneath is red-brown, in *euritea* yellow.

P. salonina Hew. (41 b), from Bolivia, has colourless wings with dark brown margins and half-band *salonina*, at the end of the cell of the forewing and also a yellowish oblique band towards the apex. — A very similar form, with somewhat broader margins, flies also in Paraguay. — As **trepotis** *form. nov.* I designate a form *trepotis*, like *salonina* with white instead of yellow oblique band on the forewing. It flies likewise in Bolivia. — **subtilis** Hsch., from eastern Ecuador, is distinguished from *salonina* by yellowish dusting on the wings and *subtilis*, weaker half-band across the end of the cell of the forewing.

P. emyra Hsch., from Central Brazil, is a similar form to *arzalía*. The black apex of the forewing *emyra*, and the triangle at the end of the cell are broader. The 3. median vein remains black in the white oblique band. The distal margin of the hindwing is narrower.

33. Genus: **Dismenitis** Hsch.

The species of this genus were formerly united with those of *Hymenitis*. In the ♂♂ the lower radial of the hindwing is completely developed, hence the cell is closed. In the ♀ the upper radial is partly coincident with the subcostal; the lower radial is distinctly present; the lower discocellular is angled, with short upper arm and recurrent vein.

The genus contains for the most part imposing-looking species, some of them brightly coloured, which inhabit especially the high mountain range of the eastern Andes near the Equator. Some species also fly in the mountains of Central America.

- zavaleta*. **D. zavaleta** Hew. (41 c), from Colombia and Peru, has yellow-dusted wings, a transverse band in the cell of the forewing and broad black distal margin to the hindwing with white dots. The distal half of the antenna is yellowish. — In the form **amaretta** Hsch., from eastern Ecuador, the transverse band through the cell of the forewing is absent, on the other hand the basal third of the cell is dark-shaded. The distal margin of the hindwing is narrower and the white dots are smaller. In the ♀ the base of the hindwing is broadly black. — **matronalis** Weym., from Ecuador and the Upper Amazon, is a form of *zavaleta* in which the white marginal dots are entirely absent above and beneath. — **telesilla** Hew., from western Ecuador, has a similar ♂ to *amaretta*, with weaker yellow dusting and without the dark half-band across the end of the cell of the forewing. The distal margin of the hindwing is broader with very small white dots. The ♀, in which the distal margin of the hindwing is twice as broad, may be recognised especially by a large red-yellow spot at the inner margin of the hindwing.
- gonussa*. **D. gonussa** Hew. (41 c, d, ♂, ♀), from Colombia, is somewhat larger than the preceding species. The ♂ is similarly marked to the ♀ of *zavaleta*. The half-band at the end of the cell of the forewing is broader and the wing has white marginal dots on the upper surface also. In the ♀ the black markings are much broader and the yellow dusting of the ♂ is in this red-brown. The white marginal dots of the hindwing are much larger. — **petersi** Dew., also from Colombia, is a form of the preceding in which the red-brown colour on the forewing and at the apex of the hindwing becomes bright yellow.
- zygia*. **D. zygia** Godm. & Salr. (41 d), from Costa Rica, is similar to *gonussa*. In the ♂ not only the transverse band in the cell but also the whole of the forewing is shaded with dark. The yellowish spots round the end of the cell are larger and joined into a band. The disc of the hindwing is brownish yellow near the veins, especially at the inner margin. In the ♀ the inner margin of the forewing is red-brown in the middle as far as the median, as is also the entire disc of the hindwing. The black distal margin is narrower than in *gonussa* and not proximally dentate at the veins. — **sosunga** Reak. is a form from Honduras with broader yellow oblique band on the forewing and broadly blackish apex to the hindwing. Hence in the ♂ only the basal half of the hindwing is red brown.
- dircenna*. **D. dircenna** Fldr. (41 c) strongly recalls certain species of the genus *Dircenna*, such as *epidero*, etc., but may be recognised by the neuration of the hindwing. The forewing has 2 narrow half-bands across the end of the cell and through the middle of it. The black distal margin of the hindwing is broadened and dentate at the anal angle and in the ♀ there is a roundish black spot at the end of the cell. This interesting species flies in the eastern Andes from Colombia to Bolivia. — **pittheis** Weym., from Colombia, is a similar form, without the bands on the hindwing and with diaphanous forewing. On the under surface the margins are yellow-brown, with a white dot at the apex and the distal margin of the hindwing. — **barretti** Dan. is another similar form from Peru without the bands in the cell of the forewing and at the end of the cell and the distal margin of the hindwing. There are 4 white dots in the black distal margin of the hindwing above.
- duilia*. **D. duilia** Hew. (41 d) is one of the largest and most beautiful species of the whole family. When the sunlight falls on the bluish-white-dusted wings the most magnificent colour effects are produced. On the forewing the veins and margins are edged with dark brown, only beyond the end of the cell at the costal margin there is a yellow-red stripe. The hindwing has a broad dark brown costal margin and a broad red-brown inner margin as far as the 1. median vein. *duilia* flies in the eastern Andes from Colombia to Bolivia and is not rare at certain places. A deceptively similar species is the smaller *Hymenitis alphasiboea* (41 f). Another similar form is **nepos** Weym. (= *lora* Stgr.), from Colombia. The streak at the costal margin of the forewing is only half as long and yellow-brown. The costal margin of the hindwing is much more narrowly bordered with dark. The inner margin is likewise narrower and dark brown, only reddish at the base. The neuration is also somewhat different.
- theudelinda*. **D. theudelinda** Hew. (41 d), from the eastern Andes from Colombia to Peru, is very similar to *Vel-amysta pardalis* (40 e). But the band-like marking at the apex of both wings is absent, on the other hand a dark spot is placed at the end of the cell of the hindwing. The marking is fairly similar in both sexes. — **hermana** Hsch., from Ecuador, is a very similar form. In the ♂ the costal and subcostal of the hindwing

are coincident to the end of the cell; only one hair-pencil is present, the upper radial is absent. The dark spots at the end of the cell on both wings are smaller. The white marginal dots of the hindwing are triangular. — **zalmunna** Hew., from Ecuador and Peru, is another similar form with narrower margins, narrower marking across the end of the cell of the forewing and without a spot across that of the hindwing in the ♂.

D. cleomella Hew., from Bolivia, is likewise similar to *theudelinda*, but the yellowish club of the antenna is distinctive. The costal margin of the forewing is not yellow-brown. Both wings have yellow tone. The pattern is somewhat different from that of *theudelinda*. The distal margin of the forewing is more broadly margined with black between the teeth. The white marginal dots of the hindwing are smaller. The spots at the end of the cell on both wings narrower, band-like.

D. crinippa Hew. (41 d), from Bolivia, has brown, dentate distal margins and in addition to the half-band of the forewing a spot in the cell, as well as yellowish dots at the end of the cell and before the distal margins.

A similar, somewhat smaller species, which I call **D. lauta** spec. nov., differs especially in the absence of the band-spot in the cell of the forewing. It is very similar to *Hymenitis umbrosa*, from which it may be distinguished both by the size and the different neurulation. In the ♀ the two white dots of *umbrosa* at the apex of the hindwing beneath are wanting.

In **D. cleonica** Hew. (41 e), from eastern Colombia and Ecuador, the markings are similar, without the spot in the cell of the forewing and with yellowish colour in the basal half of the hindwing and a white spot at the end of the cell of the forewing. — **panthyale** Fldr., from Colombia, is similar to the preceding, without the yellowish colour on the hindwing and with red-brown subcostal and median to the forewing.

D. hewitsoni Hsch. (41 e), from eastern Ecuador, has transparent wings with yellow-brown sheen, with fine, darker margins and no other markings. Subcostal and inner margin of the forewing are light brown.

34. Genus: **Hymenitis** Hbn.

In this genus the lower discocellular of the ♂ is not angled and is undeveloped towards the costal margin, hence the cell open. The principal difference from *Dismenitis* is seen in the ♀♀. In these the upper radial of the hindwing is coincident with the subcostal to one-half, in *Hymenitis* it is coincident with the lower radial half-way. Hence the middle discocellular is absent here.

To *Hymenitis* belong mostly medium-sized, plain-looking forms, which resemble certain species of *Leucothyris* and *Pteronymia*, but may be recognised by the non-angled, slightly curved lower discocellular, which closes the cell almost alone. Some larger species recall forms of *Velamysta* and *Dismenitis* in the pattern and colouring. This genus is rather rich in species, of which the south-west of South America produces the largest number, but Central America and Mexico have also some characteristic forms.

H. albinotata Btlr. (41 g), from Colombia, recalls *Velamysta crucifera* (40 f) and *torquatilla* (40 f) by the dark markings of the hindwing; the forewing is similar to that of *Dismenitis gonussa* (41 e, d). The colour is yellowish, at the base of both wings red-brown. Particularly striking are the two white dots in the apex of the forewing. — **kedema** Hew., from Venezuela, is a similar, smaller form with weaker, pale colouring and indistinct band-marking at the distal margin of the hindwing. — **furina** Godm. & Salv. is a form of *albinotata* from Panama with dark base to the cell of the forewing, lighter base to the hindwing and weaker black markings at the distal margin of the hindwing.

H. andromica Hew. (41 f), from Venezuela, Colombia and western Ecuador, and its subspecies are some of the commonest and most widely distributed local forms. In typical *andromica* the colourless wings have a slight smoke-brown tinge and black-brown margins and patches. Beside the pointed half-band of the forewing runs a broad, undulate white oblique band from the costal to the distal margin. In the apex are placed 2 whitish vitreous spots, which in the ♀ are completely enclosed by the broad black apex. — As **dromica** STAUDINGER (i. l.) designated a smaller form from Colombia with narrow margins, weak half-band and narrow white oblique band at the end of the cell of the forewing. — **andania** Hpffr. (= *lyrina* Stgr. i. l.) is a form from eastern Ecuador, Peru and Bolivia with vitreous, black-margined wings and interrupted white oblique band on the forewing. The apex of the forewing is more narrowly black and in the ♀ the hyaline spots are not proximally bordered with black. — **lyra** Salv. is the form from Central America (Guatemala, Costa Rica). It is distinguished from *andania* by having the half-band of uniform breadth and not pointed, and a narrower white macular oblique band on the forewing. The black tooth bordering the subapical hyaline spots at the costal margin is absent.

H. nero Hew. (41 e), from Central America, Costa Rica to Mexico, is similar to the preceding, larger, with broader margins and patches. The subcostal of the forewing and the distal margins are partly red-brown. On the underside of the forewing the 2 white apical dots of *lyra* are absent.

- oto*. **H. oto** Hew. (41 e), from Honduras and Guatemala, has broad black apex to the forewing and a broad half-band at the end of the cell as well as a white oblique band. The subcostal of the forewing and the distal margin of the hindwing are partly red-brown.
- morgane*. **H. morgane** Hbn.-G. (41 e), from Mexico and Honduras, is noteworthy on account of the rust-brown margins. Behind the irregular half-band at the end of the cell of the forewing an indistinct, narrow white macular band runs from the costal to the distal margin. — In **moschion** Godm., from Mexico, the rust-brown apex and the half-band across the end of the cell of the forewing are said to be narrower; the white spots do not form a distinct band; the genitalia of the ♂♂ differ from those of *morgane*.
- annetta*. **H. annetta** Guér., from Mexico and Central America, is smaller than *morgane*, with narrower, dark brown margins and a half-band on the forewing. From the end of the cell to the distal margin of the forewing runs a row of white spots, which are not parallel with the dark half-band, much as in *Pteronymia simplex* (40 b). In addition there are 2 white dots at the apex and one at the hinder angle.
- nerina*. **H. nerina** Hsch., from Colombia, is of the same size as *andromica* and has similar markings to *nero* (41 e). The white oblique band of the forewing is broken up into spots. The margins are brown-grey above and light brown beneath, with 2 white dots in the apex of the forewing and one in that of the hindwing.
- polissena*. **H. polissena** Hew., from western Ecuador, closely resembles a form from Costa Rica which I call *umbrana* form. nov. (41 f). Both forms have diaphanous wings with narrow black margins and pointed half-band at the end of the cell of the forewing, and also white dots at the end of the cell and the distal margin of the forewing. *umbrana* has further white dots at the apex of both wings, *polissena* on the contrary only 2 white dots in the red-brown apex of the forewing beneath. In *umbrana* the abdomen beneath is whitish, in *polissena* yellowish. In the ♀♀ the margins and half-bands and also the white spots are broader.
- diaphanus*. **H. diaphanus** Drury (= *unzerina* Hbst.), from the Antilles (Jamaica), which is also said to occur in Texas, is a similar species with narrow distal margin to the forewing and fine distal border to the hindwing. The half-band at the end of the cell of the forewing is of uniform breadth.
- cubana*. **H. cubana** H.-Schäff., from Cuba, has similar markings to *oto*, but very narrow wings and narrower margins. The half-band of the forewing is constricted in the middle and forked at the median. The white oblique band is narrower than in *oto*.
- alphesiboea*. **H. alphesiboea** Hew. (41 f), from eastern Ecuador, is a copy on a small scale of *Dismenitis duilia* (41 d) and apart from the size can only be recognised with certainty by the different venuration. In the ♀ the upper radial of the hindwing is coincident with the lower to one-half, in *duilia* with the subcostal.
- ortygia*. **H. ortygia** Weym. (41 f), likewise from the eastern slopes of the Andes in Ecuador, stands in the same relation to *Dismenitis cleonica* (41 e). In the figure of the ♂ the white dots at the end of the cell and the distal margin of the forewing stand out too little; in the ♀ they are much stronger.
- enigma*. **H. enigma** Hsch. (41 f), from Bolivia, has yellow-brown costal margin of the forewing and dark brown, dentate distal margins, and also yellowish patches at the end of the cell of the forewing and before the distal margins. On the under surface all the margins are ochre-coloured. — A similar form is **umbrosa** Hsch., from the high mountains of the eastern chain of the Andes in Ecuador. In it the margins are narrower, the yellow patches more indistinct, and in the forewing only the subcostal is yellow-brown. In the ♂ the end of the cell of the forewing has no marking. — **esula** Hew., from Colombia, is similar to the preceding; the margins are still narrower, the yellow patches are absent, on the other hand the hindwing is yellowish at the inner angle. Moreover in the ♀ also the end of the cell of the forewing is without marking. — **depauperata** Bdv., from Guatemala, which is unknown to me in nature, is probably a form similar to *enigma*. It is said also to resemble *zalmunna* and to be distinguished from it by the narrower distal margin of the hindwing and the absence of the white spots.
- sappho*. A species from Bolivia which I received as **H. sappho** (Bang.-H. i. l.), of the same size as the preceding, has colourless wings with black-brown margins, of which the distal ones are dentate at the veins. Beside the irregular half-band at the end of the cell of the forewing is placed at the costal margin a white spot, and at the distal margin of both wings there are small whitish patches. Beneath the margins are deep red-brown, at the base of the hindwing yellow-brown.
- gardneri*. **H. gardneri** Weeks, from Bolivia, is a similar form to *pittheis*, without the band in the cell of the forewing. The costal margin of the forewing is red-brown to the end of the cell. At the end of the cell of the forewing and before the distal margins are placed white patches.
- libethris*. **H. libethris** Fldr. (41 f), from Colombia to Peru, and a number of similar forms are distinguished by a bright yellow oblique band in the forewing. *libethris* differs from the very similar **dercetis** Dbl. & Hew., from Venezuela, Colombia and Ecuador, in the more elongated forewing and the shorter inner margin of the hindwing. Moreover the base of the hindwing beneath is yellow. — **ochretis** Hsch., from Colombia to Bolivia, is of the same size and shape as *dercetis*. The oblique band of the forewing is broken up into 2 yellow-brown spots. In the apex of each wing there are 2—3 further yellowish patches. The base of the hindwing beneath is yellow, on the other hand the white dots in the apex of the forewing are absent.

H. lydia Weym., from Ecuador, has a broad, yellow-brown costal margin to the forewing, in which *lydia*, it recalls *Pteronymia apuleia* (40 a) and *Hymenitis enigma* (41 f). The pattern is as in *ochretis*, with smaller, indistinct, yellowish patches.

H. quinta Stgr., from the Cauca Valley in Colombia, is one of the Ithomiids which are entirely without markings on the wings and recalls the very similar *Episcada paradoxa*, with which it also agrees in size, and also *Velamysta anomala*, *Napeogenes hypsaea*, *Ithomia dimidiata* and other forms with unmarked, colourless or yellowish wings. *quinta* is distinguishable from the similar species of other genera by the large, non-angled lower discocellular of the hindwing, which almost alone closes the cell.

35. Genus: **Heterosais** Godm. & Salv.

In this last genus of the Ithomiids the cell of the hindwing in the ♂♂ is open, the middle discocellular and upper radial being absent. The subcostal is strongly developed and curved in the middle. The lower discocellular is directed proximad and forms with the lower radial an acute angle, from the point of which a vein runs into the open cell. In the ♀ the cell is closed, as the lower discocellular is angled and reaches to the upper. Middle discocellular and upper radial are absent here also.

The species of this genus are not numerous. They occur mostly in the north-west of South America and the adjoining districts of Central America. They are mostly inconspicuous forms of medium size, which are found with the similar species of other genera in the undergrowth of the primeval forests.

H. nephele Bates, from the Upper Amazon, and **gedera** Hew. (41 g), from eastern Ecuador and Colombia, are two very similar forms. Both have vitreous wings with bluish sheen and black-brown margins and half-band on the forewing in addition to a white spot at the end of the cell and 2 whitish patches in the apex of the forewing and on its underside 2 more white dots in the distal margin; in the distal margin of the hindwing a row of dark edged white dots. — **edessa** Hew. (41 g) is a similar form from southern Brazil with smaller white spot at the end of the cell of the forewing, yellow-brown margins on the under surface and light base to the hindwing. *nephele.*
gedera.

H. pallidula Hsch., from western Ecuador, has yellowish wings with yellow-brown subcostal and a broad stripe on the median of the forewing. The other margins are dark brown, only the distal margin of the hindwing is partly variegated with yellow-brown. At the end of the cell of the forewing and the distal margins there are yellowish dots. In the ♀ only the subcostal of the forewing is yellow-brown, the other margins are brown. *pallidula.*

H. giulia Hew. (41 g), from Colombia and Venezuela, has a similar ♂ to *pallidula*, with broad yellow-brown subcostal vein and stronger yellowish dots. The ♀ is quite similar, but more brightly marked, with broader margins, yellow oblique band on the forewing and large yellowish dots at the distal margin. *giulia.*

H. cadra Godm. & Salv., from Panama, is said to be similar to *nephele* and *giulia*. The wings are colourless. The dark half-band of the forewing is proximally broader, the band beside it is white, the inner margin yellow-brown. *cadra.*

Addenda.

Napeogenes domiduca Hew. very closely approaches some *Leucothyris*, such as *Leuc. cyrene*; further details are given under the latter, p. 148; from Bolivia.

Alphabetical List

with reference to the original description of the forms of the American Danaidae.

* signifies that the form is also figured at the place cited.

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yungava Pter. *Hsch.* Berl. Ent. Zschr. 50, p. 175.

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zalmunna Dism. *Hew.* Exot. Butt. 4.
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zea Leuc. *Hew.* Exot. Butt. 1.
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4. Family: **Satyridae.**

This family, which is very rich both in genera and species, is well distinguished by several characters not only in the perfect insect but also as larva and pupa, so that Satyrids are easy to recognise in all stages.

One of the chief characteristics of the butterflies consists in the basally swollen veins of the forewing. In most cases it is only the costal vein which shows this bladder-like thickening, in many cases the median likewise has it, but in some genera also the submedian, e. g. in *Oressinoma*, *Coenonympha*, and to a less extent in *Pierella*. The first three genera *Callitaera*, *Haetera* and *Pierella* have the submedian of the forewing, apart from the above-mentioned bladder-like thickening, also basally forked and form in this the transition to the Ithomias, which is also indicated by the partly thin, hair-like scaling and the transparency of the wings. Of the subcostal veins 2 mostly arise before and the rest behind the end of the cell of the forewing, but several genera differ in that the 2. subcostal vein only arises at the end of the cell or behind it. The middle cell of both wings in all the Satyrids is closed, the lower discocellular vein of the hindwing moreover in almost all the genera runs into the curve of the upper median; only in two of the first genera, in *Haetera* and *Pierella*, is this not the case. In *Haetera* the lower discocellular and the median meet at the origin of the middle median vein, in the genus *Pierella* on the other hand between the origin of the middle and that of the lower median.

The shape of the wings is rather variable. Sometimes both wings are rounded, sometimes only the forewing, whilst the margin of the hindwing is undulate or dentate. Often the forewing also shows angles at one of the radials, sometimes the apex of this wing is sickle-shaped or the costal margin itself is produced into a sharp point. Moreover sharper angles and points occur at the three median veins and at the submedian of the hindwing or the lower median vein is prolonged into a rather long tail (*Corades* and *Bia*).

The inner margin of the forewing in the greater number of species is straight or deviates but little from the rectilinear, only in the ♂♂ of the genus *Antirrhoea* and in one species of *Caerois* is it so much outcurved that the anterior part of the hindwing is covered by it. In this expansion is placed on the under surface between median and submedian the so-called scent-organ, consisting of a row of closely approximated, stiff hairs, which often form a semicircle or a wedge-shaped, pointed ellipse, the curly tips of the hairs bending over towards one another. In addition to the genus *Antirrhoea* the scent-organ is only found in the ♂♂ of the *Caerois*-species. In one species of this latter genus, however, it is placed close to the inner angle on the underside of the forewing, so that it is not covered by the hindwing. Tufts of hair are also found in the genus *Bia* on the upperside of the hindwing, smaller hair-pencils in some *Euptychia*. Perhaps these may likewise be regarded as scent-organs, as they only occur in the ♂♂.

The greater proportion of the species of Satyrids are above uniform dark brown, so that the markings are confined to the under surface. Here belong most species of the genera *Taygetis*, *Euptychia*, *Lymanopoda*, *Pedaliodes* and *Pronophila*. But all these genera show at the same time a number of species which are brightly coloured also on the upper surface and have striking and beautiful markings. On the underside the ocellated markings are represented in a variety of ways. Several species have also beneath larger or smaller silver spots or silver stripes and dots. Some Chilian species have the wings entirely silver-coloured above.

The antennae of the Satyrids are mostly thin and delicate, at the same time rather short, not reaching half the length of the forewing. The shaft widens very gradually into the little-thickened club, only a few genera have a short, broad club. The palpi are usually densely and strongly haired, sometimes the eyes are also hairy, the forelegs in both sexes aborted.

The eggs of the American Satyrids, as far as they are known, have a rather spherical or hemispherical form, with the sides ribbed or regularly divided by raised transverse ridges.

The larvae are spindle-shaped, thicker in the middle, narrowed towards each end, but the head in several species is thicker than the anterior segments, also sometimes with 2 short, obtuse horns above, in others also at the sides provided with conical protuberances on which are placed short bristly hairs. The smooth or finely granulated, spineless body terminates at the posterior end in 2 points, which are mostly straight, but sometimes also curved upwards. The colour is mostly green, but there occur also longitudinal stripes of various colours. They live on grasses, reeds, species of bamboo, sugar-cane and palms, remain hidden by day and come out at dusk to feed.

The pupae are comparatively short and thick, without strikingly projecting angles. They are either attached at the tail-end or lie free on the earth or are hidden under stones.

Many of the tropical Satyrids are dusk-butterflies, i. e. they remain at rest all day and fly about near the ground in the early morning and the dusk of evening with unsteady, sometimes jumpy flight in woods or thickets. Here belong the dark-coloured species of *Taygetis* and *Euptychia*. All day long we find single *Taygetis* in the dense timber-forests, resting with closed wings on the ground, where they can

scarcely be distinguished from the dried foliage and are not noticed until they fly up. Herr HAENSCH, who has been kind enough to give me these notes on the habits of the Satyrids, for which I am much indebted to him, has observed that specimens when pursued lay down flat on the dry leaves on the ground and could then only be found by startling them up. The transparent species of *Callitaera* and *Haetera*, as well as the nearly allied *Pierella*, are always found in the shady timber-forests, mostly singly near the ground, and prefer the narrow foot-paths. When one comes near them, they rise at a distance of a few paces and fly along the path close to the ground, soon settling again, but only again to fly off on being pursued. In this way the weak-flighted insects may often be followed for quite a distance, until, leaving the path, they are lost in the wood. The least shy of light are the genera *Oxeoschistus*, *Lasiophila*, *Pedaliodes* and *Corades*, thus in general the most brightly coloured forms. These are frequently mountain species, occurring at elevations of over 2000 m. They are met with gregariously fluttering backwards and forwards on the road or feeding on the ground at the excrement of cattle and other foul substances, but always near to thickets, where they take refuge in danger. The species of *Corades* are not easy to recognize in a bush, as they rest on twigs with the wings closed after the manner of *Kallima*.

The Satyrids are distributed in America from the extreme south (Tierra del Fuego) to the arctic regions of the far north. Tierra del Fuego produces an *Erebia* and a *Cosmosatyrus*, whilst in the northern region occur, besides representatives of the genus *Erebia*, also of the genera *Coenonympha*, *Satyroides* and *Oeneis*. In the high mountains of South America the Satyrids ascend to the snow-line and hence we find in Colombia, Ecuador, Peru and Bolivia even at elevations of over 4000 m. single representatives of the genera *Pedaliodes*, *Lymanopoda*, *Pseudomaniola* and *Cosmosatyrus*. Among these inhabitants of the mountains there are some species which are very local and only have a limited range of distribution. Hence on closer investigation of such remote, hitherto little explored districts new forms are still found.

1. Genus: **Callitaera** Btlr.

Delicate butterflies with thin body, transparent, thinly scaled, rounded wings, small, sparsely haired palpi, thin antennae, only a little thickened apically. The costal vein of the forewing is strongly swollen at the base, the median on the other hand but little, the submedian is basally forked. Two subcostal veins arise before the end of the cell, the upper discocellular is absent. In the hindwing in this and the 2 following genera the costal and subcostal veins arise from the base near together. The lower discocellular runs into the origin of the upper median vein. — The species are distributed over tropical South and Central America. They fly slowly and low in the early morning hours in dark timber-forests. Several of the species are very similar and all are of nearly the same size.

menander. **C. menander** Drury (= andromeda F. (pt.)) (42 a). Forewing with the margins narrowly dusted with brownish and 2 fine brown transverse lines, one running through the middle of the cell, the other across the discocellulars, but both extending from the costal to the inner margin. On the hindwing near the distal margin and apex a round black eye surrounded by a yellow and a brown ring and with a white pupil, which, however, is not placed in the middle but at the distal margin of the black part. The inner transverse line of the forewing is continued indistinctly on the hindwing, the outer one is somewhat broader and more band-like; forms on the anterior median vein a distally directed, acute angle and then extends to the hindmargin. The posterior part of the distal margin is narrowly edged with brownish and the space between it and the above-mentioned band is light rose-red, especially in the ♂. — Central America. Colombia.

pireta. **C. pireta** Cr. (42 a) is very similar to the preceding species and differs from it chiefly in having in the posterior half of the hindwing near the brown distal-marginal stripe a further brown submarginal stripe, which is not present in *menander*. All these stripes, marginal, submarginal and outer median, are covered, as it were, by the light rose-red colour. — From the Upper Amazon, Ecuador.

aurora. **C. aurora** Fldr. is similar to the preceding species, but according to the original description is not marked with purple but pale lilac in the posterior part of the hindwing and is dusted with ochre-yellow, and also has the ocelli on the wings elongated. The figure of *aurora* in STAUDINGER's exotic work pl. 77 does not agree with this. This figure I regard as belonging rather to the following *aurorina*; *aurora* Fldr. *aurorina.* occurs in Colombia and North Brazil. — **aurorina** form. nov. (= *aurora* Stgr. nec Fldr.) (42 a). I give this name to the form similar to *pireta* Cr., in which the light rose- or purple-red colour of the hindwing extends from the distal margin into the cell and nearly reaches the base of the wing. From Colombia and the Upper Amazon.

pellucida. **C. pellucida** Btlr. (42 b) is a species similar to *menander* Drury, in which the rose-red dusting is entirely absent. The brown marginal band and the similarly coloured submarginal band of the hindwing

are connected by short brown stripes lying along the veins. There are 2 brown dots before the margin near the eye-spot. — Cayenne.

C. philis Cr. (= *cissa* Hbn.) (42 b). Very similar to the preceding species, but has the brown *philis*. marginal and submarginal stripes of the hindwing somewhat narrower and the median area before these stripes sprinkled over with violet-blue dust, which, however, is laid on so thinly that the wing remains transparent, only in certain positions showing a very distinct blue reflection. Surinam. — **harpalyce** Btlr. *harpalyce* is probably only a local form of the preceding, which has the blue reflection along the median veins specially distinct, and which in addition to the eye at the anterior part of the distal margin has also a small eye with a yellow ring between the middle and lower median veins. From the Upper Amazon.

C. esmeralda Dbl. (The older name *andromeda* F. cannot be employed for this species, because *esmeralda*. FABRICIUS has mixed up several species together under this name.) Similar to the preceding species, but the blue reflection in the central area of the hindwing is wanting. Instead of this the posterior part of the distal margin is bluish violet, and at each side of the lower median vein is placed in this border a red-yellow ring with white centre. The eye in the anterior part of the distal margin is as in the other species. Between this and the two posterior ocelli there are 2 round white spots. Pará. — As **bandusia** *bandusia*. Stgr. an *esmeralda*-form has been described in which instead of the two anal ocelli of the hindwing there are two reddish white spots placed in a large cyaneous spot. From the Rio Maues, a tributary of the Lower Amazon.

C. pyropina Godm. & Salv. (42 b). Forewing without markings. Hindwing at the anal angle with *pyropina*. broad, brownish violet distal margin which extends to the lower radial. In this are placed 3 rose-red spots and close to the margin a narrow rose-red stripe. The ocellus in the anterior part of the distal margin is as in the allied species, behind this is a white dot. — From Bolivia and East Peru.

C. polita Hew. (42 b). The only species of the genus which shows on the hindwing no red or blue *polita*. colour. The wings are shorter and broader than in the other species. Costal and distal margins of the forewing are narrowly brown, 2 half and 2 entire narrow brown transverse stripes traverse the forewing, whilst the hindwing has only a marginal and a submarginal band, of which the latter is strongly angled. The ocellus in the anterior part of the distal margin as in the other species. — From Nicaragua, Chiriqui in Panama, Costa Rica, Colombia, rare.

2. Genus: **Haetera** F.

The butterflies are on an average somewhat larger than those of the genus *Callitaera*, but the wings are equally delicate and transparent, and the submedian of the forewing is forked at the base. But the costal vein of the forewing is less strongly inflated. The principal difference, however, consists in the position of the lower discocellular of the hindwing. This vein ends at the origin of the middle median vein. The 3 discocellulars are placed vertically and form almost a straight line, the apex of the cell being acute.

H. piera L. (♀ = *anacardii* F. nec L.) (42 c). Forewing diaphanous, without markings, only with *piera* narrow brownish costal and distal margins. Hindwing in and behind the middle with fine ochre-yellow dusting, with a fine brownish transverse stripe, which is strongly angled in the middle and whose posterior part in the ♀ is darker and more distinct, with brownish distal margin, which forms in the middle a somewhat obtuse angle. Before the distal margin anteriorly a larger and posteriorly a smaller black ocellus, the former with obliquely placed, the latter with centrally placed white pupil. Both ocelli have ochre-yellow iris and brown ring; between the ocelli 2 white dots. Common in Guiana and on the whole of the Amazon, extending to the south of Brazil. In the forests of the Cordilleras of Colombia common at elevations of 1200—2500 m. Flight very slow. The egg is spherical, somewhat flattened at the base, smooth, shiny white. — **diaphana** Luc. (= *hymenaea* Fldr.) is a form of *piera*, in which the ochre-yellow *diaphana*. dusting on the hindwing is absent and the brown markings are more distinctly prominent. Bahia. — **negra** Fldr. is another, larger, form of *piera*, in which the brown submarginal stripe in the ♂ is effaced *negra*. and the marginal stripe placed further from the margin. In the ♀ both stripes are narrower and the proximal one is more curved than in the type form. Rio Negro. — **unocellata** form. nov. (42 c), a hitherto *unocellata*. undescribed local form of *piera*, has on the hindwing only the smaller ocellus before the anal angle. The other larger eye-spot at the apex is absent or only indicated by a black dot. The brownish submarginal band is only distinct in the posterior half of the wing and the space between it and the brownish distal margin is dusted with ochre-yellow at the anal angle. On the under surface the iris of the eye-spot is not red-yellow, but sulphur-yellow and twice as broad, the black centre on the contrary much smaller than above. Bolivia.

maclean-
nanian. **H. macleannanian** Bates (= *diaphana* Btlr. & Druce nec Luc.) (42 c), a similar, somewhat larger species, with the wing-expanse 72—80 mm., which is distinguished by having the posterior half of the hindwing in the ♀ rose-red between distal margin and submarginal stripe. In the ♂ this rose-red colouring is only present in the obtuse angle in the middle of the distal margin. The brown submarginal stripe is mostly broader and more distinct than in *piera*, the eye-spots vary in size, sometimes in the ♀ attaining a diameter of 5 mm. The ochre-yellow dusting in the diaphanous part of the hindwing is absent. — Panama and Costa Rica.

hypaesia. **H. hypaesia** Hew. (42 c) is an easily recognized species, in which the broad dark brown submarginal band of the hindwing is united with the like-coloured distal margin, so that a marginal band of 4—7 mm. in breadth is formed, in which is placed in each cell a hyaline spot. On the forewing a narrow stripe of dark brown dusting runs from the discocellular to the inner margin. Above the eye-spots of the hindwing are not distinguishable, beneath on the contrary distinct, one between the 2 radials, the other close beside the middle median vein. Both are black with brownish yellow ring and white pupil. In many specimens the submarginal band is traversed by a row of brownish yellow lunules. — Common in Colombia, Ecuador, Peru and Bolivia at elevations of 1000—2200 m.

3. Genus: **Pierella** Westw.

The shape of the forewing is similar as in the preceding genera, but that of the hindwing different. The distal margin of this wing is in most species undulate, in some it is obtusely angled at the upper median vein, in *dracontis* it is produced into a point. Although the wings are more densely scaled than in *Callitaera* and *Haetera*, yet the scaling is not nearly so dense as in the following genera. The wings are therefore in all the *Pierella*-species still to a certain extent semitransparent although not altogether diaphanous. The principal distinctive character of the genus is here also found in the position of the lower discocellular of the hindwing. This reaches the median between the origin of the middle and that of the lower median vein, thus between M_2 and M_1 . The costal vein and the subcostal of the hindwing arise separately at the base. The submedian of the forewing is furcate at the base. The ♂♂ have on the upperside of the hindwing in the middle of the inner margin a small oval spot, measuring 2—2½ mm., which is bare or covered with more deeply placed scales. In most species this spot is light coloured, in some with a dark central dot, but in *astyoche* it is dark brown, so that it is here easily overlooked. Only in *hortona* is it large, 10 mm. long and 3 broad, and of a light ochre-yellow colour. The size of the species varies between 55 and 75 mm. wing-expanse. The range of distribution extends over the whole of tropical America, some species reach South Brazil in the south and Mexico in the north.

a) With light, dark-bordered transverse band on the under surface of both wings.

nereis. **P. nereis** Drury (42 d). ♂ 62 mm., ♀ up to 72 mm. wing-expanse. Across the grey-brown, semi-transparent wings runs a straight, dull white, brown-bordered band, which in the middle of the hindwing is widened into a large, pure white spot. The distal half of the hindwing is red-yellow with 2 black, white-centred ocelli and 3 white spots. Distal margin darker brown. The ♀ has 1—3 white dots before the apex of the forewing. On the under surface the ground-colour is lighter, the red-yellow is clouded with grey, the white band is continued in a straight line to the inner margin of the hindwing, the brown distal margin is wanting, the eye-spots are only quite small and in the basal area of each wing there is a brown, shorter or longer line. — South Brazil, Rio de Janeiro. Common.

helvina. **P. helvina** Hew. (42 d) approaches the preceding species in the scheme of markings, though not in the colouring. Ground-colour dark brown, light band of the forewing dusted with brownish, the brown bordering broader. In the cell there are 2 brown transverse lines, of which the proximal one is continued to the inner margin, a third short line is placed on the discocellulars, before the apex a round black spot in a light circle with 2 white dots below it and one above. The basal area is brown to beyond one-third the length of the wing, rather straight-margined distally. Then follows a large, triangular, carmine-red area which extends from the costal margin nearly to the inner margin and also near to the distal margin. The latter is black-brown, at the apex with a black-eye-spot with white pupil, a white dot above it at the costal margin and a similar dot below it in the red area. On the under surface the forewing is as above, only lighter. On the likewise lighter hindwing in the basal area three straight, brown, parallel lines run from the costal to the inner margin. Immediately behind the third line follows a reddish grey band, likewise traversing the whole wing, which in the middle is almost twice as broad as at the costal and hind-margins and is bordered at the distal side by a fourth brown line. Distal margin brown, the eye-spot smaller than above and with ochre-yellow ring, one white dot before and two behind the eye. — Muzo, Colombia.

P. incanescens Godm. & Salv. (42 d) only differs from *helvina* in having the proximal border of the red area of the hindwing 2—3 mm. behind the end of the cell, whilst in *helvina* it runs right across the tip of the cell. The red colouring is placed more distally and posteriorly and encloses two white dots; the brown distal margin is narrower. Distributed in Central America: Chontales in Nicaragua; Irazu and Santa Clara Valley in Costa Rica; Chiriqui, Chepo and Bugaba in Panama. Common at the last-named locality. — **ocreata** Godm. & Salv. is another form, in which the red area of the hindwing is much reduced. The anterior part of it is replaced as far as the median by a large, white, elongate-quadrate spot and the white dot below the black eye-spot is somewhat larger. The brown distal margin is as broad as in *helvina*. This form has a restricted range in Panama, having been found at Calobre and Lion Hill. It is still very rare in collections. — In **hymettia** Stgr. (42 d), a further form similar to *helvina*, the red area of the hindwing is still more reduced, being at a distance from the inner margin and broken up. In the figured ♂ it consists of 3 parts, a spot in the middle of the wing of 12 mm. in length and 6 mm. in breadth, a small round spot in cellule 4 and a red dot below it in cellule 3. In the ♀ all the 3 parts are united into a larger spot. At the middle of the costal margin there is a white spot, which, however, is only half as large as in *ocreata*, only extending to vein 6. The ground-colour of this form is above and beneath dark brown, almost black-brown. From the Rio Dagua and Rio San Juan in West Colombia. Flies in August.

P. astyoche Erichs. (= *larymna* Dbl.) (42 e). Ground-colour brown, 2 parallel, straight, dark brown transverse lines run behind the middle across both wings from the costal to the inner margin. They enclose no lighter band above. This is only present on the under surface, the space between the lines being here filled with whitish grey. Forewing with 2 further dark brown lines in the cell and a third on the discocellular, the hindwing with a similar line in the cell. Two black ocelli with white pupil and yellow iris in cellules 5 and 6 near the distal margin of the hindwing. Somewhat further removed from the distal margin in cellules 2, 3 and 4 three small round white spots with obsolescent dark bordering. The same markings are present on the under surface, only the ground-colour is somewhat lighter. From Guiana and the Amazon. — **lucia** Weym. (Stett. Ztg. 1885, p. 285) (= *astyoche* var. *albomaculata* Stgr.: Exot. Tagf. p. 219, pl. 77, 1887) (42 e) is a form of *astyoche* in which instead of the 2 lower small white spots of the hindwing there is a large white spot close to the distal margin, otherwise it is quite similar to *astyoche*. From Pebas on the Upper Amazon.

P. lena L. (42 e). The forewing on both surfaces resembles *astyoche*, but the hindwing shows in the distal half 4 rows of blue spots mostly with white centres, of which the row next to the distal margin is somewhat obsolescent. Between the 2nd and 3rd rows near the costal margin 2 black eye-spots with white pupils. In the ♀ the basal half of the hindwing is shot with blue. Also the underside of the hindwing is similar to that of *astyoche*, except that the eye-spots are larger and removed more proximad and the proximal part of the distal margin is dark brown. Surinam, Guiana, Amazon, north-eastern part of Rio de Janeiro. — **brasiliensis** Fldr. is an unimportant local form of *lena*, in which the ground-colour of the hindwing is more blue-grey and the bluish white spots are replaced by dirty white ones. From the Rio Negro and the Amazon. — **glaucolena** Stgr. i. l. (42 e) is a local form in which the blue spots of the hindwing are somewhat larger and have no white central dots. Only the spots placed next to the costal margin are somewhat white at the sides. From Mapiri. — **amalia** Weym. (Stett. Zg. 1885, p. 285) (= *leucospila* Stgr.: Exot. p. 220, 1887) (42 e) is a form which HEWITSON figures in the 2nd volume of his Exot. Butterflies as a variety of this species. The bluish white spots of the first and second rows are united in the posterior part of the hindwing into a large white spot, in the anterior part of the wing these 2 rows of spots are absent. The 4th row close to the distal margin consists of round pure white spots, instead of the elongate bluish white ones of typical *lena*. Moreover on the upper surface of the forewing there is a distinct white band in the female. From Pebas on the Upper Amazon.

P. dracontis Hbn. (? = *hyalinus* Gmel.) (43 a) is very similar to *lena* in the scheme of markings, but the shape of the hindwing is different. The distal margin is produced into a strongly projecting angle at the upper median vein. Hence this species forms a transition to the genus *Antirrhoea*. The 3 rows of blue spots on the hindwing are more brightly coloured than in *lena*, the 4th row at the distal margin is absent. From Surinam and the Amazon. — **extincta** Stgr. i. l. A form in which the greater part of the light band on the underside of the forewing is wanting, only the part from the inner margin to the lower median vein being present. On the hindwing the half-band of *dracontis* is divided into 2 parts and the posterior ocellus is extremely small. From Manicoré.

b) Without light band, but with three straight, almost parallel, dark lines on the under surface of both wings.

P. luna F. (= *pallida* Godm. & Salv.) (43 a). Both wings grey-brown, the hindwing somewhat darker in the posterior half, both with 3 fine, brown, almost straight transverse lines, of which the one

- placed next to the base on the hindwing is rather indistinct. At the apex of the hindwing two round black spots, of which the anterior one has a white pupil towards one side, but the other is blind and smaller. On the lighter under surface with fine brown striae the transverse lines are more distinct than above, between the 2nd and 3rd on the forewing there is a fourth, which only extends to the upper median vein. The ocellus of the hindwing is smaller, the black spot is absent. In the marginal area there are 4 white dots on each wing. In the ♂♂ above seen in a certain light there is a light green reflection, in the ♀ the marginal area is darker. Nicaragua, Costa Rica, Panama, Colombia, Guiana. — **heracles** Bdr. (= *rubecula* Godm. & Salv.). A northern form with the same green reflection on the forewing in the ♂, but distinguished by the reddish brown colour of the costal area on the hindwing above. This colour is gradually merged at its edges into the dark brown ground-colour. The dark brown distal margin is 5—6 mm. in breadth. The 2 black ocelli at the apex are placed at the boundary of the two colours and have often white pupils. From Mexico and Guatemala. — **lesbia** Stgr. (43 a) I regard as a southern form of *luna*, which approaches *heracles*. The median patch of the hindwing, however, is more reddish yellow and more distal than the reddish brown patch of *heracles*. The dark brown distal margin is only 1—1½ mm. in breadth and rather sharply defined. Of the 2 round black spots at the apex only the upper one has a white pupil. Under surface as in *luna* and *heracles*. From Bucay in Ecuador and the Rio San Juan in West Colombia.
- rhea**. **P. rhea** F. (43 a) approaches *luna*, having the same markings and the green reflection on the forewing, but the ground-colour is more yellowish brown, the hindwing somewhat darker than the forewing. The former with a row of 5 black ocelli with white pupils, of which the 3 posterior ones are somewhat smaller and the last is often very indistinct. On the under surface the brown lines are as in *luna*, but the eye-spot at the apex of the hindwing is absent, on the other hand the row of dots (2 or 3 on the forewing, 5 on the hindwing) is very distinct. From the Amazon; Rio de Janeiro.
- lamia**. **P. lamia** Sulz. (= *dyndimene* Cr.) (43 a) is similar to *rhea*, the green reflection is likewise present in the ♂ on the forewing, but the hindwing has a steel-blue gloss, which is absent in *rhea*; the 5 black eye-spots are all equally large and distinct, the white dots in them somewhat stronger. From Cayenne, Surinam, Colombia.
- chalybaea**. **P. chalybaea** Godm. was described as similar to *lamia*, but differing from it in that more than the basal half of the hindwing in both sexes is shot with steel-blue, the black rings round the white dots are almost or entirely absent, the distal margin of the hindwing is very broadly darkened and the 2 central lines are indistinct. From Chapada in Brazil.
- hyceta**. **P. hyceta** Hew. (43 b). A beautiful species. The forewing is similar to that of the preceding species in colouring and markings, and also shows the green reflection on the ♂♂ in certain lights, but the hindwing has reddish ochre-yellow ground-colour, only the base and costal margin agreeing with the forewing. Of the 3 brown lines on both wings the middle one on the hindwing forms roughly the indistinct boundary of the two colours. Four, occasionally five, round black spots form a submarginal row, only the anterior one has a white pupil, the 2nd is the largest. Between the 2nd and 3rd is sometimes inserted a fifth spot (as in the ♀-example figured). At the distal margin of the hindwing are placed brown triangles. On the under surface the ground-colour of both wings is yellowish grey, finely mottled with brown, the straight brown lines stand out distinctly, the black spots are much smaller than above, and have here in the ♀♀ white pupils, sometimes also in the ♂♂. From the Upper Amazon, Cuzco in Peru (3000 m.), Bolivia. — **latona** Fldr. is a form of *hyceta*, in which the central area of the hindwing is deep red-yellow and the distal margin blackish, moreover the two posterior black spots are larger and have no white pupils. In the ♀ all the spots are larger and provided with white pupils. The under surface is as in *hyceta*, but the anterior spots of the hindwing are smaller and with white centres. From Bogotá (Colombia). — **ceryce** Hew. (43 b), likewise a form of *hyceta*, in which, however, the central area of the hindwing is red-brown and the black-brown distal margin has a breadth of 8—10 mm. In the latter are placed in the ♂♂ 4, in the ♀♀ 5 black ocelli with white pupils. Moreover, the ground-colour of the forewing is darker than in *hyceta*, hence the dark brown lines stand out less, as is also the case on the hindwing. The ♂ has the same green reflection in the middle of the forewing as *hyceta*, whilst the ♀ bears 3 white dots before the apex of this wing. The under surface is grey-brown, darker in the marginal area, with 3 fairly straight brown lines on both wings, 4 or 5 white dots instead of the eye-spots on the hindwing and some similar dots at the apex of the forewing. A black dot at the base of the forewing and 2 or 3 at that of the hindwing. From Pintue in Ecuador (800—1000 m.), Chanchamayo in Peru, and Bolivia.
- c) With three almost straight, parallel dark lines only on the underside of the hindwing. On the upperside a blue spot on each wing.
- hortona**. **P. hortona** Hew. (43 b). Ground-colour dark black-blue. The blue spot of the forewing is elongate, varying in size, 3—4 mm. broad and 6—12 mm. long, and is placed on the discocellular. That of the

hindwing is much larger, nearly round, 10–13 mm. in diameter, and extends nearly to the costal margin. At the inner margin of the hindwing there is in the ♂♂ a patch of light ochre-yellow, appressed scales 10–12 mm. in length. Under surface yellowish grey, on the forewing with 2 brown lines, contiguous in the middle and diverging anteriorly and posteriorly, and with a short oblique line in the cell, and 3 black dots near it. On the hindwing there are 3 black dots basally to the 3 almost straight parallel transverse lines and before the distal margin a row of 5 similar dots. Amazons and Ecuador. — *hortensia* Fldr. is a *hortensia*, local form which is distinguished by narrower wings, smaller blue spots on the forewing and less rounded spots on the hindwing, which are placed further from the distal margin. From the Rio Negro.

4. Genus: *Antirrhaea* Hbn.

Medium-sized and large butterflies of 65–105 mm. in expanse, mostly dark-coloured, only a few having blue, white or red-yellow markings. The palpi are densely covered with stiff hairs, the antennae thin, thickened towards the end, without distinct club. In most species the veins of the forewing are not swollen, only in *archaea* the costal vein is somewhat thickened and in *hela* distinctly swollen. In the hindwing the costal vein does not arise direct from the base, as in the preceding genera, but on a common short stalk with the subcostal. The precostal also arises at the point of separation of these veins. This is likewise the case in all the following genera of Satyrids. The principal distinguishing character of *Antirrhaea* consists in the scent-organ of the ♂♂, a brush of hairs on the underside of the forewing between median and submedian. This differs in size, shape and position in the individual species, being mostly basally pointed, anteriorly and distally rounded. The hairs are glossy, 3–4 mm. long and have the tips bent towards one another. In most species the scent-organ stands out before the costal margin of the hindwing, in single cases, e. g. in *geryon*, it even remains hidden if the forewing is much brought forward in setting. In consequence of this brush cellule 1b is very broad between median and submedian, up to 12 mm., and the submedian and inner margin are semicircularly curved posteriorly. In the female the scent-organ is absent and the submedian and inner margin of the forewing are straight. The genus is distributed from Guatemala to South Brazil through Central and South America.

a) In the ♂♂ the subcostal and upper radial of the hindwing arise near together but separate out of the anterior margin of the cell, converge somewhat for a short distance and then diverge strongly. Hence the upper discocellular is short and only reaches $\frac{1}{6}$ to $\frac{1}{4}$ the length of the middle discocellular. The inner margin of the forewing in the ♂♂ deviates 2–4 mm. from the rectilinear. In the ♀♀ subcostal and upper radial diverge from the point of origin. Apex of the forewing rounded. Hindwing with obtuse angle at the middle or upper median (*Anchiphlebia* Btlr.).

A. *archaea* Hbn. (= *girondius* Godt.) (43 d). The genus *Antirrhaea* was founded on this species. The ♀ *archaea* is very similar to the figured ♂, except that it has the inner margin of the forewing straight. On the under surface, which is striated with yellow-brown and white-streaked, there are only small white dots instead of the eye-spots. The scent-apparatus of the ♂♂ consists of a semicircle of yellow-brown, dense hair, 3–4 mm. long, placed close above the submedian, the hairs directed anteriorly and with the points bent towards one another. The length of this brush is 10–11 mm. Opposite to the scent-organ on the upperside of the forewing there is an oval spot of flattened scales, which is the same colour as the ground, and hence may easily be overlooked. According to WILH. MÜLLER, who has obtained the young larva from the egg, but was not able to rear it, as it would not touch the grasses, etc., placed before it, the egg is semicircular, the surface divided by raised ridges into regular, hexagonal areas. The body of the larva when first hatched is 3.8 mm. long, the tail-fork with the terminal bristle 2.7 mm., thus proportionately very long. Head large, black, rugose, covered with bristles, above with a bipartite process. Body thinner than the head, white with red-brown prothorax and brownish or reddish dorsal and lateral lines. The tail-fork is black. Widely distributed in Brazil: Bahia, Espirito Santo, Santa Catharina, Rio Janeiro.

A. *taygetina* Btlr. Similar to the preceding species, but somewhat smaller, with only 2 smaller *taygetina*. ocelli on the forewing, whose pupils are shifted distad and which are placed in the ochre-yellow band. Sometimes there is further a third very small ocellus at the costal margin. Ground-colour brown-grey; hindwing in the distal half dark brown with 2 to 4 light blue or light violet spots. Beneath light ochre-yellow, sometimes rose-reddish with 2 brown median lines, diverging at the costa of the forewing, of which the outer one is distally margined with white, with an indistinct, undulate, brown submarginal line and 5 white dots on both wings in an angular row. From Massauary, Teffé, Coary and Pebas on the Amazon. Rare.

A. *hela* Fldr. (43 b). Upper surface dark brown. The forewing has before the apex 2 white spots *hela*. with blue rings and in the posterior half of the wing 3 blue spots, of which the first 2 have white pupils. All 5 spots are placed in a row. In the neighbourhood of these spots the dark brown ground-colour has a blue reflection. Hindwing without markings. The under surface is grey-brown, finely striated with dark

brown, and has a slight violet reflection. The scent-organ of this species is elliptical in form, with one side pointed. This proximal point is placed in the angle of the submedian. The scent-organ is 13 mm. long and 6 mm. broad. The rather stiff hairs are placed close together at the margin and radiate inwards, so that their tips meet over the middle of the ellipse. Only the basal half of the anterior margin of the ellipse is free from these hairs. The hairs themselves are 4 mm. long, light yellowish brown, darker brown at the tip. Opposite to the scent-organ is placed on the upperside of the forewing a wedge-shaped patch of flattened scales. From the Upper Amazon, Ecuador and Peru. Rare.

ornata. **A. ornata** Btlr. Expanse 75 mm., thus somewhat larger than *hela*. Violet-brown. Forewing with a row of 4 large, connected, round, black ocelli with rather large white pupils and ochre-coloured bordering. Hindwing with a curved continuous row of 5 large oval blue ocelli which have fine white pupils and are placed in thick black rings. This row is likewise surrounded with ochre-yellow. The under surface is ochre-yellow, finely striated with brown. The obtusely projecting angle of the hindwing is placed on the upper median vein. Only the ♀ is known. Cayenne. Rare.

b) Subcostal and upper radial of the hindwing in both sexes arise far apart and divaricate. Upper discocellular half the length of the middle one. Inner margin of the forewing in the ♂♂ only deviating 2—3 mm. from the rectilinear, in the ♀♀ quite straight. Apex of the forewing rectangular. Hindwing running out to a point on the upper median, obtusely angled on the middle and lower median.

geryon. **A. geryon** Fldr. (43 c). Expanse 85 mm. The distal margin of the forewing is almost straight, the greatest bend of the inner margin in the ♂ lies somewhat before the middle and only attains 2 mm., in the ♀ the inner margin of the forewing is straight. Ground-colour brown. Three large black eye-spots measuring 5—6 mm., with white pupils 1 mm. large and brownish ochre-yellow bordering, are placed on each wing, those of the hindwing in a curved row. In the ♀ the eye-spots measure 8—9 mm. The under surface is brownish ochre-yellow, everywhere finely striated with brown, with brown median band on both wings, two brown half-bands in the cell of the forewing, a similar half-band before the median band of the hindwing and brown distal margin. In place of the eye-spots the forewing has three white dots and the hindwing two white dots and a black one. There is further a black dot at the base of the hindwing. The scent-organ is only 10 mm. long, is placed 4 mm. from the base and consists of a row of yellow-brown hairs on the submedian, 3 mm. in length, with dark brown tips. It does not quite reach the middle of the inner margin and is consequently concealed by the hindwing even when the fore wing is set very high. Opposite to the scent-organ is placed here also on the upperside of the forewing a pear-shaped patch of flattened scales, which is 7 mm. long and 5 mm. broad, but may easily be overlooked. Moreover, a small, bare, scaleless patch at the costal margin of the hindwing may be mentioned as the so-called friction-patch. — The earlier stages of this species have been observed by FASSL in Colombia: The egg is hemispherical, white, not shiny; the base somewhat incised. Of the same size as that of *Harpyia vinula*. The larva looks almost like that of *Bomb. neustria*, with similar variegated and well-defined markings, but with diverging dorsal lines. The very large head is yellowish green, the body posteriorly narrowed and terminating in a long forked tail. The pupa is somewhat stouter, otherwise similar to a large *Pyram. atalanta*-pupa. Some are green and some brown, the variation being independent of the sex. Food-plant of the larva a species of palm. Colombian West Cordillera, or more exactly: Carmen 1800 m., valley of the Rio Agua, 1800 m., from November to January, St. Antonio, 2000 m., in April in dense, dark, primeval forests at the passes. Huamboya in Ecuador (1200—2200 m.).

geryonides. **A. geryonides** Weym. (43 c). Similar to the preceding species, but the ground-colour is dark olive-brown, the distal half of the forewing and the hindwing especially dark. The eye-spots are larger, in the ♂ measuring on the forewing 8—9 mm. in diameter, on the hindwing 5—6 mm. Their pupils are likewise larger (2—2½ mm.) and bluish white. The red-yellow bordering of the ocelli in *geryon* is here entirely absent. The under surface is likewise darker than in *geryon*. The white dots on the forewing are somewhat larger and instead of the black dot between the middle and lower median vein of the hindwing there is a small black ring with white pupil. One of the principal differences is found in the scent-organ. This is much larger than in *geryon*, covering a wedge-shaped, proximally pointed, distally rounded area of 18 mm. in length, its greatest width being 6 mm. Hence even when the wing is not set very high the distal part of the scent-organ lies free and only the proximal ¾ are covered by the hindwing. The hairs are arranged in two longitudinal rows and in the rounded distal part are placed close together, bending towards one another with the tips touching. The patch of appressed scales placed opposite to the scent-organ on the upperside of the forewing is of the same shape as in *geryon* and is distinctly visible. The ♀ attains an expanse of up to 90 mm. The ocelli on the wings are even larger than in the ♂, measuring 10—12 mm. on the forewing, 7—10 mm. on the hindwing. The bluish white pupils reach 2—3 mm. in size. On the hindwing there is, moreover, a 4th smaller ocellus, which occupies a different position in the two ♀♀ before me. In the Ecuador example it is placed between the lower radial and the upper median vein, but in the Colombian example near the costal margin. Moreover, the ground-colour in the latter is

darker than in the former, yet both are easily distinguished from *geryon* by the large bluish white pupils. Ecuador (Sarayaku and Makas); Colombia (Rio Toche at the Quindiu, 2200 m. in September, and Cañon del Tolima, 1700 m., in December).

c) Apex of the forewing as if truncate, the distal margin obtusely angled at the upper radial. The inner margin of the forewing in the ♂♂ deviating 4—6 mm. from the rectilinear. Otherwise as in b.

A. phasiane Btlr. (43 c). Size about the same as in the preceding species, pattern also similar, but *phasiane*, the apex of the forewing is as if truncate, so that the distal margin forms an obtuse angle below the apex. The inner margin of the forewing in the ♂ deviates 4 mm. from the rectilinear; ground-colour reddish brown. Forewing with 3 large, white-centred ocelli, of which the anterior one has 2 pupils (one near to the edge). Hindwing with 4 round black spots in place of the ocelli. On both wings the ocelli and spots are surrounded by brownish red-yellow. The under surface is almost like that of *geryon*, but the ground-colour is reddish brown, the distal margin is not darker and before it stand out distinctly on each wing 4 white spots, which correspond to the pupils and spots of the upper surface. The sexes do not differ in colouring and markings. Venezuela (Maracaibo); Peru (Chanchamayo).

A. pterocopha Godm. & Salv. The shape of the wings and the scheme of markings on the underside *pterocopha*, is very similar to that of *phasiane*. But the upper surface is widely different and much more brightly and finely coloured. Moreover, the two sexes differ considerably above in the markings. ♂ 95 mm. in expanse. The inner margin of the forewing is more strongly excurved than in *phasiane*, deviating 6 mm. from the rectilinear. Forewing above dark brown with 3 grey dots in cellules 3, 5 and 6, and with an oval patch of flattened scales close above the submedian, which is widely curved posteriorly. Hindwing with a large, orange-yellow, horse-shoe-shaped spot at the apex, a large blue spot, 20 mm. in length, at the anal angle, which occupies almost the entire distal half of the inner margin as far as the lower median vein, and with 2 smaller blue spots in cellules 2 and 3, of which the latter is a mere dot. The under surface is similar to that of *geryon* and *phasiane*, yellowish brown, finely strigulated with dark brown, with brown, somewhat curved median band on both wings, 2 brown half-bands on the forewing in the cell and a brown basal band on the forewing, which is posteriorly divided into several parts. All these bands are accompanied at the distal side by lilac-coloured stripes, which fade off into the ground-colour. In the marginal area 3 white dots on each wing. ♀ 100 mm. in expanse. The inner margin of the forewing is not straight as in the other species of *Antirrhaea*, but somewhat excurved, yet the curvature only amounts to 3 mm., thus only half that of the ♂. Ground-colour dark brown; forewing behind the middle with a lilac transverse band, which, gradually narrowing, extends from the costal to the inner margin, is interrupted in cellule 4 and on which white dots are placed in cellules 2, 3, 5 and 6. The hindwing has the anterior half of the distal margin red-yellow for a breadth of 11—12 mm. with a brown submarginal stripe. From the upper median vein to the anal angle the red-yellow distal margin is only 4 mm. in breadth. In cellule 3 there is a larger, in cellule 5 a smaller lilac spot, the former on a brown, the latter on a red-yellow ground, both with a white centre. Costa Rica, Panama (Santa Fé, Calobre). Very rare.

d) Apex of the forewing rounded, inner margin of the forewing in the ♂♂ so strongly excurved that it deviates 7 to 10 mm. from the rectilinear. Hindwing at the upper median vein produced into a point, at the lower obtusely angled.

A. philoctetes L. (= *morna* F.) (43 c). Forewing unicolorous brown with a white dot before the apex. *philoctetes*, The patch of flattened scales does not differ from the ground-colour, is large, oval, 12 mm. long and 7 mm. broad and stands out rather distinctly. Hindwing brown, at the costal margin lighter, distally and posteriorly darker, a blue spot at the anal angle, followed by 2 large oval spots of the same colour, which have a thick black centre, then a blue dot in cellule 4 and two white dots in cellules 5 and 6. On the under surface the forewing is grey-brown with 2 straight brown transverse lines in the cell and a straight white stripe behind the middle, which is only bent on vein 2 and terminates before the scent-organ. On both sides of this stripe the ground-colour is somewhat darker. The scent-organ is circular, the hairs placed at the edge of the circle are directed towards its centre and the tips touch one another. Even when the wings are not set very far forward the anterior part of it remains free. Through the middle of the hindwing runs a dark brown band 15 mm. in breadth from the costal to the inner margin, in the marginal area in cellules 2 and 3 there are two black spots margined with light brown and in each of cellules 4, 5 and 6 a white dot. A brown undulate line before the distal margin. Guiana, Lower Amazon, Tapajos. — **scoparia** Btlr. only differs from *philoctetes* in that the forewing has above a lighter brown *scoparia*, ground-colour, the markings of the underside showing through distinctly, and that on the hindwing basally to the blue macular band of *philoctetes* there is a second band consisting of 4 spots. On the underside of the hindwing the 2 dark spots in the marginal area are nearly joined to the brown median band. Described from an example from the KADEN collection, now in coll. GODMAN, of which the locality is not known.

- philaretetes*. **A. philaretetes** Fldr. (43 d). The forewing is quite similar on both sides to that of *philoctetes* and the shape of the scent-apparatus is exactly the same, but the hindwing is very different. It has in the ♂ 2 round blue spots of 4 mm. diameter in cellules 2 and 3 and a dot of the same colour in cellule 5, in which is placed a fine white pupil. Sometimes there is a 4th spot between them. In the ♀ this is probably always the case. On the under surface the white band of the forewing is continued fairly straight across the hindwing, extending close to the inner margin near the anal angle. On it is placed in cellule 2 a small round black spot and near it at the distal side in cellule 3 a similar, larger spot surrounded with white. At the base of the hindwing 3 small brown spots. From Bogotá in Colombia and Pebas on the Upper Amazon. — **philopoemen** Fldr. Larger than *philaretetes*, the ♀ attaining 100 mm. in expanse. Ground-colour brown, on the forewing behind the middle a straight white band, before the apex 2 white dots, a brown submarginal line, behind which the margin is reddish. The hindwing in the distal half blackish with violet reflection and 6 oval, glossy blue spots between the lower median and the costal margin, with reddish, sometimes white-spotted crescents at the distal margin. The under surface is similar to that of *philaretetes*, but the basal half of the forewing is considerably lighter, the white band is broader on both wings, but on the hindwing it reaches only the submedian, not the inner margin. From Villeta, Cordillera of Bogotá. 1500 m. Rare. — **avernus** Hpff. (43 d). Similar to *philopoemen*, but somewhat smaller: ♂ 78—85 mm., ♀ 90 mm. in expanse. The inner margin of the forewing in the ♂ is more strongly curved distally. The deviation from the rectilinear amounts to 10 mm. Forewing in the ♂ unicolorous brown with only one white dot before the apex, in the ♀ in addition behind the middle with a narrow, dull white transverse stripe, interrupted at the veins. The hindwing has in both sexes 3 large, bright blue or violet-blue spots between the submedian and the 3 median veins, which almost entirely fill up the width of the cellules and are 8—11 mm. in length. The largest is nearest to the inner margin. In the ♀ there are further in the anterior half of the wing 2 or 3 small blue spots, in the ♂ only one between the radials, which has a white central dot. The under surface is quite similar to that of *philaretetes*, and likewise the scent-organ. This form may be distinguished at once from its allies by the large blue spot between the submedian and the lower median vein on the upperside of the hindwing. Peru (Chanchamayo), Ecuador (Macas and Sarayacu).
- miltiades*. **A. miltiades** F. (= casta *Bates*, *lindigi* Fldr.) (43 d). 80—90 mm. span. Forewing in the ♂ brown with 1 or 2 white dots before the apex. These are somewhat larger in the ♀, which bears moreover a narrow white band running from the costal to the inner margin. Hindwing brown, in the ♂ with an irregular white spot between the median veins, which is posteriorly prolonged into a point. In the ♀ this spot is falcate and there are several small spots before and behind it, and on the distal margin white crescents are placed between the veins. The under surface is quite similar to that of the preceding species, but the white band between the median veins on the hindwing is somewhat widened, so that a white spot is formed here, which is similar to that on the upper surface. In this are placed 2 round black spots, one of which is sometimes a mere dot. At the base three brown dots. The scent-organ as in the preceding species. From Guatemala, Nicaragua, Costa Rica, Panama, Colombia (Muzo). — **murena** Stgr. is a local form of *miltiades*, distinguished by its smaller size (70 mm. expanse) and by having the white spot on the hindwing divided into two parts by the central median vein, so that only the white bordering of the black spot placed beside it remains. Moreover, the white bands of the underside show through somewhat above, the base of the hindwing is light brown above and at its apex there are 2 grey dots. On the under surface the distal part of the basal area is lighter brown, the white band is a trifle broader on the forewing, but the widening of this band between the median veins on the hindwing is almost entirely absent, whilst the black spot at this place is much enlarged. From Massauary on the Rio Maues (Lower Amazon). — **tomasia** Btlr. (43 d). Expanse 80—95 mm., is a form similar to the preceding two, in which the white spot on the hindwing between the median veins is entirely suppressed, but instead there is sometimes a small white dot in cellule 5. The costal margin of the hindwing is light grey, as in all the allied forms, and before the apex of the forewing are placed 2 white dots. On the under surface the white stripe on the forewing is much narrower than in *miltiades*, on the hindwing it is entirely absent as far as the upper median vein. Then follows in cellule 3 a white spot measuring 3 mm., which is almost entirely filled up by a round black spot. Between the central median vein and the inner margin the white stripe is present, but quite narrow and interrupted several times. The median area of the hindwing beneath is darker than the marginal and basal areas. From Panama (Chiriqui, Bugaba, Veragua).

Note. Whether *Antirrhaea bifasciatus* Gmelin cited by KIRBY in his Catalogue really belongs to the genus *Antirrhaea* or even to the American fauna, appears questionable, as it cannot be recognized from the description and the locality was not known to the author. The species is only designated as exotic, and hence may just as well belong to the Indian or African fauna. The original of the description was in the Museum Leskeanum, and no further example is known. According to this description the wings are angled, brown above, and the under surface is grey with 2 common brown stripes and a broad grey common band, posteriorly dentate, in which on the forewing on a brown ground are placed 5, on the hindwing 6 ocelli with white pupils and yellow iris. Of the eye-spots on the forewing the middle ones are larger. Habitat extra-European (GMELIN, Syst. Nat.).

5. Genus: **Sinarista** Weym.

The distinguishing characters of this genus are the absence in the male of the tuft of hairs between median and submedian on the under surface of the forewing and the form of the submedian of the same wing, which is only elbowed at the base, otherwise almost rectilinear, and only reaches the distal margin in the rounded inner angle, whilst in *Antirrhaea* it describes a more or less extended curve and runs into the inner margin far before the inner angle. The inner margin of this wing is likewise little curved posteriorly, the distal margin forms a straight line and the apex a right angle. The distal margin of the hindwing is produced into a distally directed point at the upper median vein, at the other veins it is only undulate. The single species of this genus has a very dusky appearance and is quite a recent discovery.

S. adoptiva Weym. (44 a). Expanse 82 mm. The shape of the wings is that of *A. geryon* Fldr.-♂, *adoptiva*, but the ground-colour even darker brown than in *A. geryonides* Weym., almost black-brown and uniformly dark all over. On the forewing are placed in cellules 2, 3 and 5 three black eye-spots with white pupils, the upper one measuring 5 mm., the two lower only 3 mm. in diameter; on the hindwing in the same cellules three black spots without pupils, the anterior and posterior spots round, 5 mm. in diameter, the middle one oval and somewhat larger (6 to 8 mm.). These spots stand out but little from the dark ground-colour, sometimes the two posterior ones have fine, scarcely visible, white-grey pupils. The distal margin of both wings is finely bordered with red-brown, the tips of the fringes white. The under surface is dark brown covered with many fine bluish white dots, which mostly consist of single scales and at the costal margin of the forewing are condensed into a few white spots. Distally this dusting disappears, so that the margin appears unicolorous brown. In place of the eye-spots there are on the upper surface of the forewing three ochre-yellow dots, the anterior one somewhat larger, and on the hindwing in place of the middle spot a small bluish white spot. Discovered by FASSL in the Colombian West Cordillera. The ♀ of this species is not yet known.

6. Genus: **Caerois** Hbn.

This genus also is distinguished by the possession in the male of a scent-organ at the inner margin of the forewing beneath, moreover on the upperside of the hindwing in the middle of the submedian there is a hair-tuft which consists of a row of brown hairs. The male forelegs are much reduced, the palpi rather long, with thin, curved middle joint, densely scaled anteriorly. The veins are not swollen. In the ♂ only one subcostal vein arises before the end of the cell on the forewing. The hindwing runs out into a tail at the upper median vein, at the submedian it shows an obtuse angle. The other veins do not project on the distal margin. Large butterflies of 80—90 mm. expanse, whose habitat is Central and northern South America.

C. chorinaeus F. (= *arcesilaus* Sulz.) (44 a). The costal margin of the forewing is strongly curved *chorinaeus*, posteriorly at the apex, the apex itself broadly rounded, the distal margin deeply incised below the apex, the inner angle rounded, the inner margin somewhat projecting. Ground-colour brown with broad red-yellow oblique band, without eye-spots, only with a white dot before the apex. The distal margin of the hindwing has a red-yellow border 2—4 mm. in breadth, the brown point at the upper median vein projects horizontally distad. The brownish ochre-yellow under surface is finely striated with dark brown, with three brown, almost straight and parallel transverse lines on the forewing, of which the middle one only reaches to the median, the hindwing with two lines running in the same direction, which extend from the costal margin to below the middle of the wing, and a third straight line, which connects the apex with the anal angle. The scent-organ of the ♂♂ is placed close to the inner angle on the upper surface of the forewing, so that it is not covered by the hindwing; it is 12 mm. long, 8 mm. on the inner and 4 on the distal margin. The anteriorly directed hairs of this scent-organ are 3 mm. long, and dark brown. In addition there is a small brown hair-tuft on the upperside of the hindwing near the inner margin. — STOLL has figured the larva and pupa of this species in the supplement to CRAMER's exotic work, pl. VI, fig. 1 and 1a. The larva has at the posterior end of the body two points of extraordinary length. The body of the larva is 60 mm. long, the points measure 30 mm., thus reaching half the length of the body; they stand straight out posteriorly and are covered with small, fine hairs, whilst the larva itself is naked. The head is proportionately large, red-brown with yellow margins and stripes, the mouth-parts black. The body bears no protuberances, is 5 mm. thick anteriorly and posteriorly and 7—8 mm. in the middle, and very gaily marked. Ground-colour reddish violet, venter and legs yellow; on the dorsum a yellow longitudinal stripe, which is broad in the middle of each segment but narrow in the incisions, so that elongated quadrangles are formed, on which are placed darker yellow and blackish markings and which at each side of the dorsum are bordered by several red-brown and yellow undulate lines. The pupa is suspended, about 22 mm. long, 9 mm. thick, with the abdomen much bent. It shows no sharp-edged

protuberances, but only a flat rounded elevation on the middle of the dorsum. Wing-cases and ventral side are unicolorous light brownish grey, the dorsum on the contrary has a yellowish brown colour and is densely covered with many small black transverse streaks and spots. The food-plant of the larva is the sugar-cane. The butterfly appears from the pupa in 11 days. It occurs in Guiana and the whole Amazon region.

gerdrudtus. **C. gerdrudtus** F. (= *gertrudtus* Godm. & Salv., *vespertilio* Thieme) (44 a). The costal margin of the forewing is not bent so far back as in the preceding species and runs out into a rather sharply produced apex, yet the distal margin is only a little incurved. Ground-colour brown with dark violet reflection from the base to beyond the middle of the wing. Before the apex of the forewing a large black eye-spot with white pupil, proximally bordered by a red-yellow crescent, below this a red-yellow spot. In the figured ♀, somewhat nearer to the inner margin, is placed a second smaller eye-spot of the same colour with complete red-yellow ring. This second eye-spot is absent in the ♂. On the hindwing the dark violet reflection is extended nearly to the distal margin. The pattern of the under surface is very similar to that of *chorinaeus*. The brown transverse stripes proximally shade off imperceptibly into the ground-colour, distally they have lighter borders. The scent-organ is not placed at the inner angle as in the preceding species, but much further basally at the inner margin. It begins 8 mm. from the base, has a length of 18—19 mm. and terminates 5 mm. before the inner angle. It consists only of a row of stiff, closely approximated hairs, which are directed anteriorly, 6—7 mm. long, somewhat crimped at the tip and of yellowish brown colour. The submedian is covered by these hairs and terminates at the end of the scent-organ in the inner margin, which is much excurved. Also in this species there is a small, short hair-tuft at the middle of the submedian near the inner margin on the upperside of the hindwing. From Panama (Lion Hill), Costa Rica (Santa Clara Valley), Ecuador (Balzabamba), Colombia. — As BUTLER has compared the figure of this species (which is one of the unpublished figures of JONES, used by FABRICIUS in describing the species) with the example in SALVIN'S collection and found them to agree (cf. BUTLER, Catal. of Diurnal Lepid. described by FABRICIUS, p. 9), I have no hesitation in retaining the name *gerdrudtus* Fabr.

7. Genus: **Tisiphone** Hbn.

Forewing with rounded apex, the distal margin slightly undulate, on the hindwing more strongly undulate. The lower discocellular on both wings is at least twice as long as the middle and upper discocellulars. The palpi are densely scaled, the antennae with indistinct and weakly thickened club. The claws of the middle and hindlegs are bipartite. Medium-sized and rather large brown butterflies with white macular band on the forewing and a row of eye-spots on the underside of the hindwing. The range of distribution extends from Mexico to South Brazil.

hercyna. **T. hercyna** Hbn. (= *anosia* Godt.) (44 b). Brown, darker in the distal half of the wing, with a row of large white spots through the middle and a small spot before the apex of the forewing, as well as some similar spots at the margin of the hindwing. Costal, median and submedian of the forewing are somewhat thickened at the base. On the under surface the ground-colour is somewhat lighter, brownish grey, the white spots as above, the hindwing with several dark brown, strongly dentate lines, behind the middle with a curved row of 6 large, round, white-centred ocelli, of which the 2 anterior ones have black, the 3rd, 4th and 5th grey-brown iris, but the last is doubly pupilled with black. All the ocelli are surrounded by a yellowish grey ring and outside that by a dark brown one. The apex of the forewing is beneath likewise brownish grey with an eye-spot which is coloured like the anterior one on the hindwing. Habitat: South Brazil (province of Santa Catharina, province of Parana, Rio de Janeiro, in certain years in great abundance), Mexico.

maculata. **T. maculata** Hpff. (44 b). Similar to the preceding species, but considerably smaller, the ground-colour somewhat lighter, the white spots on the forewing are much smaller above and beneath, are isolated, and form a more outcurved series. On the hindwing they are entirely absent. The under surface of the hindwing is much lighter than in *hercyna*, otherwise with similar markings. Habitat: Mexico, Guatemala, Nicaragua, Costa Rica, Panama, Colombia, Venezuela, Bolivia, South Brazil (Rio Grande do Sul).

Note. *Tisiphone lyssa*, described by BURMEISTER, is = *Pedaliodes* (*Pronophila*) *porina* Hew.

8. Genus: **Enodia** Hbn.

Butterflies somewhat below medium size. The costal vein of the forewing is not strongly, but yet visibly, swollen at the base, the upper discocellular is very short, the middle one less than half the length of the lower. In the hindwing the costal vein does not reach the apex. The distal margin on the forewing is weakly undulate and below the middle somewhat incurved, that of the hindwing being more strongly undulate with an obtusely projecting tooth at the upper median. The antennae are light

and dark ringed, with dark club, which is not abruptly but still distinctly thickened, and light tip. Palpi long and thin, densely haired anteriorly. Eyes hairy. Forelegs in both sexes much aborted. The genus consists of two North American species, one of which was for a long time regarded as a variety of the other, until SKINNER described it as a separate species. The other, the well-known *portlandia*, was referred by WESTWOOD to the genus *Debis* (= *Lethe* Hbn.), by KIRBY with? to the genus *Euptychia*. DYAR in his catalogue introduces HÜENER's name *Enodia* for it. The neuration of the butterflies agrees with the Indian genus *Lethe*, but the shape of the larva differs in that the head in *Lethe* bears one horn, in *Enodia* two.

E. portlandia F. (= *andromacha* Hbn.) (44 b). Expanse 48—51 mm. The black spots of the upper *portlandia* surface, which are here non-pupilled, with brownish yellow borders, have beneath mostly white pupils and a dark brown second ring as border; also their number is increased by one, a small double eye-spot being present at the anal angle. In the basal area on both wings a somewhat curved brown line, a second strongly dentate brown line through the middle of the wings, a narrow brown submarginal band and two fine brown marginal lines, between which the margin is filled up with ochre-yellow. — The larva is slender, narrowing to a point from the middle to the anus, green, with a red dorsal and a dark green lateral line. The head is bipartite, each part bears a short conical horn; the last abdominal segment with two posteriorly directed points. On grasses. The pupa concave on the dorsum, convex on the ventral side, with an obtuse elevation on the thorax, light green. The butterfly is distributed in the United States from the east coast to the Rocky Mountains and from Maine in the north to the Gulf of Mexico in the south.

E. creola Skinner. Similar to the preceding, but larger, ♂ and ♀ 57 mm. expanse. Forewing in the ♂ *creola* more elongated, at the costal margin more convex, at the distal margin more concave. Ground-colour darker grey-brown, the black spots on the forewing not margined with brown-yellow, at both sides of the veins on the forewing are placed long cottony dark brown spots, which are proximally connected, distally pointed. On the hindwing the black spots are all of the same size. In the ♀ the brown-yellow bordering of the black spots is broader than in *portlandia*. Occurs along the Gulf of Florida to Mexico. Rare. As I do not know *creola* in nature, I leave the question undecided whether it is a good species or only a local form of *portlandia*.

9. Genus: **Taygetis** Hbn.

This genus consists of large and medium-sized butterflies, and also some below medium size. The largest species measure 95—100 mm, the smallest 48—50 mm. The ocelli are naked; the palpi with strong, bristly hairs. Antennae thin with feebly thickened club. The costal and median veins of the forewing are swollen at the base. Two subcostal veins on the forewing arise before the end of the cell and two beyond it. The upper discocellular is rather short, much shorter than the middle discocellular, this and the lower one are of equal length. In the hindwing the upper discocellular is almost as long as the middle, the lower on the contrary mostly somewhat longer. The forewing is either smooth-margined, with the apex either rounded or produced, or the apex appears truncate, an obtuse angle being formed at the upper radial. The hindwing is more or less strongly dentate, in many species the dentition extends over the whole distal margin, in others only on the posterior part. Mostly the most strongly projecting tooth is placed on median 2, but in single species on median 3. With but few exceptions the upper surface is unicolorous brown. The few known larvae live on species of bamboo. The range of distribution extends over the whole of tropical America, northwards to Mexico and southwards to South Brazil.

T. mermeria Cr. (44 c). The largest species of the genus and very variable in the shape of the *mermeria* wings and the pattern of the under surface. The name-typical form has the apex of the forewing rectangular, sometimes somewhat rounded. The distal margin of the forewing is smooth, that of the hindwing undulate with blunt angles. Upper surface unicolorous olive-brown. Fringes sometimes olive-brown, sometimes brownish white. The under surface is very variable, mostly it is grey-brown with a narrow, straight, whitish median band through both wings. Beyond this a row of 5—6 dark ocelli on each wing, of which, however, often only the white pupils are visible. Sometimes also the lighter band is wanting, especially on the forewing, or it is only indicated by a lighter shading, before which a broad dark brown median band runs through both wings. The species has a wide distribution and is locally not rare. Mexico, Guatemala, Honduras, Nicaragua, Costa Rica, Ecuador, Peru, Amazons, Bolivia, British Guiana, Surinam, Brazil. The butterfly flies in the lowlands in the shadow of the woods near the ground and is difficult to distinguish from the dry, fallen leaves on which it is fond of resting. — **cramerii** (Stgr. i. l.) form. nov. (44 c) is a form of *mermeria* *cramerii*. in which the underside of both wings is for the most part reddish ochre-yellow and some of the eye-spots on the forewing are much larger and likewise ochre-yellow; sometimes they are so on the hindwing also. From Mexico and South Brazil. — **tenebrosus** Blanch. (44 c), likewise a form of *mermeria*, in which the forewing is *tenebrosus* produced at the costal margin into a fine point several millimeters in length and the eye-spots on the under surface of the forewing are mostly only small. The hindwing has beneath before the middle a light brownish

yellow or light brownish grey band of 10 mm in breadth, sprinkled with dark brown dots. This form occurs in Mexico, in Honduras and other countries of Central America, on the Amazon (Ega), in Ecuador, Surinam and South Brazil (Blumenau). — *excavata* Btlr. (44 c), a further form of *mermeria*, is distinguished by having the posterior part of the hindwing rather more deeply excised at the distal margin between veins 1 b and 3. The forewing is likewise produced into a long point at the costal margin. From Honduras and Colombia¹⁾.

armillata. **T. armillata** Btlr. is intermediate between *mermeria* and *ypthima*. Somewhat smaller than the former. Expanse 90—95 mm. The forewing runs out into a point, which is not so elongated as in *tenebrosus* and *excavata*. The hindwing is produced into sharp teeth at veins 1 b to 4. Upper surface olive-brown, the margin somewhat darker, the ciliae lighter. The principal difference from *mermeria* lies in the position of the median band on the underside of the hindwing. This band is not straight as in *mermeria*, but curved and running parallel with the distal margin. The eye-spots on both wings are much smaller and those of the forewing are placed in a nearly straight row. From Colombia, Ecuador, Bolivia. — *jimna* Btlr. (44 d) is a form of *armillata*, which only differs in the lighter colour of the under surface and in the less angled, more prominent transverse band. From Panama, Thauropolis.

larva. **T. larva** Fldr. (46 a). Somewhat smaller than *armillata* (80—85 mm expanse). Upper surface unicolourous dark olive-brown, the apex of the forewing somewhat produced. The teeth on the hindwing are somewhat less prominent than in *armillata*. The under surface dusted with steely black-grey, especially the hindwing, which is slightly glossy. The transverse bands are very narrow, but quite as much curved as in *armillata*. From Colombia (Bogotá) and Paraguay. The figure is taken from FELDER's type in the Tring Museum.

ypthima. **T. ypthima** Hbn. (= *chelys* Burm.) (44 d). Forewing with pointed apex, below this the distal margin somewhat incurved. Hindwing with pointed teeth on veins 1 b to 4. Upper surface olive-brown, with dark brown border about 3 mm in breadth. Cilia yellowish grey. The under surface is very variable, in the typical form brownish yellow, finely marbled with brown, on the forewing with 2 lilac-coloured transverse bands, between and behind which the ground-colour often becomes dark brown. On the hindwing two darker, somewhat curved dentate transverse bands and a row of whitish dots, which are surrounded by brown rings. Of these the one which is placed in cellule 2 often stands out as a distinct white spot. Modifications occur of the most varied kinds. The transverse lines become broader, are united into brown spots, and these again into brown longitudinal stripes. Distributed in South Brazil, province of Rio de Janeiro (Petropolis), province of St. Catharina (Joinville, Blumenau), province of Rio Grande do Sul (Porto Alegre), Paraguay. — *ophelia* Btlr. (44 d) is a form of *ypthima* with almost unicolorous, brownish ochre-yellow under surface to the hindwing, with somewhat lighter but indistinct median band and small black dots in yellow rings. From Joinville. — *xantippe*. **xantippe** Btlr. (44 d) has the under surface of the hindwing almost entirely brown with a large reddish yellow area at the apex and a spot of the same colour in the middle. From Blumenau. — *semibrunnea* form. nov. (44 d) is a further form of *ypthima* with yellowish grey, brown-dusted hindwing, which has an abbreviated brown basal band and a brown median band extending from the costal to the inner margin. Moreover, the whole distal margin is broadly dark brown nearly to this band, so that between the two there only remains a narrow stripe of the ground-colour, which is interrupted in places. From Blumenau. — The egg and the first 4 stages of the larva of true *ypthima* were described by MÜLLER. The egg, which is laid by the butterfly on the underside of the bamboo leaves, is globular, divided by low ridges into hexagonal areas. The larva in the first stage is 5—8 mm. long. Head light brown, rugose, with 2 horns divided at the tip and 3 conical elevations at each side, each of which is provided with a stiff, clavate, bristle. The horns are whitish at the base, blackish brown at the tip. The body is much narrower than the head, whitish green, the middle segments somewhat thickened, covered with isolated, short, finely clubbed bristly hairs. The anal tail-fork is short. In the second stage the whole head is covered with bristle-bearing tubercles, anteriorly there are 2 brown parallel curved marks, of which the proximal one disappears in the later moults; moreover, on the body there are a white dorsal line and one, later two white lateral stripes. In the 3rd and 4th stages the lateral points on the head become gradually shorter, whilst the upper points of the horns remain. In the 4th stage the head is pale grey, margined with brown. Between the horns is placed a black-brown spot, which is narrowed posteriorly and passes into the dark grey dorsal stripe. This is alternately narrow and wide, and forms with the anteriorly yellow-green, posteriorly orange-yellow subdorsal stripes and the green and white lateral stripes a very complicated pattern. MÜLLER

¹⁾ Whether the larva which STOLL figures in the supplement to CRAMER, Utitl. Kapellen, pl. 7, fig. 1, really belongs to *mermeria* Cr., appears to me somewhat questionable, as its shape does not correspond to that of the known Satyrid larvae and also the food-plant of this larva (the orange tree) leads one to suspect a mistake. Otherwise only grasses, bamboo and sugar-cane are known as food-plants for the Satyrid larvae. The larva figured is 42 mm long, 7 mm thick; on the dorsum red-brown with white, zigzag longitudinal stripe and with seven long, red and white, hairy spines; on the sides are placed white hairs, which cover the legs. At the anal end two tufts, which likewise bear red and white hairs. The head is triangular, with black and white hairs; on the frons two white stripes which run up sideways from the white mouth-parts to the frons and are joined into a point above. Food-plant: orange tree. The pupa is hung up perpendicularly, 30 mm long, 12 mm thick, with two short points on the head, green in colour and yields the butterfly in 14 days. Further investigations must decide whether STOLL's figure really represents the larva of *mermeria*.

was not able to observe the larvae (which were fed on bamboo leaves) any further, being obliged to leave the locality. Concerning the full-grown *ypthima*-larva, however, Herr SCHMALZ of Joinville tells me that it is green and has a broad grey-yellow longitudinal stripe on the back, which is bordered with yellow brown. The head is brown-yellow, with two lateral horn-like processes, which bear fine spines. The anal end is long-forked, the ends of the fork with grey woolly hairs and rolled-up. The larva feeds on *Crissimma*, a species of bamboo. I have not yet received a description of the pupa; but Herr SCHMALZ remarks with regard to the butterfly that it is almost exclusively met with in dark forests near the ground, also it sometimes comes into houses at night. In December 1887 the butterflies were observed flying at dusk in hundreds from south to north from one wooded district to another, low above the ground. Since then they have only been seen singly.

T. rectifascia Weym. (45 a). The apex of the forewing is not or only very little produced, and the teeth of the hindwing are much more obtuse than in *ypthima*. Upper surface unicolorous brown. The under surface is as variable as in *ypthima*, but it may be at once distinguished from the latter by the straight median band of the hindwing, dusted with whitish yellow or brownish. This band is bordered on the proximal side by a straight, dark brown line or a narrow brown stripe. In the marginal area of each wing 5 small, brown, white-centred eye-spots, of which the posterior one on the hindwing is somewhat larger than the others. The brown spot at the apex is absent in other specimens. South Brazil (Blumenau). — **stigma** Weym. is a form of *rectifascia*, in which the straight light band on the underside of the hindwing is dusted with grey, in place of the eye-spot in cellule 5 is placed a white spot 2—3 mm in size and instead of the eye-spot in cellule 6 a white dot. Likewise from Blumenau. — In **latifascia** Weym. (45 a) the ochre-yellow band on the hindwing beneath gradually increases in breadth anteriorly, only close to the costal margin it again becomes somewhat narrower, the anterior eye-spot is placed in this band, the 2nd on the boundary between band and marginal area. From the province of St. Catharina (Brazil). — A hitherto undescribed form of *rectifascia* with simple markings I call **servius** (46 c). It is considerably smaller (expanse 53 mm), the teeth at the margin of the hindwing are much less prominent, so that it is similar in form to the smaller *Taygetis*-species *kerea* and *penelea*, but the straight, brownish white median band on the underside of the hindwing, which is 11½ mm in breadth, is placed as in *rectifascia*, and as in the latter is sharply defined proximally, but not distally. Instead of the small ocelli there are white dots on both wings, only the last dot on the hindwing is surrounded by a black ring. For the rest the ground-colour of the under surface is unicolorous grey-brown with very indistinct dark brown marbling at the margins and dark brown marginal double lines. The upper surface is unicolorous dark brown like the type-form. From the province of Minas Geraës (Brazil).

T. nymphea Btlr. Shape as in *ypthima*. The hindwing somewhat less strongly dentate. Upper surface olive-brown, somewhat reddish at the margin, with blackish submarginal line. The under surface resembles *virgilia* in the markings, the second transverse line running almost entirely straight on both wings and only forming a small angle on the hindwing at vein 2. But the submarginal line is much more strongly dentate, there being 2 teeth in each cellule. The ground-colour is mixed with rose-red, paler in the ♀, the border is darker as far as the submarginal line. Before this are placed on a lighter ground on the forewing 4 ocelli, on the hindwing 5. They consist of fine brown rings, measuring 2—4 mm., with dark dots in the middle, some of which have white centres. The third and fourth ocelli on the hindwing are larger than the others. Honduras, Nicaragua, Guatemala.

T. virgilia Cr. (= *rebecca* F.) (45 a). Forewing not projecting at the apex, margin of the hindwing even in the anterior half, undulate in the posterior half, only at vein 4 with an obtuse point. Upper surface unicolorous brown. Under surface brownish grey with 2 straight, parallel, brown transverse lines, a short brown streak on the discocellular of each wing and a fine dentate submarginal line, before which are placed on the forewing 5 white dots and on the hindwing 6. At the distal margin the ground-colour shades off into brown. A widely distributed and common species. Mexico, Guatemala, Nicaragua, Costa Rica, Panama, Colombia, Guiana to South Brazil (Rio de Janeiro and Joinville). — **rufomarginata** Stgr. (46 a) is a form which occurs in both sexes amongst true *virgilia* in both north and south. It may be recognized by the reddish brown distal margin, 3—4 mm in breadth, of the posterior half of the hindwing above. In addition the under surface is more reddish brown. The larva of this form was bred by SCHMALZ at Joinville. It is green with yellow longitudinal stripes, with a small rolled-up forked tail. The whole larva with fine hairs. It lives on bamboo. The pupa is green, oval, hanging free. The pupal stage lasted 18 days. The butterfly flies at the beginning of December. — **erubescens** Btlr. (46 b), a further form of *virgilia*, is above unicolorous brown, beneath reddish pink, at the inner margin of the forewing olive-brown, the base of the hindwing rust-coloured, with a dark rust-brown median band through both wings, a large oval rust-coloured spot at the end of the cell of the forewing and a similar spot in the cell of the hindwing. From Colombia (Rio Dagua, Bogotá).

T. chrysogone Dbl.-Hew. (45 a) is a large species of 80—90 mm. expanse. The shape of the wings is similar to that of *virgilia*, but the hindwing has sharp angles on veins 1 b to 4, especially the tooth on vein 4 projects more strongly than the others. The whole margin of the hindwing is bordered by a broad,

brownish ochre-yellow band, which is proximally strongly dentate and extends from the apex to the inner angle. Under surface light reddish brown with 2 straight parallel brown transverse lines through both wings as in *virgilia*. At the distal side of the 2nd transverse line a whitish nebulous stripe. In the marginal area a row of white dots in indistinct rings and a brown dentate line. From Colombia (Bogotá, Carmen), Venezuela, and Peru. According to FASSL the egg is almost twice as large as that of *Pap. machaon*, white, spherical and completely covered with fine pores like a *Corades*-egg.

acuta. **T. acuta** *spec. nov.* (45 b) approaches *virgilia* in the markings, but the shape is different. The forewing is much longer at the costal margin, the hindwing at the inner margin, whilst the inner margin of the forewing and the costal margin of the hindwing are the same length as in *virgilia*. The distal margin of the forewing is consequently much more oblique. Vein 1 b (the submedian) of the hindwing runs out into a sharply projecting point. The point at vein 4 is even sharper. On the other hand the margin does not project at the other veins, but is only slightly undulate. Upper surface unicolorous brown. Under surface yellowish grey-brown with 2 straight brown lines as in *virgilia*, but the outer line runs more parallel with the distal margin. At the costal margin of the forewing it is 11, at the inner margin 9 mm. from the margin, whilst the distance in *virgilia* amounts to 14 and 7 mm. On the hindwing also this line runs for the most part parallel with the distal margin. From Espirito Santo (Brazil).

celia. **T. celia** *Cr.* (45 a). The distal margin of the forewing forms an obtuse angle on vein 5. The hindwing is dentate not only in the posterior half but also in the anterior, the tooth at vein 4 is stronger than the others. Upper surface unicolorous brown. Under surface yellowish grey-brown, on the hindwing with a somewhat violet tone, with 3 strongly curved brown stripes and the distal margin partly brown. On the third stripe are placed on each wing 5 dark brown eye-spots with white pupils and brown-yellow rings.

keneza. From Surinam, Brazil, Panama (Veragua). — **keneza** *Btlr.* (45 b) is a form of *celia*, which only differs in the less prominent eye-spots and an ochre-yellow spot on the middle of the hindwing beneath. From Nicaragua, *haenschi*. Panama, Colombia, Ecuador, Guiana; Brazil (St. Catharina). — **haenschi** *form. nov.* (45 b) is a considerably larger form of *celia*, expanse ♂ 71 mm., ♀ 85 mm. The wings with more strongly produced apex. Above brown, the fringes between the veins whitish. On the underside the median band of the hindwing is almost straight and distally sharply bounded by a dark brown line. The distal margin of both wings is in the ♂ broadly bordered with dark brown, in the ♀ on the other hand the whole under surface is lighter grey-brown and only the boundary-line of the bands dark brown. Hence the dark brown rings of the eye-spots stand out more distinctly in the ♀ than in the ♂. The pupil of the ocellus in cellule 2 of the hindwing is much larger than the others. Collected in Bolivia by HAENSCH and named in his honour. Colombia (Rio Vitaco).

uncinata. **T. uncinata** *Weym.* (45 b) has the shape and size of *celia* *Cr.*. Above brown with dark brown distal margin about 3 mm broad, white-grey for 1 mm. at the extreme edge, ciliae likewise white-grey. The under surface is characteristically marked in that from the dark brown median band of the forewing, which is 8 mm broad and separates the bluish grey basal half from the yellowish grey marginal area, a pointed tooth projects distally on vein 4, dividing the lighter part of the marginal area into 2 parts. On the hindwing the brown median band is removed further distad, so that it closely approaches the eye-spots. From Mexico. The species seems to be rare.

angulosa. **T. angulosa** *Weym.* (45 b). This is an isolated species as regards shape and markings. The distal margin of the forewing is ventricose in the middle, that of the hindwing forms a rectangular tooth on vein 4, but has no other sharp angles. Expanse 68 mm. Upper surface grey-brown, at $\frac{2}{3}$ the length of the wing is placed at the costal margin of the forewing a distally and posteriorly curved yellow-grey stripe, which only reaches to cellule 3. Hindwing with a dark brown submarginal line. Under surface yellowish grey, dotted with brownish, the veins darker. The transverse lines fine, dark brown. The anterior transverse line extends on both wings through the cell to the median. On the hindwing it is continued to the inner margin. The 2nd transverse line forms on the forewing a W, the points of which are placed on veins 3 and 4, on the hindwing it forms a right angle on vein 4. In the marginal area 3 white dots on the forewing and 5 on the hindwing; then follows a thin dentate submarginal line. Brazil (Amazonas, Petropolis). Rare.

andromeda. **T. andromeda** *Cr.* (= *laches* *F.*, *fatua* *Hbn.*). Expanse 68—83 mm. The distal margin of the forewing in the ♂ produced into a somewhat obtuse angle at veins 5 and 6, in the ♀ this angle is not present, the margin being uniformly rounded here. Hindwing in ♂ and ♀ uniformly angled at all the veins. Above unicolorous brown, the lighter band of the under surface in the ♀ showing through faintly above. Under surface bluish grey, with a rather broad basal band and a very broad, dark brown median band. The latter is distally straight and sharply defined, and is followed by a straight, whitish grey band extending from the costal margin of the forewing to the hindmargin of the hindwing. Beside this are placed in the marginal area on the forewing 5, on the hindwing 6 yellow-brown ocelli with ochre-yellow and brown rings and white pupils, only the 5th ocellus on each wing is brown or black. From Mexico, Guatemala, Nicaragua, Costa Rica, Panama, Colombia, Venezuela, Peru, Guiana, the Amazon to South Brazil (Rio de Janeiro, São Paulo) and Paraguay.

— **thamyra** Cr. (45 c) is a form of *andromeda* in which the eye-spot in cellule 2 on each wing is not black but *thamyra*, coloured like the others. From Surinam. — **marginata** Stgr. differs from true *andromeda* only in having *marginata*, the extreme border of both wings grey for a breadth of about 1 mm in addition to the grey fringes. It occurs in South Brazil (province of São Paulo) and in Paraguay. — **leuctra** Btlr. (45 c) is also referred to *andromeda* by GODMAN and SALVIN. The median area of both wings is broadly dark brown beneath, proximally shading off into lighter, distally sharply bounded by a straight white band. Behind this in the marginal area are placed on a white ground on the forewing 5 small ocelli, on the hindwing 4 somewhat larger ones, of which the 2nd and 5th on the forewing and the 1st and 4th on the hindwing are black, the others brownish, but all have yellow rings and white pupils. Sometimes (as in the example figured) there is in addition a small 5th ocellus on the hindwing. Rare. BUTLER knew no locality, the example figured is from Terapato in Peru. — **uzza** Btlr., a further form of *andromeda*, in which on the dark brown upper surface of the forewing 2 ochre-yellow bands are placed, one behind the middle, the other before the margin, the latter being proximally margined with brown. On the under surface the basal area is light bluish grey to the middle of both wings, where it gradually shades off into the narrow dark brown median band. The latter is distally not quite straight, but sharply defined. Next to it is placed the white-yellow band of the marginal area, and then follows the almost ochre-yellow marginal area, which is only bluish grey in the inner-marginal half of the hindwing, with 6 eye-spots on each wing, of which only the two last on the hindwing are black with red-yellow rings, all the others being ochre-yellow. Described by BUTLER from a ♀ from St. Geronimo in Guatemala, coll. SALVIN. — **elegia** Stgr. i. l. (45 c) is a hitherto undescribed form of *andromeda*, which most nearly approaches *uzza* Btlr. Instead of the two ochre-yellow bands of *uzza*, *elegia* has only one, which extends from the costal margin of the forewing to beyond vein 2 and decreases uniformly in breadth from 11 mm anteriorly to 4 mm posteriorly. The hindwing has sharp angles at all the veins and is unicolorous dark brown with a fine darker submarginal line. The under surface is similar to that of *andromeda*, basal and median area of both wings dark, the proximal part of the marginal area of the forewing is dull ochre-yellow like the upper surface, the 2nd eye-spot is removed somewhat distad as in *andromeda*. The hindwing has behind the middle a light lilac straight band, of the 6 ocelli the fifth is not darker than the others, but of the same colour. ♂ from the Rio Songo (1200 m) and Yungas, Bolivia. Coll. BANG-HAAS. — I give the name **asterie** to a new form of *andromeda* in which the marginal area on the underside of the forewing is only a little broader at the costal than at the inner margin, namely 14 mm. against 12. The light band in the proximal part of the marginal area, which is ochre-yellow and 4 mm. in breadth, is consequently much more vertical and is continued in the same direction on the hindwing. The rest of the marginal area is brownish ochre-yellow, on the forewing with five ocelli, on the hindwing with six, of which the first on the forewing and the first and last on the hindwing are only small, the others with the exception of the one in cellule 2 all measure 3 mm. in diameter, but that in cellule 2 has a diameter of 6 mm. and hence immediately attracts attention by its size, moreover it is deep black and has an ochre-yellow and a brown ring and thick white pupil. The other ocelli are all yellow-brown with ochre-yellow and brown rings. The light band of the underside shows through somewhat on the otherwise unicolorous brown upper surface. From Colombia (♀: coll. WEYMER). — **cleopatra** Fldr. (45 c) should probably also be regarded as a form of *andromeda*, although the light under surface and the often very indistinct eye-spots give it the appearance of an independent species. The upperside is brown, the ground-colour of the underside everywhere light lilac. The lightest examples have the transverse bands between basal and central areas and between central and marginal areas only narrow, but the latter transverse band is usually the broader, so that it fills up the distal half of the median area with brown; on the forewing, however, the whole of the median area is often brown, at least in its anterior half. The distal half of the marginal area is likewise brown and shades off proximally on both wings into the lilac ground-colour. Here are placed on the forewing five, on the hindwing six white dots in more or less distinct rings, which latter, however, are often wanting. From Brazil (Rio Negro, Bahia, Espirito Santo). In the examples from Espirito Santo the marginal area of the forewing is much narrower, measuring anteriorly only 10 mm., posteriorly only 8.

T. xenana Btlr. (46 b). Distal margin of the forewing straight, but rather oblique, the apex rounded, the hindwing feebly dentate. Upper surface unicolorous dark brown, the apex of the forewing somewhat lighter. On the under surface the base and middle of both wings are dark brown, distally bordered by a straight, light lilac line. Marginal area lighter brown with a row of five white dots on the forewing and six on the hindwing, which are indistinctly margined with ochre-yellow. From Cayenne and from Pebas in Peru. — **sosis** Hpffr. (45 d) is quite similar to the preceding in markings, but the forewing is shorter and broader and its distal margin more vertical. Moreover, the hindwing is more strongly dentate. On the underside the marginal area at the costal margin of the forewing is much narrower, and hence its proximal boundary, i. e. the light lilac, distally diffuse line, runs almost parallel with the distal margin, whilst in *xenana* it converges strongly with the distal margin. On the black-brown basal half of the hindwing beneath there is a strongly curved black transverse line. The white dots in the marginal area are very distinct. Peru, Surinam, Brazil (Espirito Santo and Bahia). — **godmani** Stgr. i. l. (46 b) is similar to *xenana*, but the forewing is narrower, more elongated and the distal margin incurved in the middle. Upper surface brown. Under surface dark brown to beyond the middle,

distally straight-edged; at the base only a little lighter, the basal area of the hindwing bordered by a straight dark transverse stripe, in the marginal area traversed throughout by a lilac transverse band, which on the forewing is anteriorly broad and posteriorly narrow, but on the hindwing on the contrary anteriorly narrow and posteriorly broad, and in which on each wing are placed 5 white dots. Of these dots the one in cellule 2 on the hindwing is surrounded by a broad black ring and a fine ochre-yellow one, which is $2\frac{1}{2}$ mm. in diameter. From Chiriqui and from the Amazon.

zippora. **T. zippora** *Btlr.* Shape and size of *godmani*. Above brown, before the apex of the forewing with a large triangular, yellow-grey spot, in the middle of the hindwing a very large, round, black spot, which extends nearly to the costal margin, but not to the distal and inner margins. On the under surface the base of both wings is black-brown, at the inner margin and distally lighter, with two black transverse lines, of which the distal one is bordered with lilac, apex of both wings dusted with lilac, an undulate submarginal line and the distal margin itself black. Forewing with five, hindwing with seven small, brown, white-centred and yellow-ringed ocelli, of which the 5th on the hindwing is larger than the others. Recognizable by the large black spot on the upperside of the hindwing. Cayenne. Rare.

echo. **T. echo** *Cr.* (= *betro Godt.*). Above brown with large, velvety, black-brown spot in the middle and a red-brown diffuse band before the apex of the forewing. Beneath the larger basal half is dark brown, the smaller distal half lighter brown, the boundary of the two colours is formed on the hindwing by a straight line, on the forewing by a somewhat curved one. In the marginal area there are five white dots on the forewing and six on the hindwing. Surinam, Cayenne, Amazons (Ega). — **velutina** *Stgr.* (46 a) is a form differing but little from *echo*, in which the velvety spot of the forewing is deeper black, but the red-brown band more indistinct. From Puerto Cabello (Venezuela) and Surinam.

banghaasi. **T. banghaasi** *spec. nov.* (45 d). Expanse 55 mm., forewing at the apex rectangular, at the distal margin rounded, somewhat ventricose. Hindwing between the veins only slightly excised. Upper surface unicolorous brown. Under surface in the basal half of both wings grey-brown with an almost straight dark brown transverse line. Before the discocellular in the cell of both wings a diffuse ochre-yellow spot. Distal half of the wings yellow-brown. A lilac-coloured band, 2—3 mm. in breadth, with washed-out margins, runs on both wings from the apex to the inner angle, on the forewing in a proximally directed curve, on the hindwing straight. At the proximal side of this band on each wing five white dots, on the forewing indistinct, on the hindwing distinct, especially the dot in cellule 2. Named in honour of Herr BANG-HAAS of Dresden. From the Rio Songo (1200 m) (Yungas), Bolivia.

puritana. **T. puritana** *Weeks.* As the author says nothing about the relationship to other species and of the shape of the wings, it is possibly not correctly placed here: Expanse 3 inches = 76 mm. Upper surface dark brown with white marginal line. Under surface much lighter brown with a broad dark band through the middle of both wings. A dark brown line crosses the middle of the cell of the forewing and extends to the inner margin. At the end of the cell a fine brown bar. Then follows the dark brown band, shading off lighter proximally, which extends from the costa to the submedian and is sharply defined distally by a dark brown line. In the light brown marginal area a dark brown, zigzag submarginal line and a row of six white dots, which are margined with brown, at the distal margin a white line. On the hindwing the dark band stands out more strongly. Its proximal margin is bounded by a dark line, which begins at the costa 8 mm. from the base and extends to the middle of the inner margin. The line which forms the distal margin of the band extends from the middle of the costal margin across the end of the cell to the inner margin, which it reaches 8 mm before the anal angle. The marginal area is as on the forewing, but only five white dots are present, which, however, stand out more distinctly. Bolivia (Coroico).

salvini. **T. salvini** *Stgr.* (45 d). Above unicolorous brown, the hindwing in this and the two following species shortly but uniformly angled on veins 1 b to 4. Under surface reddish grey-brown, the first transverse line on both wings a little curved distad, dark brown, the distal half of the median area broadly filled up with dark brown and straight-edged, the marginal area broader anteriorly than posteriorly, its proximal half lilac. Each wing with five ocelli, the last on the hindwing filled in with black, the others yellow-brown, all with white pupils. Colombia, Panama (Chiriqui).

tripunctata. **T. tripunctata** *Weym.* (45 d). Above brown with three white spots in a straight row one below another on the forewing, the light band of the underside shows through somewhat above on the hindwing. Under surface lighter brown with narrow, almost straight, distally diffuse white band scarcely 1 mm. in breadth across both wings, and five white, brownish-margined spots on each wing, as well as a finely dentate submarginal line. The marginal area of the forewing is equally broad anteriorly and posteriorly. From Puerto Bertoni and Nuova Germania (Paraguay).

sylvia. **T. sylvia** *Bates* (= *nymphosa Btlr.*) (45 d) is referred by GODMAN and SALVIN in the *Biologia* to *an-*

dromeda, but it is remarked at the same time that it is the most aberrant form, differing not only in the markings but also in the shape. On account of the white band on the under surface, which on the forewing runs parallel with the distal margin, in consequence of which the marginal area is equally broad anteriorly and posteriorly (in *andromeda* this is not the case), I regard *sylvia* as a good species and place it between *tripunctata* and *blanda*. The upper surface is unicolorous brown. On the under surface basal and median areas are uniform light brown, only the distal part of the median area somewhat darker. The first transverse line is dark brown, not quite straight. The straight white band which follows is narrow on the forewing, on the hindwing it gradually attains the width of 3 mm. In the light brown marginal area are placed on the forewing five, on the hindwing six small eye-spots, of which the 2nd and 5th on the hindwing have black rings and the others brownish ones, but all have white pupils. From Panama, Upper Amazon and Bolivia. — **blanda** Möschl. (45d) is *blanda*. similar to the preceding, but the inner angle of the hindwing more rounded. Upper surface unicolorous brown. On the under surface the white band is broader and on the hindwing somewhat curved. The ocelli somewhat larger, the posterior one on the forewing indistinct, on the hindwing entirely absent. The 2nd and 5th on the latter wing surrounded with thick black, then ochre-yellow and brown rings, the others ringed with grey and brownish. From Surinam and Peru (Cuzco).

T. albinotata Btlr. (46b). A beautiful species. Forewing with the margin entire, hindwing with rounded projections on the veins. Upper surface brown, the forewing either unicolorous or with six small, pale brown, indistinct spots before the margin. Hindwing somewhat darker at the margin, before this four round white spots in a straight row and a 5th dot at the inner angle. The fringes white between the teeth. Under surface lighter brown with three whitish yellow transverse stripes on each wing, between the 2nd and 3rd of these stripes on the forewing before the apex 1—3 small ocelli, on the hindwing six large ocelli, the middle ones reddish grey, the others black, all yellow-ringed and with white pupils. From Bolivia, South Peru and Ecuador. Rare.

T. penelea Cr. (45e). Above brown with a broad, somewhat lighter submarginal band on the forewing, in which are placed 3—4 dark brown spots. On the under surface a light yellow longitudinal band traverses the middle of the hindwing from the base to the distal margin. In the broad, light reddish grey submarginal band are placed on the forewing 2—5, on the hindwing 4—5 dark eye-spots, some large and some small, which have yellow rings and white pupils. Widely distributed and common. Panama, Venezuela, Colombia, Surinam, Cayenne, Amazon region to South Brazil (province of St. Catharina). — **penelina** Stgr. is a form of *penelea* in which the light yellow band of the underside is absent, being covered over by the grey ground-colour. Moreover, at the costal margin of the hindwing there are 2 large black-brown spots, which entirely or partially cover the anterior ocelli of the type-form. In the eye-spots which are still present the pupils have mostly disappeared. From St. Catharina.

T. valentina Cr. (= *Debis marpessa* Hew.) (45e). Above dark brown; beneath lighter brown with three very dentate, thin dark brown transverse lines, the space between the second and third proximally light violet-grey, distally filled up with white-grey and with 5 ocelli on each wing, of which the two anterior ones and the last on the hindwing are darker than the rest. Beside the first and second transverse lines there are small ochre-yellow spots in the cell of the hindwing. Guatemala, Nicaragua, Guiana, Amazons. — **euptychidia** Btlr. (45e) is a form of *valentina* in which the ground-colour of the underside is much lighter, the dentate brown transverse lines are very faint and of the eye-spots only 1 or 2 on the forewing and 2 or 3 on the hindwing are distinct, the others indistinct or replaced by white dots with somewhat darker margins. From Brazil (Pará, Espírito Santo). — **zimri** Btlr., referred by GODMAN and SALVIN to *valentina*, is a somewhat larger form, which differs from *valentina* in that the forewing has an obtusely projecting angle on the distal margin below the apex, the eye-spots of the forewing are not some dark and some light, but all uniformly yellow-brown and hence stand out but little from the violet-brownish ground-colour, and there are 6 eye-spots on each wing. For the rest the transverse lines are quite as dentate as in *valentina*. From Chuacus in Guatemala. — **vrazi** Kheil, a further form of *valentina*, in which the distal margin of the forewing is very feebly dentate, that of the hindwing more strongly so, the eye-spots of the hindwing are larger and more sharply marked, the ochre-yellow spot at the first transverse line is absent, but this varies also in *valentina*. Rio Atabapo (Venezuela) and Rio Negro (Brazil).

T. kerea Btlr. (45e). One of the smallest species (48—50 mm. expanse). The distal margin of the forewing rounded, the hindwing feebly dentate. Above brown with 2 dark lines at the distal margin and a whitish line between them; the latter stands out most distinctly in the angles of the hindwing. In addition a thin brown submarginal line. Beneath yellowish brown with 3 fine dark brown transverse lines; the first on the forewing indistinct, on the hindwing dentate, the second on the forewing almost straight, on the hindwing running parallel with the distal margin in one long curve, the third as a submarginal line forming short, small curves. In addition 2 fine brown marginal lines with a lighter line between them. Behind the second trans-

verse line 5 white, dark-margined dots on the hindwing and 3—5 more or less indistinct smaller dots on the forewing. Guatemala, Brazil (Espirito Santo), Paraguay.

inornata. **T. inornata** *Fldr.* (46 c). Above brown with 2 darker lines at the distal margin. Under surface lighter with 2 brown lines through the middle of both wings, which on the forewing diverge towards the costal margin, the proximal one forming a curve in the cell, the distal one almost straight; on the hindwing the proximal line is almost straight, while the distal one is curved outwards at the costal margin and forms 2 shallow curves in the middle. At the distal margin 3 brown lines, of which on the forewing the proximal one is undulate and the distal two straight, but on the hindwing all three are undulate. Three white dots on the forewing before the apex, the two lower ones very small, five white dots on the hindwing in cellules 2—6. Colombia (Bogotá).

10. Genus: **Amphidecta** *Btlr.*

Forewing at the distal margin with an obtuse angle below the apex, costal and median much inflated at the base, hindwing with the costal margin fairly straight, the inner margin much longer than the costal, distinctly emarginate, the distal margin dentate, the precostal vein distinctly forked, otherwise the neuration as in *Taygetis*; antennae thin, with scarcely appreciably thickened clubs. Eyes naked; the palpi projecting beyond the head, flattened at the sides, the hairs forming a sharp crest beneath. The genotype is *pignerator*. The two species united with it here differ somewhat in the shape of the forewing, the obtuse angle at the distal margin not being present, but the elongated inner margin of the hindwing and the scheme of markings of the forewing point to a relationship with *pignerator*. The butterflies are of less than medium size, and have been taken at isolated places in Central and South America, but as yet are little distributed in collections.

pignerator. **A. pignerator** *Btlr.* (46 c). Expanse 62 mm. Above grey-brown, on the forewing with 3 round white spots, which are placed in a triangle, one between median veins 1 and 2 and two between median 3 and the lower radial. The hindwing without markings; the marginal line on both wings dark brown, the fringes between the veins whitish. Forewing beneath light grey, the distal part from the apex to nearly the middle of the costal margin and to the inner angle, and also the costal margin itself to the subcostal are finely sprinkled with dark brown, in which colour in addition to the 3 white spots of the upper surface there is a fourth narrow white one and beside it a dark brown spot. Hindwing beneath lilac, sprinkled with violet all over, with 3 dentate transverse bands composed of brown dots, one before, the second behind the middle, the third before the distal margin. Before the latter a row of black dots in light rings. The species appears, however, to be very variable in the colour and markings of the hindwing beneath, as recent consignments from Herr FASSL prove. An example captured at Villavicencio has the underside of the hindwing light brownish grey with a brown distal margin 3—4 mm broad and not sharply defined. The under surface is sparsely adorned with small, fine brown striae, but in such a way that no dark transverse bands are formed, the striation being uniformly distributed all over. The transverse row of fine black dots just before the brown distal margin is, however, distinctly present. The species is but little represented in collections as yet. BATES found it many years ago at Ega on the Amazon in the dense primeval forests, FASSL quite recently at Villavicencio in East Colombia (450 m.) in April. — I give the name **simplicia** *form. nov.* (46 c) to a form of *pignerator* which is dark earth-brown above and has 4 white spots in the apical part of the forewing, which is black with a very dull blue reflection. From Minas Geraës (Brazil).

reinoldsi. **A. reinoldsi** *spec. nov.* (46 c). Expanse 48—50 mm. Above olive-brown, distal half of the forewing dark brown with 8 white spots, which are placed in two rows proximally curved in the middle. At the distal margin of the hindwing a double dark brown undulate line. Under surface grey-brown, the 8 white spots as above and placed in a brown area, which is surrounded by the ground-colour at the costal and distal margins. The hindwing has somewhat before the middle a straight dull white band, then a curved row of round ochre-yellow spots, each of these with a black dot or short streak in the middle. Before the margin a dark brown dentate line, which bears a black dot in the middle of each cellule, and two undulate lines close to the distal margin. The ♀ has a somewhat lighter, more yellowish ground-colour. On the underside of the hindwing the yellow spots are so widened that a continuous band is formed, in which besides the black dots and striae some shiny silver scales are strewn. Minas Geraës, St. Catharina (Brazil). Rare.

calliomma. **A. calliomma** *Fldr.* (46 b). 62 mm. Upper surface olive-brown, the distal third of the forewing darker, with two distally curved rows of 5 brownish white spots each, of which the anterior ones are somewhat indistinct. Hindwing with a submarginal row of brown spots. On the underside the forewing is as above, only somewhat lighter. The hindwing is marbled with dark brown on a grey-brown ground, with 2 silver spots, one near the base, the other in the middle. Behind the latter 3 dark brown eye-spots in ochre-yellow rings, with shining silvery pupils, of which the posterior one is the most distinct. From Colombia (Cordillera of Bogotá, Villavicencio, 750 m., May), Amazon (Manaos). Rare.

11. Genus: **Euptychia** Hbn.

This extensive genus with its numerous forms is by no means exactly defined as to its limits, as certain species form a complete transition to the genus *Taygetis*. In general all the butterflies are small to medium sized, only a few species reach a wing-expanse of nearly 6 cm., most remaining below 4 cm. The principal characters of the genus are the hairy eyes, the strongly inflated costal and median at the base, and the somewhat inflated submedian of the forewing. The short, distally curved precostal of the hindwing mostly arises before the subcostal. The upper discocellular of the hindwing varies in length. The forelegs of the ♂ are weak and long-haired. The wings are mostly rounded, the forewing has the apex rounded and little produced, its distal margin is almost straight, that of the hindwing is mostly undulate, sometimes completely round, in other species more strongly dentate, the inner margin of this wing is sometimes somewhat emarginate. But general distinctive characters are furnished by the stripes and the row of eye-spots on the underside of both wings. Only a few species have dots instead of the eye-spots. In the greater part of the Euptychias the colouring is brown or grey-brown. There are, however, also many which are distinguished by a brilliant light blue colouring and which when flying might be taken for Lycaenids. Others have a bright blue reflection on both wings or a part of them, others again have the ground-colour white. Of the eye-spots the one between medians 1 and 2 on the hindwing is mostly present and also usually larger than the other ocelli. Next to it the eye-spot between the two radials of the hindwing is the most developed. If one or several eye-spots are present on the forewing, one of them is likewise placed between the two radials.

The greater number of the species occur in tropical South America. Single species extend southwards to South Brazil and Argentina; from Chile, however, no species is yet known. To the north the genus reaches the limit of its range in the United States. The American authors place the 7 species occurring there in the genera *Neonympha* Hbn. and *Cissia* Dbl. But as these species have exactly similar allies in Mexico and in tropical Central and South America, I follow BUTLER and GODMAN and SALVIN in referring them all to *Euptychia*. As concerns the vertical distribution of the Euptychias, Prof. BÜRGER in his „Reisen eines Naturforschers im tropischen Südamerika“ („Travels of a Naturalist in Tropical South America“) states that they only occur in the „Tierra caliente“ and „Tierra templada“, the hot and moderate zones, thus up to 2000 m. The great majority of the species will be confined to these regions, but some few ascend somewhat higher and reach the middle of the „Tierra fria“, the cold zone, as FASSL has observed the species *necys* Godt. and *harmonia* Btlr. at the Quindiu Pass in Colombia at altitudes of 2500 m.

The habits of the Euptychias (according to Dr. SEITZ *in litt.*) are not altogether uniform. The members of the *hesione* group are tireless, although by no means swift fliers; their ♂♂ may be seen at almost all hours of the day flying straight along the edges of woods or bamboo hedges, more resembling a *Pieris* than a Satyrid. Even where they are common, as e. g. in Bahia, where they even come into the town, they are mostly met with singly; and Dr. SEITZ, who observed them there day after day, never saw them in large companies like the species of the *hermes* group. The latter are mostly dark-coloured species, show a decided preference for shade and come fluttering out from the thickets especially in the early morning hours, before the sun finds its way into the deep-cut mountain-valleys, flying low, after the manner of *Coenonympha hero*, and settling in large groups at the dew on the roads. Between 8 and 10 o'clock whole swarms of small *Euptychia* may be met with in the Botanical Gardens of Rio de Janeiro, where they rest on shady paths round the water and can scarcely be driven away, as when disturbed they only fly round and round a few times close to the ground, settling again in the same place after a few seconds. The larger forms of the *celmis* group are more retiring, carefully avoiding open paths and clearings, which they cross but rarely and with evident uneasiness; but they resemble the *hermes*-like forms in their habit of closing the wings spasmodically when resting, much as the European *Aphantopus*, from which in the same locality they can only with difficulty be certainly distinguished when flying. The larger species, of which some are also obviously nearly allied to *Taygetis*, show themselves more commonly in open places, the lilac gloss of their upper surface glittering in the sun, which the darker species carefully avoid. Finally the sky-blue species of the *cephus* group are especially lively in bright weather and contribute, together with other insects, to the wealth of bright blue colour which is a feature of the larger forest-clearings of tropical America, competing with *Thecla*, *Morpho*, *Pythonides*, glossy blue dragon-flies, Hymenoptera, bugs and beetles in the brilliancy of their blue and metallic scaling.

Concerning the earlier stages of the Euptychias little is known. Of some North American species EDWARDS has furnished descriptions and figures of the eggs, larvae and pupae; on the other hand MÜLLER, who obtained eggs and small larvae of some Brazilian species, was not able to bring any as far as the first moult. They live on grasses.

It is not within the scope of this work to give a monographic working out of the genus; we only offer a survey of those already known, and in this we chiefly follow the work of BUTLER with some few modifications. The types of FELDER's species, which BUTLER was not able to make out, we here figure above and beneath, but must merely refer at the end to some species described and not figured by other authors, as in these cases similar or allied species are not mentioned.

Hesione Group.

- hesione*. **E. hesione** Sulz. (= *ocirrhoe* F., *cissia* Cr.) (46 d). Above white with broad black apex to the forewing, which is more or less continued on the distal margin. In the ♀ the margin of the hindwing is also black and the forewing has a dark median band. On the under surface brown and white transverse stripes alternate, before the distal margin are placed on the forewing 3, on the hindwing 5 ocelli. The extent of the black colour on the upper surface varies very much according to the locality. Widely distributed and common. Mexico, Central America, Surinam, Colombia, Peru, Bolivia, Brazil as far as St. Catharina. The examples from Bolivia
- subobscura*. have the forewing somewhat more pointed, otherwise I see no difference. **subobscura** form. nov. (46 d) is an aberrant form, in which the white bands of the under surface, except the distal one, are covered by a brownish grey
- lydia*. colour. I have received this from Paraguay, but it also occurs at single localities in Brazil. — **lydia** Cr. is a somewhat larger form (60 mm.) with broad, rounded wings. Forewing almost entirely brown, only the basal half of the inner margin is dusted with white, but indistinctly defined. The hindwing is white with 3 fine brown marginal lines and 2 round black spots in cellules 2 and 5. On the under surface the brown bands are much narrower in the basal area, the white bands on the other hand twice as broad. Forewing with 2,
- calpurnia*. hindwing with 5 eye-spots, similar to those of the type-form. Surinam. — **calpurnia** Fldr. (46 d) is a form similar to *lydia*, but somewhat smaller (50 mm.), with somewhat narrower and more elongate forewing, which has a very shallow excision at the distal margin. The brown ground-colour is somewhat lighter than in *lydia*, the white extends on the forewing from the inner margin to the median, the brown stripes of the under surface show through above on both wings, and also the eye-spots, of which, however, only one is present on the forewing
- binocula*. and only 3 on the hindwing. From the Maroni in Cayenne, Surinam. — **binocula** Btlr. (46 d), a further form of *hesione*, has the upper surface of both wings light grey-brown with 2 dark brown bands through the middle and broad brown distal margin, which occupies over a third of the wings, only the middle of the hindwing is dull white and in cellule 2 there is a round black, white-bordered spot. The under surface is as in *hesione*. From Cayenne.
- metaleuca*. **E. metaleuca** Bdv. (= *butleri* Dist.) (46 d) is indeed nearly allied to *hesione* Sulz., but following the example of GODMAN and SALVIN I regard it as a good, independent species. Whilst in *hesione* and its allies the light bands on the under surface are all nearly equal in breadth, in this species the distal band is more than twice as broad as the others, moreover these narrower, basal bands are mostly strongly dusted with grey-brown. In addition the forewing of the ♂ is not so round, but more triangular and at the distal margin somewhat waved. The upper surface of the forewing is black-brown, with a white triangle on the middle of the inner margin. From Mexico, Brit. Honduras, Guatemala, Nicaragua, Costa Rica, Panama, Colombia, Ecuador. —
- languida*. **languida** Btlr. (46 e) is a form of *metaleuca*, in which the white colour is reduced on the forewing but somewhat extended on the hindwing, and in the middle of the distal margin reaches nearly to the border. In cellule 2 and in cellule 5 a black, eye-shaped spot is placed on the dark border. The under surface is grey-brown with broad white median band, an eye-spot on the forewing in cellule 5, 3 eye-spots on the hindwing in cellules 2, 5 and 6, all black with yellow rings and white pupils. Between the eye-spots of the hindwing and below the eye-spot of the forewing are placed some small round silvery spots. Columbia, Bolivia.
- hemileuca*. **E. hemileuca** Stgr., only known in the ♀, has an expanse of 38 mm. and somewhat resembles *languida* Btlr. above; but the white colour is extended nearly to the costal margin of the forewing and covers the entire hindwing, leaving only a narrow black distal margin, and the two round black spots are isolated. The under surface is entirely brown-grey with 2 narrow dark brown transverse stripes through the middle, bordered with light grey, 3 fine brown marginal lines, 1 eye-spot on the forewing and 3 on the hindwing. The anterior eye-spot on the latter is 4 mm. in diameter, with black centre and white double pupil. The others are smaller, but similarly coloured. From the Rio San Juan in West Colombia. Rare.
- aurigera*. **E. aurigera** Stgr. i. l. (46 e) resembles no other *Euptychia*; ground-colour white; on the forewing the costal margin, apex and distal margin broadly black-brown, broadest before the apex, hindwing with narrow, dentate brown border. The pattern of the under surface shows through above. This brown with a white band through the middle of both wings, extending from the lower radial of the forewing to the inner margin of the hindwing and pointed at both ends. On the hindwing are placed on a reddish ochre-yellow ground 5 ocelli in a zigzag row and between the 3 brown marginal lines small white double dots on the veins. From Cuzco in Peru, coll. BANG-HAAS. Rare.

Mollina Group.

E. mollina Hbn. (46 e). Above with the forewing whitish grey, at the costal and distal margin darker with 3 brownish transverse stripes, before the apex a dark spot. Hindwing white with 2 round dark spots in brown rings. On the under surface the ground-colour is purer white, the transverse stripes consequently more distinct. On the forewing a black eye-spot before the apex, surrounded by a brown ring, 3 indistinct eye-spots below it in cellules 2—4. Hindwing beneath with 6 eye-spots, those in cellules 2 and 5 large, in cellules 1 b and 6 small, all black with white pupils and brown rings, those in cellules 3 and 4 obsolescent. From the Amazon region (Pará, Ega), Nicaragua, Mexico. **mollis** Stgr. is only a form of *mollina*, in which the forewing has only one or two ocelli on the under surface and also those of the hindwing are reduced in number and some of them much smaller. From Chiriqui. — **hilara** Fldr. (46 e). One of the larger forms of *mollina*, above light brownish grey with one transverse stripe on the forewing and 2 on the hindwing, which are somewhat darker, with one eye-spot on the forewing and 2 on the hindwing. On the under surface the ground-colour is still lighter, somewhat whitish, the transverse stripes as above, in the median area of the forewing a reddish yellow washed-out spot and before the apex an eye-spot. On the hindwing 4 small ocelli and 1 large one. Colombia (Bogotá). — **westwoodii** Btlr. (46 e), a further form of *mollina*, mostly smaller (26—33 mm.) and with the ground-colour purer white. Only the costal and distal margins of the forewing are brownish grey. The brownish bands are narrow and the eye-spots indistinct. On the under surface the forewing has only 3, the hindwing all the 6 ocelli. Mexico, Guatemala, Honduras, Nicaragua, Costa Rica, Panama, Venezuela, Colombia, Bolivia. — **jesia** Btlr. (46 e) only differs from *westwoodii* in having the brown transverse stripes on the upper surface entirely absent or only faintly showing through from beneath, the apex of the forewing only 4 mm. in breadth and the costal and distal margins only quite narrowly brown. The under surface is as in *westwoodii*. Bolivia, Ecuador.

E. meta spec. nov. (46 e). Above grey-brown, on each wing a large white area, which on the forewing is placed nearer to the inner, on the hindwing to the costal margin. The first two transverse stripes converge anteriorly on the forewing, posteriorly on the hindwing. On the forewing a dark spot before the apex, on the hindwing three in place of the ocelli, behind them the dark submarginal band. On the under surface there is in addition a fourth band near the base of the wings and on the forewing are placed 2 ocelli near the apex and on the hindwing 3 in cellules 2, 3 and 5, all black with white pupils and surrounded by 4 rings, namely ochre-yellow, brown, white and outside again brown. The 2nd eye-spot of the forewing and the middle one of the hindwing are smaller, the others are larger, being 3 mm. in diameter and extending over two cellules, so that their outer rings touch one another. In the ♀ an additional small eye-spot is present on each wing, which is placed between the others. From Marcapata (Peru).

E. fetna Btlr. Above pale brown, forewing with 2 curved rust-coloured stripes before and in the middle, an obscure rust-coloured spot between medians 1 and 2, before the apex a round black spot in an ochre-yellow ring. Hindwing with rust-coloured median and submarginal stripes and a black eye-spot with white pupil and yellow ring. Beneath lighter, especially in the distal part of the forewing, with a chain of small brown rings before the distal margin of both wings. Forewing with a proximally curved median and a straight rust-coloured basal stripe, which are both continued fairly straight on the hindwing. The latter has 5 eye-spots, of which the 2nd and 5th are black, with yellow iris and brown ring, the others are dull red-brown, all have shining white pupils. On the forewing only one eye-spot as above, with some brownish spots below it. 36 mm. From San Geronimo and Cubilquitz in Guatemala, Amula and Chilpancingo in Mexico. Rare.

E. enyo Btlr. Above pale brown with 2 brown median stripes and a submarginal one, a marginal line, a spot before the apex of the forewing and another at the anal angle of the hindwing. The apex of the hindwing is reddish. Beneath ochre-yellow with red-brown bands as in *mollina*. Forewing with 4, hindwing with 6 ocelli. The first on the forewing and the 2nd and 5th on the hindwing are larger than the others. The 6th eye-spot on the hindwing is placed close to the distal margin and the border of cellule 1c near a red-brown longitudinal stripe characteristic of this species, which extends inwards along the first median. 35 mm. From Cuenza (Ecuador). Rare.

E. anaclela Btlr. Pale brown, 2 dark bands through the middle, a blind eye-spot before the apex of the forewing and 5 on the hindwing, the 5th being larger than the others. The submarginal line on the hindwing double. Beneath very light grey, almost white, with 2 red-brown bands in the basal half, a third, broader band, which is only red-brown on the hindwing, but ochre-yellow on the forewing, then 2 undulate blackish submarginal lines, which at the anal angle of the hindwing terminate in 2 orange-coloured streaks. Forewing with a large subapical eye-spot with blue pupil and red-yellow ring, below it 2 indistinct eye-spots and a large washed-out ochre-yellow spot. Hindwing with 5 ocelli, the 1st, 2nd and 5th black with blue pupils, the 3rd and 4th brown with silvery pupils, all with yellow iris. These ocelli, of which the 4 anterior ones are small but the 5th large, are placed in a straight row. 33 mm. Nicaragua (Chontales), Panama (Chiriqui), Colombia (Bogotá). Rare.

insolata. **E. insolata** *Btlr.* (= *macrophthalma* *Stgr.*). Smoke-brown, slightly transparent, in the disc lighter, sometimes white, 2 almost parallel brown median lines and 2 indistinct submarginal lines across both wings. Forewing with an indistinct eye-spot before the apex, hindwing with 2 black, white-dotted eye-spots, one at the apex, and a larger one at the inner angle. Beneath whitish with the bands as above, the two in the middle and one at the base red-brown, and with black submarginal line. Forewing with 2 eye-spots, one before the apex, black, white-pupilled with red ring, the other indistinct, between the median veins. Hindwing with 3 eye-spots, the two anterior ones margined with red, the third very large, with brown border, at the anal angle. From Nicaragua, Costa Rica and Panama.

picea. **E. picea** *Btlr.* (46 e). Similar to the preceding species, but the wings are not transparent, above brown with 4 dark brown bands, a short one at the base, the 2nd approaching the 3rd at the costal margin of the forewing, the 3rd approaching the 4th at the inner margin of the same wing. A black spot at the apex, the hindwing with 2 in cellules 2 and 5. In the ♀ the wings are more rounded and instead of the spots there are rather large ocelli with ochre-yellow rings and white pupils. Under surface light violet-grey, transverse bands more distinct than above. On the forewing are placed 2 or 3 eye-spots, of which the first is the largest, and the middle one is mostly absent. On the hindwing are placed usually 3 eye-spots, occasionally 4 or 5. Of these the one in the cell is the largest, being 3 mm. in diameter, but sometimes reaching a diameter of 4 to 4½ mm. and then naturally extending far into the adjoining cellules. Two ocelli are placed at the apex in cellules 5 and 6, of which the one in cellule 5 is about the same size as the anterior eye-spot of the forewing, the other being smaller. When additional eye-spots are present, they are placed in cellules 3 and 4, but are even smaller. From the Amazons (*Ega*, Tapajos), and also from Peru and Surinam. — **rufocincta** *form. nov.* (46 f) is a form of *picea*, somewhat larger, the markings quite similar, but the two round black-brown spots on the upperside of the hindwing are first surrounded by an ochre-yellow, narrow ring and then by a red-brown, broad one, forming eye-spots of 4 mm. in diameter. On the under surface there are on the forewing 2 ocelli (the first large), on the hindwing 5 (the 2nd and 3rd larger), some of which are contiguous. From Surinam.

Saturnus Group.

francisca. **E. francisca** *Btlr.* Above violet-brown, an indistinct brown spot at the anal angle and 2 brown marginal lines. Beneath ochre-yellow, two brown, somewhat proximally curved median lines, a submarginal and 2 marginal lines. On the forewing a small eye-spot with pupil, the hindwing with 5 eye-spots, the 2nd and 5th black, with white pupils, 3 mm. in diameter, the others small, the first likewise black, the 3rd and 4th brown, all with ochre-yellow iris and brown ring. Ecuador.

saturnus. **E. saturnus** *Btlr.* (= *laccine* *Fldr.*) (46 f). Above olive-brown, with a lighter nebulous band through the middle of both wings and a black, white-pupilled and brownish-yellow-bordered eye-spot at the anal angle of the hindwing. Beneath light grey with 2 straight, brown transverse lines and a white band, increasing in breadth posteriorly, through the middle of both wings. Forewing with a black ocellus, the hindwing with 5 ocelli, of which the 3rd and 4th are brown, the others black, all with yellow iris and brown ring, the first 4 on the hindwing with double white pupil, the others with single. At the margin 3 brown lines. Venezuela, Colombia (Rio Agnata 1800 m., in November), Bolivia (Corvico), Brazil.

vesta. **E. vesta** *Btlr.* (= *griphe* *Fldr.*) (46 f). Above olive-brown, at the distal margin 3 darker lines, which are confluent on the forewing. On this wing is placed in the ♂ in the middle of cellules 1 b, 2 and 3 between the submedian and the 3 median veins a narrow streak of dark brown, raised scales, which is sharply angled distad on the veins. At the anal angle of the hindwing in cellule 2 a black eye-spot with white double pupil and red-yellow ring. Sometimes in addition a small eye-spot beside it in cellule 1c. In the ♀ the raised scales on the forewing are absent, on the other hand there are on the hindwing in cellules 3—5 two or three further similar eye-spots, which, however, are smaller, sometimes faint or without pupils. The under surface is brownish yellow with a narrow light yellow band across the forewing and a broad white band across the hindwing, irregularly defined on both surfaces, but in the middle much widened by a broad, basally directed projection. In the marginal area are placed on the forewing one, on the hindwing in the ♂ 5, in the ♀ 6 eye-spots, of which the 3rd and 4th on the hindwing are brownish grey, the others black, but all ringed with ochre-yellow and brown and bi-pupilled with white. Venezuela, Colombia (Cauca Valley, Rio Agnata, 1800 m, [November], Rio Tocha at the Quindiu Pass, 2100 m. [September]).

fida. **E. fida** *spec. nov.* (46 f). Similar to *vesta* *Btlr.*, but distinguishable at once by the absence of the raised scale-streak on the forewing in the ♂. The eye-spot on the upperside of the hindwing is also absent and the light band on the under surface is differently formed. At the costal margin of the hindwing it is only half as broad as in *vesta*, it does not project basad in the cell but forms small proximal projections in cellules 2 and 5. The ♂ has beneath 6 eye-spots, the 2 middle ones brown-grey, the others black, mostly with single white pupils. On the forewing there are two indistinct smaller ocelli below the subapical one. From the Songo and Corvico in Bolivia.

E. transversa *spec. nov.* (47 a). Similar to *vesta* and *fida*. The raised scales of the former are likewise *transversa*. absent here, and there is no eye-spot on the upperside of the hindwing. Of the 3 dark brown marginal lines the inner is indistinct and more proximally directed. On the under surface are placed at the apex of the forewing 2 black ocelli with white pupils and ochre-yellow rings. The marginal area of the forewing in this species is not lighter. But the chief difference is in the underside of the hindwing. The two dark brown, dentate, narrow transverse stripes are removed further distad; the first runs behind the middle of the cell across the origin of the first median vein to the middle of the inner margin and forms in its posterior part the proximal boundary of the white band. The second brown transverse stripe runs over the closing nervure of the cell, intersecting the white band, afterwards forming its distal boundary and uniting with the dark brown submarginal line at the inner angle. Hence the anterior part of the white band is placed in this species in the much widened marginal area. In this area there are 5 ocelli, coloured like those of the forewing, the two in cellules 2 and 5 larger than the rest. From Marcapata (Peru). Rare on the Rio Vitaca (2400 m.) in Colombia.

Nossis Group.

E. nossis *Hew.* (= *jaresia* *Btlr.*). Above brown, at the anal angle of the hindwing a black eye-spot with *nossis*. red-yellow ring and white double pupil. Beneath lighter brown, forewing with 2 straight median lines, a doubly white-pupilled eye-spot before the apex and 3 brown spots below it, also 3 brown marginal lines. Hindwing with 2 brown transverse lines in the middle, the first straight, the second basally curved in the middle. Just behind these a white band traversing the wing, 3 times as broad in the middle as anteriorly and posteriorly, then a row of 4 eye-spots, of which the 2 in cellules 2 and 5 are larger, the others, in cellules 3 and 6 smaller, all black with yellow iris and brown ring, only the larger ones have double white pupils. Ecuador (Quito). This species has some resemblance to the above described *fida*, but is easily distinguished from it by the shape of the white band on the underside of the hindwing, which at its proximal side is uniformly rounded like a sector, whilst in *fida* it is strongly dentate and sinuous. BUTLER refers (*Journ. Linn. Soc. Zool.* 13, p. 117) his *jaresia* to *Eupt. furina* *Hew.* A comparison of the figures, however, shows at once that the two species are not alike, but that *jaresia* belongs rather to *nossis* *Hew.*

E. clio *Stgr. i. l.* (47 a). Forewing with the distal margin slightly undulate, hindwing obtusely dentate. *clio*. Above brown, hindwing with double dark brown marginal and indistinct, broad submarginal line, fringes light grey. Under surface likewise brown. Forewing at $\frac{3}{4}$ of its length with a narrow, straight, light grey stripe, along the distal margin a broad stripe of similar colour, traversed by 2 dark brown marginal lines. On the hindwing first a white stripe from $\frac{2}{3}$ of the costal margin to the middle of the inner margin. In the marginal area are placed 2 large brownish yellow semicircles, the curve of which is directed towards the band. Inside each a glossy silver curved line, which again encloses a large black spot with brownish yellow bordering. On the dark grey distal margin 3 black undulate lines. From Marcapata, Peru. A rare and beautiful species. Coll. BANG-HAAS.

E. albofasciata *Hew.* Size of the preceding. Above reddish brown with broad, white median band *albo-* from the 3rd median in the forewing nearly to the inner margin of the hindwing. The hindwing has a *fasciata*. large black eye-spot at the inner angle with orange-yellow ring and white pupil, as well as 2 white lines at the apex. Under surface somewhat lighter than above, the white band reaching to the costal margin of the forewing. The base is grey with a brown band, the distal margin dull white with 3 parallel brown lines. Forewing with an eye-spot at the apex, hindwing with 6 eye-spots, of which the two middle ones are oval, brown with a silver streak in the middle, the others black, in part with double pupils, but all with reddish yellow rings. From Ecuador. Rare.

Pronophila Group.

E. pronophila *Btlr.* Above olive-brown. Beneath the same, forewing with a broad, somewhat *pronophila*. lighter discal band, in which are placed 5 small indistinct ocelli. Hindwing with triangular white discal band, beginning at the apex in a fine point and terminating at the inner margin close to the anal angle with a breadth of 5 mm. Behind this a light brownish band with 5 small eye-spots, of which the 1st, 3rd and 4th are white and surrounded by brown and broad light ochre-yellow rings, the other 2 black, finely pupilled with white and margined with darker yellow. The basal area is finely striated with brown and bears 2 brown transverse lines. From Rio de Janeiro. Coll. HEWITSON in the Brit. Museum. Rare.

E. ordinata *spec. nov.* (47 a). Above olive-brown, at the distal margin somewhat darker with lighter *ordinata*. fringes. Beneath lighter brown. Forewing with indistinct line behind the middle, 2 brown lines before the margin and black-brown marginal line. Hindwing with broad white band, which runs from the middle of the inner margin across the discocellular to vein 6 near the apex and is not sharply defined on either side. Behind it is placed an orange-yellow band, which only extends from vein 1 b into cellule 4. On this are placed 3 small, round black spots, which are marked on their proximal side with a small, silvery crescent. A black dot is placed in cellule 4 at the end of the orange-yellow band. From Bolivia (coll. SEITZ). Similar to the preceding species, but easy to distinguish from it by the orange-yellow band, which is wanting in *pronophila*, as well as by the position of the white band, which in *pronophila* is placed more distally.

- ashna*. **E. ashna** Hew. (47 a). Above brown with small, obscure, darker spot at the anal angle. Beneath somewhat lighter. Forewing with 2 brown transverse lines and 3 marginal ones. Hindwing with a brown transverse line at the base, a straight white band from $\frac{3}{4}$ of the costal to $\frac{2}{3}$ of the inner margin and 3 black, white-pupilled eye-spots in cellules 2, 5 and 6, the first with double pupil and all margined with red-yellow. Between these eye-spots are placed in cellules 3 and 4 red-yellow rings with small, indistinct silvery centres.
- butleri*. The ♀ is marked like the ♂, but somewhat larger. From Colombia, Ecuador and Peru. — **butleri** Weym. (= *ashna* Btlr.) is a form of *ashna*, in which the ground-colour of the wings is above yellowish brown and beneath yellowish grey and the red-yellow rings in cellules 3 and 4 on the underside of the hindwing are as dark and enclose as large ocelli as those of the other cellules, forming a row of eye-spots of fairly uniform colouring. Ecuador. The name *butleri* Dist. is a synonym of *metaleuca* Bdv., hence *butleri* Weym.
- ambra*. can be retained for this *ashna* form. — **ambra** form. nov. (47 a) approaches *ashna* Hew. Hindwing somewhat more strongly dentate. Above brown with 3 darker marginal lines. Beneath somewhat lighter, especially in the marginal area and at the inner margin of the forewing. Hindwing with white band, almost as in *ashna*. The marginal area behind this band is almost entirely red-yellow, and separated from the band by a brown line. In it is placed in cellule 2 a round black spot with double pupil, another in cellule 5, but surrounded with red-yellow and brown ring and a similar but quite small eye-spot in cellule 6. At the distal margin in addition to the 3 parallel marginal lines a 4th brown submarginal line as distal boundary to the red-yellow marginal area. Between the two inner lines a row of whitish (♀) or light grey (♂) spots. Bolivia, Peru (Cuzco), 2—3000 m.

Liturata Group.

- liturata*. **E. liturata** Btlr. Above pale olive-brown, at the margin darker, fringes reddish grey. Beneath darker, covered with numerous short dark brown streaks, at the costa mixed with whitish. Forewing before the apex with a small black, white-pupilled eye-spot, ringed with ochre-yellow, and with 2 similar, extremely small ones below it. Hindwing on the somewhat lighter brown discal band with 5 equally small eye-spots, of which only the 2nd and 5th are somewhat more distinct. Marginal line black. Locality unknown. Coll. HEWITSON in the Brit. Museum.
- luttela*. **E. luttela** Weeks. Above bronze-brown, somewhat glossy, beneath the same colour, without gloss. Forewing between the dark brown marginal line and the distal margin at the apex dusted with yellow, an indistinct brown submarginal line, inner margin grey. On the hindwing the interspace between the 2 dark brown marginal lines is reddish-yellow. A small reddish yellow spot at the anal angle, containing a black central dot. 29 mm. Alezuni in Bolivia. Flies in August. Resembles *liturata* Btlr., but the eye-spot at the apex of the forewing is absent.
- vesper*. **E. vesper** Btlr. Allied to *liturata*. Above olive-brown. The eye-spots of the under surface are faintly visible above. Under surface copper-coloured, marbled with brown. Marginal line black. Forewing with dark brown discal and submarginal lines, below the apex a single black eye-spot with yellow ring and white pupil. Hindwing with 5 similar ocelli. The 2nd and 5th larger. A brown irregular discal line and the angled submarginal line unite before the inner angle. The club of the brown antenna is rust-coloured. Locality unknown. 35 mm. Coll. HEWITSON in the Brit. Museum.
- armilla*. **E. armilla** Btlr. (47 a). Above olive-brown, according to BUTLER with a very indistinct eye-spot on the hindwing at the anal angle, which is wanting in the example figured. Marginal line black. Under surface brown with dark brown discal, submarginal and double marginal lines on both wings. The ground-colour is somewhat lighter outside the submarginal line before the apex of the forewing and at the margin of the hindwing. A black, white-pupilled eye-spot with ochre-yellow ring before the apex of the forewing and 6 similar eye-spots on the hindwing, which vary but little in size. From the Brazilian provinces of Minas Geraes and Matto Grosso (Cuyaba). According to Herr BANG-HAAS *armilla* and the following *strigillata* are seasonal forms of one species. Further observations in respect to this are needed, however, as the forms are very different.
- strigillata*. — **strigillata** form. nov. (47 a). Above olive-brown, the central area of the forewing from the subcostal to the median covered with thicker, velvety, raised scales, hence standing out more darkly. Fringes grey. Under surface: forewing olive-brown, finely striated with brown all over, the apex brownish grey, also the distal margin, but more narrowly, likewise striated with brown. 2 marginal lines and a submarginal dark brown. Somewhat further back a 4th brown line, which does not reach the inner margin. Between the last-named lines 2 white dots and above them an ochre-yellow eye-spot with white pupil and brown ring. Hindwing grey, marbled with brown, basally darker, at the distal margin lighter with 5 small red-yellow eye-spots, which are white-pupilled and brown-margined. From Cuyaba in the province of Matto Grosso in Brazil.
- arius*. **E. arius** spec. nov. (47 a). Similar to *armilla*. Above brown with 2 darker marginal lines and a strongly dentate submarginal line on both wings. Hindwing with a small round black spot in a somewhat lighter ring at the anal angle. Under surface brown, on both wings dusted with grey at the distal margin. 2 almost straight transverse lines before and behind the middle on both wings, a dentate submarginal line and 2

marginal lines, straight on the forewing, undulate on the hindwing. On the hindwing 5 black ocelli with white pupils and ochre-yellow rings, the 2nd and 3rd ocelli smaller. Sometimes in addition a very small eye-spot in cellule 1b close to the inner margin between the median lines. From the Mapiri.

E. viridicans *spec. nov.* (47 b). Above olive-brown. Beneath much lighter in consequence of having *viridicans*. both wings dotted with greenish grey. The dark brown median lines, the dentate submarginal and the 2 marginal lines are as in the preceding species. On the forewing a small eye-spot in cellule 5, black with white pupil and yellow ring, an indistinct, still smaller ocellus in cellule 3. On the hindwing 5 distinct eye-spots, the 3rd and 4th small and brown, the others black with yellow rings and white pupils, the 3rd to 5th bi-pupilled. 37 mm. From Peru.

E. monahani *Weeks*. Above dark brown, margin somewhat lighter. Forewing beneath black-brown *monahani*. with grey marginal line, brown submarginal line and grey apex. Between the median veins (WEEKS says: above the lowest submedian nervule!) a black eye-spot with white pupil and light brown ring. Above it 2 small white dots and before the apex a small yellow spot. Hindwing proximally black-brown, distally light brown mixed with grey, the distal margin somewhat darker, marginal line grey, a marginal and a submarginal line brown. At the anal angle in cellule 1c a small yellow spot, in cellule 2 a yellow eye-spot with white pupil. From the inner margin a dark brown line runs to the cell. Sometimes the eye-spots are indistinct and the distal margin less grey. 35 mm. From Alezuni in Bolivia. August.

E. therkelsoni *Weeks*. Above dark brown, distally somewhat lighter. Beneath the same, forewing *therkelsoni*. with light brown marginal line, a dark brown, dentate marginal line and a 2nd similar transverse line behind the middle. These lines are indistinct on the forewing, on the hindwing they are repeated, but are more distinct, and join at the anal angle, and there is here an additional, indistinct line in the middle of the cell. Eye-spots and dots are not mentioned in the original description of this species. 38 mm. From the environs of Cochabamba in Bolivia. August.

Ocypete Group.

E. ocypete *F.* (47 b). Above brown with 2 somewhat darker median bands, a double marginal and a dentate submarginal line, in the anal angle of the hindwing a black eye-spot with double white pupil and yellow ring. The eye-spot is sometimes absent. Beneath light brownish grey with 3 broad brown stripes across both wings, to which is added on the hindwing a short 4th stripe at the base. On the distal stripe on the forewing 1 or 2, on the hindwing 5 eye-spots, black with yellow ring and glossy white double pupils, only the 2nd and 4th are brown. Surinam, Pará. — **helle** *Cr.* (47 b), a form of *ocypete*, has on the upper surface dark blue-grey ground-colour with bluish gloss, black veins and 3 black marginal lines, between which the ground-colour is somewhat lighter. The black eye-spot at the anal angle of the hindwing with fine white double pupil. The under surface is similar to that of *ocypete*. Ground-colour bluish white-grey with broad brown bands. On the forewing 3 ocelli, one distinct and 2 obscure, hindwing with 5 eye-spots, all with double silver pupils and yellow iris, the 2nd and 5th black, the others brown. Surinam, Amazons (Iquitos). — **lethra** *Möschl.*, like *lethra*. likewise a form of *ocypete*, is above brown; on the underside of the hindwing the eye-spots in cellules 3 and 4 placed more proximally, so that the proximal margins of the entire row of eye-spots form a straight line. The eye-spot in cellule 6 is considerably larger. Further in *lethra* the two transverse stripes of the hindwing run straight into the inner margin, whilst in *ocypete* the outer of these stripes is curved basad at the inner margin, the inner somewhat distad. From the interior of Surinam.

E. myncea *Cr.* Above with a small eye-spot before the apex of the forewing and a similar one at the anal angle of the hindwing. Beneath brownish grey, in the basal area of both wings 2 straight brown stripes, which are both bent basad at the inner margin of the hindwing. On the dark brown discal band, which is 3—4 mm in breadth, are placed on the forewing 3, on the hindwing 5 ocelli, all of nearly equal size, measuring 2—2½ mm in diameter and standing in a straight row, all black with red-yellow ring and silvery blue double pupil. At the margin a brown submarginal stripe and 2 fine marginal lines. 43 mm. From Surinam.

E. thobici *Capr.* is placed by its author as a separate species near to *myncea* and the following differences are given. The two brown transverse stripes in the basal half of the *under surface* are curved and enclose a band, which is somewhat darker than the rest of the ground-colour. Of the three large eye-spots on the forewing of *myncea* the first is scarcely perceptible and the other 2 are almost entirely obsolete. Of the 5 eye-spots of the hindwing the first, second and fifth are very distinct, the last-named somewhat larger, the other two indistinct. All else as in *myncea*. 38 mm. From the province of Rio de Janeiro.

E. nerita *Capr.* Likewise placed by its author in the *myncea* group, which species the wings resemble *nerita*. above except that the brown is darker. In the median area the transverse lines of the under surface show through and on the hindwing the ocellus at the anal angle is present. The under surface is much lighter, the two transverse lines terminate suddenly at the inner margin and are yellow-brown bordered with dark brown. The submarginal line is lunulate and is likewise yellow-brown bordered with dark brown. 3 almost invisible eye-spots on the forewing before the apex, on the other hand on the hindwing 6 distinct ones, the first two

and the fifth large, the others small, the sixth without pupil. 37 mm. Province of Rio de Janeiro. This species appears to belong to quite another group.

labe.

E. labe Btlr. Above brown, the forewing with round black spot before the apex, hindwing with black, red-yellow-ringed eye-spot with double silvery pupil, two brown marginal lines and a somewhat widened, undulate submarginal line. Beneath brownish white, 2 straight red-brown stripes across both wings, in the disc of the forewing a large reddish yellow spot, before the apex a black ocellus with red-yellow border and double silvery pupil, on the hindwing 5 eye-spots, of which 2 are larger and like the one on the forewing, the others smaller and brown instead of black. The submarginal line is double and close to the anal angle of the hindwing runs out into a quadrate light rust-red spot. *labe* is distinguished by this spot from the following form. 43 mm. Flies in low-lying districts of Mexico, Guatemala, Honduras, Nicaragua, Costa Rica, Panama and Colombia. — **confusa** Stgr. (47 b) is a form of *labe* which varies very much in size (34—46 mm.), but only differs in that the light rust-red spot at the anal angle on the underside of the hindwing is not present and on the upperside of the same wing there are indistinct, obscure dark brown spots in cellules 3 to 5. Its area of distribution is about the same as in *labe*, but in South America *confusa* extends as far south as Ecuador. It is also commoner than *labe*.

palladia.

E. palladia Btlr. (47 b). Above brown, 2 dark brown stripes in the basal half, 2 marginal and an undulate submarginal line, an eye-spot at the apex of the forewing and one at the anal angle of the hindwing with double pupil. Beneath white, 2 median bands, 2 marginal and an undulate submarginal line brown, the proximal lines at the anal angle of the hindwing broader and yellow. Forewing with 3 eye-spots ringed with yellow and brown before the apex, some silver dots and below them a rather large red-yellow spot. Hindwing with 5 eye-spots, the first small and black, the second and fifth large and black, the others brown, all with silver double pupils; in addition a small indistinct ocellus close to the inner angle. From Tapajos, Amazons, Anariver.

terrestris.

E. terrestris Btlr. (47 b). Above brown with 2 dark brown median bands, a submarginal and 2 marginal lines, at the anal angle of the hindwing an eye-spot with white pupil and yellow-brown ring. Beneath brownish grey with 2 red-brown median bands. Forewing with the usual apical eye-spot and 2 silvery spots below it. Hindwing with 5 eye-shaped spots, the first, second and fifth black with yellow ring and double silvery pupil, the silver dot of the others is elongated and bordered with orange-yellow. Surinam, Amazons, Matto Grosso (Cuyaba).

moneta.

E. moneta spec. nov. (47 b). Above olive-brown, with 3 parallel marginal lines on both wings. A small black eye-spot with white pupil and red-yellow ring before the apex of the forewing, a somewhat larger one with silvery double pupil at the anal angle of the hindwing and an indistinct one without pupil and with a brown ring in cellule 5 of this wing. A slight indication of a dark band traverses both wings. Beneath white-grey, with 2 straight parallel brown bands through the middle, the proximal narrower, the distal broader, the latter somewhat washed-out at the proximal side. Before the apex of the forewing a black eye-spot with 2 distally placed silvery pupils just above it and thick silver spots one above the other, just below it 4 similar silver spots in a straight row. Then follows a large reddish-yellow spot. On the hindwing there are two large black ocelli with double silvery pupils (oblique in the anterior ocellus) and red-yellow and dark brown rings. Between these eye-spots 2 large heart-shaped silver spots and close to the costal margin 2 further silver spots, which are similar to those on the forewing. The submarginal line of this species has one peculiarity which does not occur in any of the preceding. It consists of small arcs, 2 placed in each cellule, the convexity distally directed and the points proximally. In this the species resembles the following *penelope*. From Cayenne.

penelope.

E. penelope F. (= *clarissa* Cr.) (47 b). Above yellow-brown with 2 dark brown median bands, 2 marginal lines, finely dentate submarginal line, an eye-spot on the forewing before the apex, in the ♂ without, in the ♀ with silvery pupil. Hindwing in ♂ and ♀ with a similar eye-spot with double silvery pupil at the anal angle and an obscure eye-spot at the apex. On the brownish grey under surface the species is distinguished by having the submarginal line as finely dentate as in the preceding species (*moneta*) and at the proximal side of this line a stripe 2—3 mm. in breadth, sprinkled over with a number of scattered dark brown scales. On the forewing 1 eye-spot, on the hindwing 2 with double silvery pupils and several silvery spots. Brazil, Amazons, Surinam. — **pytheus** Möschl. is a form similar to *penelope* with only one light-yellow-bordered eye-spot at the anal angle of the hindwing, the brown discal band on the underside of the forewing extending nearly to the inner margin, the submarginal line with shallower arcs and the brown dots wanting. From Paramaribo (Surinam).

similis.

E. similis Btlr. The form of this species figured by GODMAN and SALVIN in the Brit. Centr. Am. is regarded as the type, BUTLER having mixed 2 forms in his original description. 40 mm. On the under surface the ground-colour is light brown as far as the second transverse line behind the middle, marginal area whitish grey traversed by a light brown discal band, on which in cellule 2 of the hindwing are placed a black eye-spot

with a yellow ring and a black spot above it. There are no other ocelli. Two fine brown marginal and an undulate submarginal line. From Mexico and Guatemala (! Nicaragua). — *themis* Btlr. is a very similar form, in which the discal band on the underside of the hindwing is quite faint, so that the eye-spots, of which there are 4 on the forewing and 5 on the hindwing, stand out distinctly. They have all yellow iris and double blue pupils, the second and fifth on the hindwing are black and larger than the others, in addition there is a very small sixth eye-spot close to the inner margin of the hindwing beside the first median band. Of the three approximated marginal lines the middle one is somewhat thickened near the inner margin. Mexico, Guatemala, Honduras, Nicaragua, Panama, Colombia, Venezuela, Trinidad. — *undina* Btlr. (47 b) is a form of *similis* in which the inner of the two marginal lines on the upperside of the hindwing is twice as broad as the outer. Between the two is placed a lighter line. The submarginal line is somewhat separated. A black eye-spot with white double pupil and yellow ring in cellule 2. On the under surface of the hindwing the dark dusting on the inner submarginal line is strongly expressed, especially near the inner angle. The brown discal band is distinct and shows on the forewing 1, on the hindwing 5 ocelli. 40—42 mm. From Mexico.

E. cleophes Godm. & Salv. Above grey-brown with 2 broad, brown median bands, an undulate submarginal and 2 marginal lines, a black eye-spot with yellow ring and white double pupil before the apex of the forewing, a similar one at the anal angle of the hindwing and a round red-yellow spot between medians 1 and 2 in the disc of the forewing. Beneath the basal area is light grey with 2 reddish grey transverse lines; marginal area almost white with the same eye-spots and red-yellow spot as above, but with a similar eye-spot also in cellule 5 on the hindwing. Between and beside the eye-spots silver dots. 38 mm. Mexico (Acaguizotla, Tierra Colorada and Dos Caminos in Guerrero).

E. castrensis Schaus (47 c). Approaches *undina*. ♀ above brown with 2 marginal lines, a submarginal and 2 median lines, of which the proximal one may also be absent. Hindwing with a black dot at the apex, 2 ocelli at the anal angle, black with white pupil and yellow ring, the larger before vein 2, the smaller behind it. Beneath brownish fawn-coloured, the lines darker than above, forewing with an eye-spot and several brown rings which contain scattered yellow scales. Hindwing in the disc whitish with two larger ocelli in cellules 2 and 5, three smaller ones in cellules 1 c, 3 and 6, and also two placed obliquely and close together in cellule 4. The ♂ is darker, the black dot at the costal margin of the hindwing above is absent. On the under surface the forewing has only a black dot in cellule 5 and on the hindwing instead of the eye-spots in cellules 3 and 4 there are lilac spots with brown bordering. From Brazil: St. Leopoldina and Castro (Parana).

E. usitata Btlr. (47 A). Above brown with a dark, straight line behind the middle and 3 marginal lines. Forewing in the ♂ without, in the ♀ with a small eye-spot before the apex, hindwing with 2 eye-spots, black with yellow ring and double white pupil, the larger in cellule 2, the smaller in cellule 3. Under surface lighter than above, with 2 transverse lines through the middle, the forewing with silvery dots below the eye-spot, hindwing with 5 ocelli, the first 2 and the last black with double white pupil (only that of the second is single), the others brownish grey with silvery pupil, but all placed in ochre-yellow rings, surrounded with brown. Venezuela. — *pietria* Btlr. is a form of *usitata*, which on the upper surface has only one eye-spot at the anal angle of the hindwing and in which the median lines on both surfaces are strongly curved basad before the inner margin of the hindwing. From Mexico, Guatemala, Honduras, Nicaragua, Costa Rica, Panama. — *pompilia* Fldr. (47 c), a further form of *usitata*, which GODMAN and SALVIN in the Biol. Centr. Amer. state is synonymous with *pietria*, differs according to our figure drawn from the type in ROTHSCHILD's collection in that the median line of the hindwing on both surfaces runs straight to the inner margin; moreover this figure shows at the costal margin of the hindwing above 2 eye-spots, which BUTLER does not mention in his description of *pietria*. From Colombia and Mexico. — *thelete* Snell. is likewise a form of *usitata*, on the under surface quite similar to the type-form, except that the silver dots below the eye-spot on the forewing are absent. Above *thelete* is confusingly like our figure of *pompilia* Fldr., as in addition to the anal ocellus it possesses the same 2 eye-spots at the apex of the hindwing, only somewhat larger. From the island of Curaçao.

E. austera Btlr. Forewing above olive-brown, with a black eye-spot with silvery double pupil and yellow ring before the apex. Hindwing with 2 similar ocelli at the anal angle, the outer one larger; in the middle a brown curved band, on the margin a brownish yellow terminal line. Beneath grey, before the middle a narrow, behind the middle a broad yellow-brown band across both wings. Then follows in the disc an ochre-yellow band, in which is placed on the forewing one eye-spot as above, on the hindwing 5, the second and fifth black with white pupils and yellow and outer dark brown ring, the others composed of silvery spots margined with ochre-yellow. The margin brown with an ochre-yellow marginal line. 42 mm. From Bogotá.

E. divergens Btlr. (47 c). Above olive-brown with three dark marginal lines. The other bands and the eye-spots of the under surface show through faintly above. Under surface lighter with 2 rust-coloured, brown-edged median bands, of which the outer one on the forewing is curved strongly distad at the inner margin. On the forewing 1, on the hindwing 5 ocelli, some of which are black with silvery double pupil and some silvery

with brown bordering, but all are surrounded by ochre-yellow rings. In the ♀ there is further a small eye-spot in cellule 2 of the forewing. From Surinam and the Rio Negro (Amazons).

eurytus.

E. eurytus *F.* (= *eurytris F.*, *eurythris Godt.*, *cymela Cr.*) (47 c). This species is rather common in North America and is easy to recognize by the 2 eye-spots which are placed on the upperside of both wings, of which only the anterior one on the hindwing is less developed in the ♂♂, and may also be absent. In the ♀ there is sometimes on the hindwing a 3rd smaller ocellus between median and submedian. On the light grey under surface are placed on the forewing 2, on the hindwing 4 eye-spots with double silvery pupils and between them further silver dots. — The egg is higher in proportion to its breadth than that of *E. cornelius*, to which it is otherwise fairly similar. The full-grown larva, according to BOISDUVAL and LECANTE, is green with 5 white longitudinal stripes (1 dorsal stripe and 2 at each side); according to HOLLAND it is in its earlier stages yellow-brown with a lighter silky stripe and brown spiracles. It lives on grasses. The pupa is light brown with 2 rows of dark dorsal dots, a white line at each side and white bordering to the wing-cases. It is suspended from grass-stems. The butterfly is distributed in North America from Canada through the United States to Nebraska, Kansas and Texas.

periphas.

E. periphas *Godt.* (47 c). Distinguished from *eurytus* by having only one eye-spot on the upperside of both wings and the underside of the forewing, on the forewing before the apex, on the hindwing before the anal angle. But examples also occur in which on the hindwing above a 2nd very small eye-spot is present at the anal angle. Beneath there are 3 ocelli on the hindwing and between them some fine silvery dots. The pupils of all the eye-spots are much smaller than in *eurytus*. From Brazil and Uruguay.

ocelloides.

E. ocelloides *Schaus* (47 c). Similar to the preceding species, but considerably smaller. Wings more rounded and above lighter. Ground-colour brownish grey, hence the deep black eye-spots stand out more distinctly. Above with one ocellus on the forewing before the apex and one on the hindwing before the anal angle, sometimes two in the ♀. On the under surface the species is at once distinguishable from *periphas* by the course of the brown transverse line behind the middle of both wings. Whilst in *periphas* this line is fairly straight and runs parallel with the distal margin, in *ocelloides* it is curved several times and on the forewing runs obliquely to the inner angle. Ypisanga, São Paulo, Castro in Parana (Brazil).

biocellata.

E. biocellata *Godm.* (47 d). Above brown with black, white-pupilled double ocellus in red-yellow ring, the hindwing without eye-spots. Beneath the forewing somewhat lighter, the eye-spot as above, but surrounded further by 2 brown lines, of which the outer one extends in a large curve nearly to the anal angle. The distal half of the hindwing is white-grey and traversed by a darker band, which is intersected with white on the veins. From Bolivia (Tanampaya) at about 2000 m.

rubricata.

E. rubricata *Edw.* Above brown, forewing with a large rust-red spot between the median veins and a black eye-spot with red-yellow ring and white pupil before the apex, hindwing with a similar eye-spot at the anal angle. Both wings with 3 dark brown marginal lines. On the under surface the forewing is grey-brown and the basal area bright rust-red, ocelli and marginal lines as above, a red stripe running from the costa to the inner margin, two silvery blue double pupils placed below the eye-spot. Hindwing with a brown stripe, proximally margined with light grey, which runs from the costa to the inner margin, and a row of 5 eye-spots before the margin, the first large, the others indistinct, but indicated by silver spots. 35 mm. From Texas, Mexico (North Sonora), Guatemala.

pellonia.

E. pellonia *Godm.* Similar to *rubricata*. Above brown, forewing in the middle reddish, before the apex a black ocellus with white pupil, red-yellow ring and outer dark brown bordering, at the edge of this a further white dot. In addition a light brownish crescent basally to the ocellus and beside it a dark brown dentate transverse line, which runs obliquely distad to the inner angle and is continued also in a large curve across the entire hindwing. A dentate submarginal and 2 continuous marginal lines on both wings. Beneath as above, but the brown oblique line and the crescent on the forewing are absent, on the other hand on the hindwing a third dentate transverse line is present in the basal area. In this species there are no eye-spots on the hindwing either above or beneath. 42 mm. From Mexico (Milpas and Ciudad in Durango; Bolaños in Jalisco, Chapala).

lethe.

E. lethe *Btlr.* Above dark brown with two marginal lines, hindwing with undulate discal line and a black anal eye-spot. Beneath much lighter, with 2 dark median lines, the proximal angled, the distal undulate; marginal lines as above. Forewing with 2 ocelli in cellules 2 and 5, which are black with white pupils and yellow rings. Hindwing with 2 similar eye-spots in the same cellules and also 2 smaller ones close to the anal angle, in addition with 2 brown eye-shaped dots between the ocelli. 36 mm. From Venezuela.

argante.

E. argante *Cr.* (= *argulus Godt.*). Above brown with 3 dark brown parallel marginal lines and a white line between the two distal dark lines. Under surface lighter, the white line with a silvery gloss, the other marginal lines as above, in addition 2 brown lines through the middle of both wings, on the hindwing almost straight, on the forewing diverging anteriorly. On the forewing 4 eye-spots in a straight row, on the hindwing 5 in an angular row, some of them bi-pupilled. 40 mm. From Surinam.

E. maepius *Godt.* (47 d). Above brown with 2 marginal lines and a dentate submarginal at some distance from them. On the hindwing with a whitish line between the marginal lines. Forewing with 2 dark brown dots in cellules 2 and 5, hindwing with 3 ocelli, a large one in cellule 2 and two small in cellules 3 and 4. All black with yellow ring, the posterior 2 with white pupils. Under surface lighter with 2 darker lines through the middle. Forewing with 4 small eye-spots, hindwing with 5 ocelli, of which the posterior 4 are larger, some black and some brown, all with double silvery pupils and yellow rings. From Guiana and Brazil. *maepius.*

E. erigone *Btlr.* (47 d). Above olive-brown with dark line behind the middle and 3 marginal lines. Forewing without eye-spots, hindwing with 5 black, yellow-ringed ocelli, of which the 4th is large and blue-pupilled, the 5th small with silvery pupil, the 2nd indistinct. Under surface lighter with 2 brown median lines, angled at the inner margin of the hindwing, and 3 marginal lines (the proximal one undulate), apex of the forewing brownish yellow with a brown band and 3 eye-spots in yellow rings (the lowest larger and with 2 blue pupils). From São Paulo in Brazil, Peru. — **probata** *form. nov.* (47 d). Similar to *erigone*, but above with only a black dot at the anal angle of the hindwing in place of the ocelli. The under surface agrees entirely with *erigone*. From the Mapiri. — **proba** *form. nov.* (47 d). Likewise similar to *erigone*. On the upper surface there is only one black eye-spot, with red-yellow ring and double silvery white pupil, placed at the anal angle of the hindwing. On the under surface the forewing has only one eye-spot and instead of the 2 lower ocelli of *erigone* there are 3 small silver dots. The silvery pupils in the eye-spots in cellules 3 and 4 on the hindwing are prolonged into silvery streaks. The distal of the two dark brown median stripes is somewhat broader than in *erigone*. Peru. *erigone.* *probata.* *proba.*

E. argyropsila *Btlr.* Above brown with 3 marginal lines, of which the proximal is undulate. Forewing with small black dot at the inner angle, hindwing with 3 black ocelli in ochre-yellow rings, the middle one large and with violet pupil. Beneath yellowish brown with 2 darker median lines, of which the distal forms a tooth in the middle of the hindwing, with 3 marginal lines. Forewing with 4, hindwing with 5 yellow-ringed eye-spots, some black with silvery double pupils, the others brown with violet single pupils. 38 mm. From Ega (Amazons). — **nausiaca** *Möschl.* Similar to *argyropsila*, but the forewing above with 2, the hindwing with 5—6 eye-spots, all ringed with red-yellow, but mostly blind, only those in cellules 2 and 3 having silvery pupils. Beneath like *argyropsila* in the number of the ocelli, but both the median bands are basally curved before the inner margin of the hindwing, and the tooth of the distal median line in the middle of the hindwing is wanting. From Paramaribo and the interior of Surinam. *argyropsila.* *nausiaca.*

E. crantor *F.* is a doubtful species for America. According to FABRICIUS the upper surface is brown, the forewing without spots, hindwing with a black eye-spot with double pupil. Beneath lighter, with darker bands, forewing with 2 eye-spots, hindwing with 5, of which the 1st and 4th are black with double pupil, the 3rd and 5th blind. FABRICIUS gives the size as the same as that of the Indian *Mycalesis mineus* *L.*, which measures 44—46 mm. As locality he mentions India. DONOVAN in his *Insects of India* figures under the name *crantor* a species which agrees with that of FABRICIUS in the number of eye-spots, but not in the number of pupils. GODART copies FABRICIUS' description and adds: „From Brazil.“ WESTWOOD in *Genera Diurnal Lepid.* gives as locality Brazil, Pernambuco and Honduras and mentions that the species is in the British Museum, which according to BUTLER (*Proc. Zool. Soc.* 1866, p. 467) is not correct. GODMAN and SALVIN, however, regarded the Honduras examples referred to by WESTWOOD as belonging to *E. labe* *Btlr.* The figure in DONOVAN is similar in the scheme of markings to the following *ocnus*, but the ground-colour of the underside is more rust-red in *crantor*. *crantor.*

E. ocnus *Btlr.* (47 d). Above brown with 3 dark marginal lines, of which on the forewing only the middle one, on the hindwing all three are undulate. At the anal angle of the hindwing a black patch bordered with red-yellow. Beneath lighter, somewhat inclined to violet, with 2 reddish brown median bands, of which the proximal is directed distad at the costa of the forewing, 3 undulate marginal lines; forewing with 1 to 3 small eye-spots before the apex on a brown band, hindwing with 5 eye-spots, the 2nd and 5th large with silvery double pupils, the first the same, but small, the others red-yellow marked with thick silver spots, all margined with brown. From Tapajos (Amazons). — **opima** *form. nov.* (47 d) is a form of *ocnus* which differs on the underside of the hindwing in the 3rd and 4th eye-spots having a brown dot in the middle instead of the silver spots and on the upperside in the dark patch not being bordered with red-yellow. From Jurua. — **pallema** *Schaus* is a further form of *ocnus*, the upper surface altogether without eye-spots or dark patches, but beneath quite similar to the type-form. From Peru. *ocnus.*

E. eriphule *Btlr.* Above brown with 3 dark brown undulate lines at the margin and an indistinct dot at the anal angle of the hindwing. Beneath lighter with a thin brown line before the middle, a broader one beyond the middle, the latter broadly bordered distally with light violet and angled at the inner margin of the hindwing; 3 black marginal lines. Forewing without eye-spots, hindwing with 5, ringed with red-yellow, the first 2 and the last black with silvery pupils, the others with thick, oval, silvery dots. 37 mm. From Pernambuco (Brazil). *eriphule.*

E. electra *Btlr.* Dark brown with 3 black marginal lines and a black anal eye-spot with brown ring and blue pupil. Beneath somewhat lighter with the same marginal lines. Forewing with an oblique transverse *electra.*

line behind the middle and without eye-spots, hindwing with 2 median lines and 5 yellow-ringed ocelli, the first 2 and the last black, the others brown, the first 2 with single, the last 3 with double lustrous blue pupils. The ♀ has beneath before the apex of the forewing a yellow dot and below it one larger and 2 smaller, obscure eye-spots. 42 mm. Bahia.

variabilis. **E. variabilis** Btlr. Above olive-brown with lighter fringes, 2 dark marginal lines and an undulate submarginal line at some distance from them. Forewing with a faint band behind the middle. Hindwing with 2 black, brown-bordered eye-spots before the anal angle, the upper and larger has 2, the lower only one pupil. On the lighter under surface the forewing towards the apex is sprinkled with brown, with 2 widely separated median lines. The 3 marginal lines as above, without ocelli. Hindwing somewhat inclining to violet, at the base sprinkled with brown, with 2 median lines, the distal one forming an angle in the middle and with 6 ochre-yellow-ringed eye-spots, of which the 3rd is indistinct, the rest some black, some brown and for the most part with double pupils. Aberrations occur with smaller eye-spots. 45 mm. From Brazil (Pernambuco, Rio de Janeiro).

urbana. **E. urbana** Btlr. (47 e). Above olive-brown, an undulate submarginal and 2 marginal lines darker, between the latter at the anal angle of the hindwing a brick-coloured line, beside it 2 oval black eye-spots, the distal one in cellule 2 twice as large as the proximal, both with brick-coloured rings and silvery pupils. The under surface is sprinkled with dark brown, the 2 rust-coloured median lines diverge towards the costa of the forewing, but run parallel on the hindwing, the proximal forms a short angle on the forewing, the distal on the hindwing. Forewing with one or 2 blind eye-spots, hindwing with 6 eye-spots, of which the 2nd and the last 2 are darker and larger than the rest, but all have silvery pupils. From Colombia and Paraguay.

affinis. **E. affinis** Btlr. Above pale brown with 3 dark marginal lines, between which on the hindwing is placed an ochre-yellow line. A black, blue-pupilled and yellow-ringed ocellus at the anal angle of the hindwing. Under surface ochreous with 2 brown median lines, the proximal straight, the distal on the forewing curved distad at the costal margin, but on the hindwing uniting at the inner margin with the partly angled, partly undulate submarginal line. In the marginal area a brown band, on which in the forewing are placed 3, in the hindwing 5 ocelli, the first on the forewing, the 1st, 2nd and 5th on the hindwing black, the others brown, but all with double silvery pupils and ochre-yellow rings. 42 mm. From Rio de Janeiro, Pernambuco.

vestigiata. **E. vestigiata** Btlr. Above olive-brown, 2 median and 3 marginal lines dark brown, 2 very small ocelli with silvery pupils at the anal angle of the hindwing. Beneath much lighter, sprinkled with a number of brown atoms, 2 narrow, yellow, fairly straight median stripes bordered with black at both sides, which only form an angle at the inner margin of the hindwing. The strongly dentate submarginal line is similarly coloured on the hindwing, black on the forewing. Forewing with 3 eye-spots, the first, with yellow ring and silver pupil, before the apex, the others indistinct. Hindwing with 6 eye-spots, the 2nd and 5th black with double silvery pupils, the two middle ones brown and dusted with silver scales, the two outer only small, but all ringed with yellow and brown. 40 mm. From Minas Geraes.

ochracea. **E. ochracea** Btlr. (47 e). Above unicolorous olive-brown, distal margin somewhat darker. Beneath yellowish brown, finely dusted with brown, with 2 straight brown median lines, diverging anteriorly, a broad, light ochre-yellow band and a washed-out brownish one. On the latter are placed on the forewing 2, on the hindwing 6 small black eye-shaped spots in somewhat lighter rings, the 2nd and 5th finely pupilled with white. From Ypisanga (Brazil), coll. LÜDERWALD.

Renata Group.

renata. **E. renata** Cr. Above brown with a small eye-shaped spot at the hinder angle of the forewing in cellule 2. Beneath likewise brown, finely striated all over with dark brown, with 2 straight dark brown median lines, an undulate submarginal and 2 straight marginal lines, a small eye-spot before the apex of the forewing and 4 eye-spots on the hindwing, 2 at the apex in cellules 5 and 6 and 2 at the inner angle in cellules 1 b and 2. The eye-spot in cellule 2 measures $3\frac{1}{2}$ mm., that in cellule 5 $2\frac{1}{2}$ mm. in diameter, the others are smaller, all are black, with white pupils (the one in cellule 5 bi-pupilled) and bright, broad red-yellow rings. From Surinam. This species appears to have been hitherto misidentified, for the figures of *renata* in the Biol. Centr. Amer. and in STAUDINGER Exot. Tagf. do not agree with CRAMER's figure and text. In these figures the eye-spot on the upper surface of the forewing is wanting, of which CRAMER mentions the position very exactly in his description, and the under surface is much lighter, with the ocelli much smaller, than in CRAMER and ringed with pale yellow. I retain for this form, which must be separated from *renata*, the name **disaffecta** Btlr. (47 d). It has no eye-spot on the upperside of the forewing, but on the hindwing a distinct one with red-yellow ring and white pupil. The under surface is much lighter than the upper, especially in the marginal area. The ocelli are much smaller and ringed with pale yellow, and vary in number from 3 to 6. The first and the two middle ones are often very indistinct or entirely absent. Guatemala, Nicaragua, Costa Rica, Panama, Colombia, Venezuela, *remissa*. Amazons. — **remissa** form. nov. (47 e) is a form of the preceding, in which the eye-spot on the upper surface

at the anal angle of the hindwing has a double white pupil. On the under surface the two somewhat broader median stripes diverge towards the costal angle of the forewing, on the hindwing they run parallel, but bend round proximad at the inner margin, forming 2 teeth. Forewing with an apical ocellus, black with red-yellow ring and white pupil. Hindwing with 6 eye-spots, the first 2 and the last 2 like the one on the forewing except that the first is brown instead of black, the 2 middle ones yellowish brown. From Chiriquí. — *peloria* Fldr. *peloria*. (47 e) is a further form of *renata*, in which the first transverse stripe on the forewing is strongly curved on the under surface and the other is proximally shaded with yellowish brown. According to FELDER's description the hindwing has beneath 6 eye-spots, of which the first and the two middle ones are very indistinct. Our figure is from one of FELDER's types and shows only 3 eye-spots. Venezuela.

E. mythra Stgr. *i. l.* (47 e). Above olive-brown with 2 brown marginal lines, and at some distance from them an undulate submarginal, between the former on the hindwing a whitish line and at the anal angle a small black ocellus with white pupil and red-yellow ring. Beneath brownish grey, finely irrorated with brown and with 2 straight parallel median lines and in the lighter marginal area a brown band, on which on the forewing are placed 3 rather obscure eye-spots, on the hindwing 5 small ones. The first 2 and the last on the hindwing are black, the others brown, all with double dull white pupils and surrounded by ochre-yellow and outer brown rings. Bolivia.

E. abretia Capr. (46 f). Above light olive-brown. The straight light band on the under surface shows through somewhat above, and the 3 marginal lines are also visible. Beneath there is a brown, angled line before the middle, and in the marginal area of the hindwing a row of 6 fine black dots, the first with an extremely fine white pupil. Brazil (Valença, Petropolis). Flies in September.

E. angularis Btlr. (47 e). Differs somewhat in the shape of the wings. The apex of the forewing is obtuse. The hindwing is angled at the submedian and at medians 1 and 2, the inner margin somewhat excised. Above olive-brown, marginal lines and anal spot very indistinct. Under surface yellowish grey, finely irrorated with dark brown, with 2 straight reddish brown median lines, a strongly dentate submarginal line and 2 marginal lines on both wings. Forewing with 5 scarcely visible, white, brown-bordered dots (sometimes in yellow rings). On the hindwing 6 small eye-shaped spots or dots, of which the 1st, 3rd and 4th are scarcely visible, the others distinctly black with yellow rings, the 5th somewhat larger and bi-pupilled. Minas Geraes (BUTLER), Estação Raiz da Serra (Estado São Paulo); December (LÜDERWALD).

E. punctata spec. nov. (47 e). In the shape of the wings quite similar to the preceding species, but the under surface is quite differently marked. Above olive-brown, forewing without marginal lines, only the fringes somewhat lighter. Hindwing with 2 marginal lines, the distal indistinct, the proximal darker and distinct, with an obscure submarginal line composed of large lunules. Under surface yellowish grey, with slight darker irroration. A fine, brown dentate line runs through the cell of both wings with single darker dots on the veins, in the distal half of the wings 2 broad light parallel stripes, the proximal yellowish, the distal whitish yellow. Proximally to the first stripe there is a row of fine black dots on the veins, connected by proximally directed brown lunules. A similar row of dots is placed outside the distal stripe, on which are placed the distally directed lunules of the submarginal line. These lunules likewise bear black dots in the middle of the cell. Two further rows of dots (the 4th and 5th) are placed on the almost straight marginal lines, which are only undulate in the posterior part of the hindwing. There is also a single black dot with white pupil in cellule 2 between the 2 lighter stripes. From Minas Geraes (Brazil), coll. WEYMER.

E. straminea Btlr. Forewing somewhat longer, the apex consequently more pointed than in the allied species. The distal margin of the hindwing forms an obtuse angle on vein 3. Above olive-brown, in certain lights copper-coloured, with 2 brown marginal lines, an undulate submarginal line and an indistinct anal ocellus. Beneath ochre-coloured, finely dusted with brown, in the disc pale rose-red, 2 widely separated brown median lines, the distal one proximally margined with yellowish brown, marginal lines as above, between them a yellow line. In the disc a brown band, on which are placed on the forewing 1, on the hindwing 4 eye-spots (2 at the apex and 2 at the hinder angle), all with yellow ring and glossy white pupil, sometimes double. 50 mm. From Minas Geraes (Brazil).

E. celmis Godt. (47 f). Above brown with 2 dark brown lines and a distal black line at the margin, between which the ground-colour is somewhat lighter, with a small yellow-ringed eye-spot at the anal angle, in the ♂ without, in the ♀ with pupil. Beneath brownish grey, finely irrorated with brown, with 2 angled darker lines through the middle and the 3 marginal lines as above, 1 ocellus on the forewing and 5 or 6 on the hindwing, all small, the 2nd and 3rd on the hindwing mostly indistinct, the others black with yellow ring and fine white, mostly double pupils. From Brazil, Argentina, Paraguay. Common. The species varies as regards the number of the ocelli and their distinctness, also the size ranges from 34—44 mm. — *melchiades* Btlr. is a form of *celmis* in which on the hindwing above 2 eye-spots are present at the anal angle, of which the first is 3 times as large as the last. On the under surface there are 5 small ocelli on the forewing, the 2nd somewhat larger,

and 6 on the hindwing, the 2nd and 5th being the largest and the 3rd consisting of 2 eye-spots obliquely adjoining one another. From Cordoba. — **bonariensis** *Burm.* (47 f) is a further form of *celmis*, which on the upper surface has neither eye-spots nor dots and beneath only brown rings instead of the eye-spots. From Buenos Aires.

grimon. **E. grimon** *Godt.* (47 f). Above olive-brown with undulate submarginal and 2 dark brown marginal lines, between the latter on the hindwing a whitish grey line. Beneath light brownish grey, finely dotted with brown, with 2 dentate darker lines through the middle and the 3 marginal lines as above. Forewing with 3 eye-spots, only the first distinct, the others obscure. Hindwing with 5 eye-spots, the first 2 and the last black with double white pupil, the others composed only of brown rings with ochre-yellow pupils. From Brazil.

phronius. **E. phronius** *Godt.* (47 f). Above grey-brown, with indistinct darker marginal lines and similar submarginal line, also an indistinct dark dot at the anal angle of the hindwing. Beneath yellowish grey, finely dotted with brown all over, with 2 dentate darker transverse lines through the middle, on which at each vein is placed a dark brown dot. Marginal area somewhat lighter, containing 1—4 white dots on the forewing, 4—5 on the hindwing. Sometimes some of these dots are double or present incompletely formed dark rings. St. Catharina (Brazil).

acmenis. **E. acmenis** *Hbn.* (51 b). Above black-grey. Beneath more brownish grey, sprinkled with dark brown dots. The dark brown median lines are fairly straight on the forewing, on the hindwing strongly undulate and running parallel with the distal margin. The median area enclosed by them is dark brown on the hindwing. The marginal area becomes gradually darker towards the distal margin, but shows no eye-spots or dots. The fringes light brownish. The locality of this species is unknown, for that given by HÜBNER (Baltimore) is incorrect. It resembles the preceding species, but the median band is much more strongly curved in *acmenis* and the white dots in the marginal area, as well as the dark brown dots on the median lines, are absent.

Paeon Group.

paeon. **E. paeon** *Godt.* (51 b). Margin of the hindwing obtusely dentate, in the ♂ more strongly, in the ♀ more weakly. Above grey-brown, with an undulate submarginal and 2 marginal lines dark brown. Of the latter the inner is proximally widened and on the hindwing forms crescentic spots between the veins. An undulate whitish line between these marginal lines. At the anal angle of the hindwing a small, round, dark brown spot, which in the ♀ is larger, in the ♂ smaller or absent. Beneath there are on the forewing in addition to the lines of the upper surface 2 straight median lines and a small eye-spot before the apex. The hindwing is brownish grey or brownish yellow in the basal half and at the costal margin, becoming gradually darker posteriorly, marbled all over with dark brown. Two dark brown, strongly dentate transverse stripes run from the costal to the inner margin. In the marginal area 4 small black eye-spots with double white pupils, 2 at the apex and 2 at the inner angle. Rio de Janeiro and St. Catharina. — **marmorata** *Btlr.* (47 f) is a form of *paeon* in which the under surface is much lighter and the dark brown posterior half of the hindwing in the type-form is restricted to a dark spot at the distal margin. All else as in that, hence the transverse lines stand out more distinctly. Rio de Janeiro, St. Catharina, Rio Grande do Sul.

ernestina. **E. ernestina** *spec. nov.* (47 f). Similar to *paeon*, but the shape is rounder, the distal margin but slightly undulate, not dentate, and above in addition to the anal spot of the hindwing a round black spot is present before the apex of the forewing, which is wanting in *paeon*. On the underside of the forewing the 2nd transverse stripe is not straight, but distally curved and here are placed 3 eye-spots, a black one with yellow iris and white pupil before the apex, and 2 smaller ones below it, consisting of brown rings with double, oval, silvery pupils. On the hindwing the transverse stripes are broader, the second is forked anteriorly and behind it are placed 5 eye-spots, of which those in cellules 2, 5 and 6 are black with white pupils, yellow iris and brown rings, whilst those in cellules 3 and 4 consist merely of brown rings with double, oval, silvery pupils. From Espírito Santo (Brazil).

Hermes Group.

ambigua. **E. ambigua** *Btlr.* (48 a). Above brown with 3 indistinct marginal lines, the proximal one dentate. Hindwing with ochre-yellow marginal line. Beneath lighter, the first transverse line irregular, the second curved round at the inner margin of the hindwing, the marginal lines as above. Both wings with 5 ocelli, which have brown rings and mostly double silvery pupils and on the hindwing are placed in an angular row. From Rio de Janeiro. — **modesta** *Btlr.* Similar to the preceding, somewhat larger, above brown, of the 3 marginal lines the proximal one is undulate. Beneath brownish grey with 2 oblique, but fairly straight, red-brown median lines. The marginal lines as above. Forewing with 3 ochre-yellow-ringed eye-spots, of which the first has a double silvery pupil. Hindwing with 5 ocelli, which have red-yellow rings and partly single, partly double silvery pupils. From Pará and Cametá (Amazons). — **huebneri** *Btlr.* is above quite like *ambigua*, beneath the ground-colour is more brownish at the base, more grey at the apex, ochre-coloured at the hindmargin. The median transverse lines are red-brown and the first is nearly straight. On the hindwing there is a 6th small eye-spot at the anal angle. Pará. — **benedicta** *Btlr.* is similar to *huebneri*, but differs in the larger eye-spots of the

under surface, the number of which BUTLER gives as 6 for the hindwing; some of these are black and some brown, the 4 middle ones have double white pupils, but all have yellow iris and outer brown rings, and the 2nd and 5th are larger than the others (in BUTLER's figure the 6th ocellus at the inner margin is absent). On the forewing there is a similar eye-spot before the apex and 2 obscure ones below it. The median bands are chestnut-brown and diverge somewhat anteriorly. From Sarayacu (Ecuador).

E. galesus *Godt.* Above brown, unspotted. Beneath likewise brown, with 3 dark brown transverse *galesus*, lines, 2 across the middle, 1 before the margin. The outer median line shaded with violet-grey at the distal side. The marginal line is undulate and before it is placed on the hindwing a row of 5 black dots. From Brazil. Whether the butterfly figured by BUTLER (in the Journ. Linn. Soc. Zool. Vol. 13, pl. 12, fig. 12) really belongs to this species is questionable, as the hindwing bears a row of 5 light-pupilled eye-spots instead of the dots.

E. melobosis *Capr.* (46 f). Above brown with a dark brown median line on the forewing and 3 marginal *melobosis*, lines on both wings. On the somewhat lighter under surface 2 transverse lines cross both wings, the first strongly curved, the second undulate on the forewing; between the two the ground-colour is darker. In the marginal area on the forewing 4, on the hindwing 6 small eye-spots, black with glossy white pupils and yellowish brown iris. From Chapeo d'Uvas (Minas Geraes). Flies in November.

E. umbrosa *Btlr.* Above according to its author's description greenish grey (but his figure is more *umbrosa*, blue than green) with 2 grey marginal lines on the hindwing. Fringes and body brown. Beneath lighter, white-dusted, traversed by 2 median stripes, 3 brown marginal lines, forewing with a small black ocellus before the apex; hindwing with 5 yellow-ringed eye-spots, the 2nd and 5th black with white pupils, the others brown. From Ecuador.

E. undulata *Btlr.* (48 a). Above brown. Beneath lighter, dusted with grey, the 2 median lines on the *undulata*, forewing more widely separated, posteriorly strongly dentate, the submarginal lines dentate, the other marginal lines almost straight. Forewing with 4 very indistinct, hindwing with 6 distinct small eye-spots, the 2., 4. and 5. with black central dot. From Pará.

E. mitchelli *French.* Size of the preceding species. Above brown. Beneath with indistinct median *mitchelli*, and marginal lines, forewing with 4, hindwing with 6 eye-spots in a straight row, which are placed somewhat further from the distal margin than in the allied species. These eye-spots are black, with yellow rings and blue pupils. Found in the states of New Jersey (near Lake Hopateong) and Michigan.

E. maimounè *Btlr.* Dark olive-brown. Hindwing in the posterior half with black submarginal line. *maimounè*, On the under surface the forewing is sprinkled with ochre-yellow scales, the median stripes rather broad, diverging towards the costa of the forewing, in addition there is a brown streak on the discocellular of this wing. The forewing has 5 eye-spots with light yellow rings, mostly without pupils, the hindwing 6 rather large eye-spots (the 2nd measuring 4 mm. in diameter) with red-yellow and outer brown rings, some of which touch the submarginal line, and the greater part with silvery pupils. From Pebas on the Upper Amazon (Peru); Costa Rica.

E. camerta *Cr.* Above brown. Forewing before the apex with a small eye-spot with yellow ring and *camerta*, silvery pupil. Under surface of the forewing with 4, of the hindwing with 6 similar ocelli of the same size, all with silver pupils, both wings with 2 brown, parallel median lines, curved on the hindwing, and with 3 marginal lines. From Surinam. GODMAN and SALVIN indeed unite this species with *hermes*, *sosybius* and *fallax*, but do not mention in their description the silver-pupilled eye-spot on the upper surface which STOLL distinctly describes in the 4th volume of CRAMER's work. Hence I regard *camerta* as a separate species.

E. hermes *F.* (= *sosybius* *F.*, *canthe* *Hbn.*, *nana* *Möschl.*) (48 a). Above unicolorous brown, without *hermes*, markings. Forewing beneath with 3—5 eye-spots, of which sometimes only the 2nd is distinct and the others are more or less obsolete. Hindwing with 6 ocelli, the 2 middle ones indistinct, the others black with brownish yellow rings, sometimes all distinct. The species varies very much and has a wide range of distribution, from New Jersey in the United States through Mexico, Central America, Colombia and Surinam to South Brazil, but occurs everywhere in different forms. FABRICIUS in his description of *hermes* has confused different species with one another, but as BUTLER states in the Proc. Zool. Soc. 1866 that he has compared the type of *hermes* and finds it identical with *canthe* *Hbn.*, and as he further declares in the Ent. Monthly Mag. 1870, p. 251, that *sosybius* *F.* is a synonym of *hermes*, the latter name must be accepted for the type-form. The early stages have been described in detail by EDWARDS. The egg is hemispherical, flattened at the base, with slight depression at the sides; greenish white. The young larva hatches 4 days after the egg is laid; it is white, with fine hairs, after the first moult light green, with a broad dark green longitudinal stripe across the back and narrower lateral stripes; between these stripes are placed rows of small white tubercles. Head rather large, anal extremity forked. The larva moults four times. After the last moult it is emerald-green with several yellow lateral stripes. Head covered with fine, raised, yellow dots. On grass. The pupa is suspended, short and thick, at the head obtuse, green, posterior part yellow-green with some black dots and a brown stripe. The butterfly appears in 14 days. In Mexico, according to EDWARDS, there are 2 generations. — **fallax** *Fldr.* (= *atalanta* *Btlr.*) (48 a) *fallax*.

- is a form of *hermes* in which the median lines on the underside of the forewing converge towards the inner margin and on the hindwing are strongly angled. The number of eye-spots (3—5 on the forewing, 6 on the hindwing) agrees with *hermes*. From the Rio Negro, Venezuela, Pará. — **pimpla** *Fldr.* is a form likewise belonging here and only distinguished from *fallax* by the brown median lines on the underside of the forewing not converging, but diverging, towards the inner margin; the number of eye-spots is the same. From Rio Negro (Amazons).
- narapa**. — **narapa** *Schaus* is a further form of *hermes*, in which the outer median line on the underside of the forewing is distally shaded with white, and which has 4 ocelli on the forewing and 5 on the hindwing. From Castro in Parana (Brazil).
- poltya**. **E. poltya** *Prittw.* (48 a). Above grey-brown with 2 dark median lines and a short transverse streak on the discocellulars, an undulate submarginal and 2 marginal lines; the last-named 3 and the inner of the median lines are also continued on the hindwing. Between the marginal lines the ground-colour is lighter. One or two black, yellow-ringed spots at the anal angle. On the grey under surface the median lines are double and the outer one is distally accompanied by a brownish stripe, which extends from the costa of the forewing to the middle of the hindwing. Behind it 6 very small eye-spots. From Rio de Janeiro (Corcovado) and Rio Grande do Sul. — **binalinea** *Btlr.* (48 a) is a form of *poltya*, which only differs in the absence of the dark median shading at the distal side of the 2nd median line. From Venezuela and Brazil (Pernambuco).
- eous**. **E. eous** *Btlr.* (48 a). Above olive-brown with a yellow-ringed dot at the anal angle of the hindwing and 3 dark marginal lines. Beneath light grey, the transverse lines very fine, angled, at the costal margin of the forewing curved basad, the outer one distally curved in the middle of the hindwing. Before the apex of the forewing 3 or 4 white dots, partly with dark margins, hindwing with 5 small black eye-spots, of which only the 2nd and 5th measure about 1—1½ mm., the 3rd and 4th are indistinct, but all have white pupils. From Brazil (Pará, Esperito Santo), Paraguay. — **zeredatha** *Btlr.* (48 a) is a form of *eous* in which all the ocelli on the underside are very small and punctiform. From Rio de Janeiro.
- soter**. **E. soter** *Btlr.* Distal margin of the forewing almost straight, that of the hindwing undulate, the inner margin of the hindwing before the anal angle emarginate. Above olive-brown, a black spot on the transverse vein of the forewing, a straight transverse line behind the middle, a dentate submarginal line and 2 marginal lines brown, between the latter a brick-coloured line. Hindwing with 2 small eye-spots at the anal angle. Under surface reddish brown, sprinkled with dark brown, with a broad darker band, which runs from the middle of the costal margin on the forewing to the middle of the inner margin on the hindwing and is bordered at each side by a brown line. Forewing with a small silver-pupilled ocellus before the apex, hindwing with 6 small eye-spots in an irregular row, the 2nd and 5th with silvery double pupils, the 4th indistinct. Novo Friburgo (Brazil).

Phares Group.

- phares**. **E. phares** *Godt.* (48 b). Above yellowish brown with a brown line behind the middle and 3 brown marginal lines, on the forewing in the ♂ with an eye-spot before the apex, in the ♀ with 2 or more eye-spots, hindwing with 5 or 6 in both sexes, of which the 2nd and 5th are large, black with double white pupil and red-yellow ring, the others mostly obscure and indistinct. On the under surface the forewing is reddish yellow with yellowish grey marginal area, the hindwing yellowish grey with 2 brown, more or less curved median lines, the eye-spots more distinct than above and all with white, sometimes silvery pupils. Argentina (Entrerios, Cordoba), South Brazil, Venezuela. Not rare. Varies in the number of the eye-spots on the upper surface, examples occurring which above have no ocelli at all on the forewing and others which have only 2 on the hindwing. — A similar form has been described and figured by BURMEISTER under the name **spartaeus**. It has one eye-spot on the upperside of the forewing and 2 on the hindwing. The latter has on the under surface 6, the forewing 3 comparatively small eye spots, the two largest measuring little more than 1 mm. They are all black with yellow ring and white, sometimes double pupils. BURMEISTER has only described the ♀, which has an expanse of 40 mm. From Entrerios.
- pharella**. **pharella** *Btlr.* (48 d) is a smaller form of *phares*, which has an expanse of only 28 mm. Above unicolorous olive-brown without eye-spots. Under surface of the forewing ochre-yellow, with distal margin grey, and with 3 ochre-yellow-ringed eye-spots with violet pupils. Hindwing grey, the median lines almost straight, behind the distal one a whitish stripe with 4 yellow-ringed ocelli in cellules 2—5, the 2 distal ones black with white pupils, the others brown with violet pupils. From Rio de Janeiro. — **pharnaces** *form. nov.* (48 b) is a further form of *phares*, in which the brown stripes in the basal half of the hindwing beneath are darker and strongly dentate, moreover the median line on the underside of the forewing is not straight, but forms a wide curve distad. From South Brazil.
- innocentia**. **E. innocentia** *Fldr.* (48 b). One of the smallest species. Above unicolorous brown. Beneath likewise brown with 2 somewhat curved transverse lines before and behind the middle, behind the 2nd on the hindwing a light stripe, in the marginal area on the forewing 3 or 4, on the hindwing 5 or 6 ocelli, with white pupils and yellow and brown rings. From Venezuela.
- numilia**. **E. numilia** *Fldr.* (48 b). Above light brown, forewing with a straight dark transverse line behind the middle, hindwing with 2 such lines and 2 distinct eye-spots at the anal angle and 3 indistinct ones above them. Beneath yellowish grey-brown with 2 fairly straight median lines, 5 obscure eye-spots on the forewing and 6 distinct ones on the hindwing with yellow and brown rings and white pupils, the 5th somewhat larger with double pupil. From Muzo, to the north-west of Bogotá (Colombia).

Harmonia Group.

E. gulnarè *Bltr.* (48 b). Above unicolorous brown. Beneath likewise brown, only at the inner margin *gultuari*, of the forewing somewhat lighter, with 2 dark brown median bands, on the forewing nearly straight, on the hindwing somewhat curved. The submarginal line is characterized by its forming 2 small curves in each cellule on both wings, whilst in most species there is only 1 curve in each. In the number of the eye-spots and dots the two figures of this species hitherto published differ, although they are drawn from the same example. BUTLER figures on the forewing 5 eye-spots and 2 dots above them, on the hindwing 6 eye-spots, whilst GODMAN and SALVIN figure only one eye-spot on the forewing and 5 on the hindwing. All the eye-spots are without the yellow rings. The example figured here has on the forewing 3 white dots, the middle one finely margined with black, on the hindwing 5 eye-shaped, round black spots, of which only the 1st, 2nd and 5th have white pupils. BUTLER's example came from Panama (coll. SALVIN), the one figured here from Mapiri (coll. BANG-HAAS). STAUDINGER (*i. l.*) had named it *civica*.

E. jovita *Fldr.* (47 f). Above unicolorous brown. Inner angle of the hindwing obtusely produced. Beneath *jovita*, with 2 nearly straight darker median lines, the 2nd curved round basad before the inner margin of the hindwing, behind it a much lighter stripe, especially on the hindwing, and on the forewing 3—4, on the hindwing 5 ocelli, of which on the forewing the posterior one, on the hindwing the 3rd and 4th are indistinct. From Colombia (Bogotá, Rio Agna Valley). September.

E. harmonia *Bltr.* (48 b). Above likewise unicolorous brown. Under surface of the forewing brownish *harmonia*, grey, of the hindwing light grey, so that the undulate transverse lines stand out distinctly. Forewing with 4, hindwing with 5 or 6 eye-spots, of the former only the 2nd, of the latter only the first 2 and last 2 distinct. From Ecuador (Quito) and Colombia (Mount Quindiu, 2100 m.). October.

E. phineus *Bltr.* (= *eugenia* *Fldr.*) (48 b). Above unicolorous brown, beneath much darker than *har-* *phineus*. *monia*, the median stripes broader. Forewing with only one eye-spot. Hindwing with 6 ocelli, of which those in cellules 3 and 4 also stand out distinctly, all having white, some of them double pupils. From Cuzco in Peru, the Songo in Bolivia, and Venezuela.

E. calixta *Bltr.* (= *cucullixta* *Stgr. i. l.*) (48 c). Above dark olive-brown. Beneath lighter, the median stripes *calixta*, on the forewing nearly straight, diverging anteriorly, on the hindwing the outer one bicurved and before the inner margin angled. Forewing with 5 eye-spots with silver pupils and yellow rings, the 2nd larger, the 3rd and 4th small, hindwing with 6 similar eye-spots, the 2nd connected with the 3rd, the 1st, 3rd and 4th small, the 2nd large. From Bogotá. — **cucullina** *form. nov.* (48 c) is a form of *calixta* in which the eye-spots on the underside *cucullina*, of the hindwing are of almost equal size, only the first and last are smaller and the black ring of the 2nd is somewhat broader. From Choco (Colombia).

E. alcinoë *Fldr.* (48 c). Above unicolorous brown. Beneath grey-brown, the median lines nearly straight, *alcinoë*. Forewing with 4, hindwing with 5 eye-spots in a somewhat angled row, of which the first on the forewing and the 2nd and 5th on the hindwing are larger. From Colombia and Venezuela. Our figure from FELDER's type in the Tring Museum.

E. yphthimia *Fldr.* (48 c). Wings rather rounded, above brown with an eye-spot at the anal angle. Be- *yphthimia*. neath the marginal area of the hindwing is lighter than the rest of the ground-colour and the submarginal line runs almost as straight as the marginal lines. Forewing with one or more indistinct eye-spots, hindwing with 5 eye-spots of equal size with double white pupils. The ♀ has further on the upper surface 2 black blind spots on each wing. From Bahia and Bolivia. Figure from one of FELDER's types. — **pacta** *form. nov.* (48 d) is a *pacta*, form of *yphthimia* which differs in the somewhat undulate distal margin of the hindwing, and in the larger and more numerous eye-spots on the under surface. Moreover the pupils in these eye-spots are single, but much larger, and some of them silvery. The forewing has 4, the hindwing 6 eye-spots, the 2nd and 5th larger than the rest. From Cuyaba in Matto Grosso (Brazil). Coll. BANG-HAAS.

E. nebulosa *Bltr.* (48 d). Above olive-brown, without eye-spots, only with the 3 marginal lines. Beneath *nebulosa*, little lighter, the median lines on the forewing fairly straight, on the hindwing finely denticulate, the former with one small eye-spot, the latter with 5 ocelli, all with white pupils and yellow rings, the 2nd and 5th large and black, the rest brown. From Venezuela, Peru, Bolivia.

E. perfuscata *Bltr.* (48 d). Above likewise unicolorous olive-brown only with the 3 darker marginal *perfuscata*, lines. Beneath somewhat lighter and somewhat tinged with violet, the median lines nearly straight, only the distal one curved round basad at the inner margin of the hindwing. Marginal area somewhat lighter, on the forewing 4, on the hindwing 5 ocelli, some brown, others black, some with one, others with 2 pupils. From Pará and Esperito Santo (Brazil).

E. sylvina *Fldr.* (48 c). Upper surface brown, the submarginal line placed somewhat further from the *sylvina*, marginal lines than usual. Beneath somewhat dusted with violet, the transverse lines very fine, the submarginal line as above, strongly dentate, the forewing with one, the hindwing with 5 small eye-spots, the 3rd and 4th indistinct. From Bahia (Brazil) and Cuzco in Peru. Figure from FELDER's type.

E. numeria *Fldr.* (= *historic* *Stgr. i. l.*) (48 c). A small species. Above brown, beneath little lighter *numeria*.

with 2 straight, fine dark brown median lines. The marginal area lighter with the 3 marginal lines and 5 ocelli on each wing, all small and of uniform size, yellowish brown with small black centres finely pupilled with white and surrounded by brown rings. From Bahia. Figure from FELDER's type.

manasses. **E. manasses** *Fldr.* (48 c). Above brown, hindwing with 2 black eye-spots in red-yellow rings and with pale-coloured pupils, the outer large, a third, indistinct, above them. Under surface dark to the 2nd straight transverse line, marginal area lighter, especially on the hindwing. Forewing without eye-spots, hindwing with 6 small ones in an angled row. From Bahia. Figure from FELDER's type.

mimas. **E. mimas** *Godm.* (48 d). A larger species. Similar to the preceding, but the wings broader and the distal margin of the forewing less rounded, also the hindwing with somewhat stronger excisions. Above brown with 2 eye-spots at the anal angle of the hindwing, the larger in cellule 2 with double white pupil and yellow ring, the smaller in cellule 1c with single pupil. Beneath yellowish brown, strongly sprinkled with dark brown; 2 straight brown median lines, enclosing a darker median area. In the lighter marginal area are placed on the hindwing 6 ocelli, mostly bi-pupilled, the 3rd removed somewhat proximad and occasionally double. From Corvico in Bolivia.

oreba. **E. oreba** *Btlr.* Size of the preceding species, the forewing more pointed, above unicolorous brown, without eye-spots. Beneath somewhat lighter, distally dusted with grey, the dark brown median lines on the forewing somewhat curved, as also the inner line on the hindwing, while the outer forms a short angle on each vein and crosses the extremity of the cell. The submarginal line on both wings forms 2 small lunules in each cellule with their concavity towards the base (as is also the case in *gularè*). On each wing 5 eye-spots, the 1st, 2nd and 5th black with yellow iris, the others ochre-yellow, all with white pupils. In addition there are at the anal angle of the hindwing two very indistinct eye-spots in cellule 1 b. The locality of this species is unknown. BUTLER described it from an example in coll. KADEN (now Mus. DRUCE).

eremita. **E. eremita** *spec. nov.* (48 d) is like *oreba* *Btlr.* in size and shape, but shows essential differences in the scheme of markings on the under surface. The ground-colour of the underside is darker, less sprinkled with grey. The 2nd transverse line does not intersect the end of the cell on the hindwing, but passes round it at some distance in a curve, forming a proximally concave crescent in each cellule. The submarginal line in its whole course on both wings likewise forms only one crescent in each cellule, whilst in *oreba* it forms two in each. The forewing has 4, the hindwing 5 ocelli. — From Marcapata in Peru (coll. BANG-HAAS).

obscura. **E. obscura** *Btlr.* Above unicolorous brown, beneath likewise brown, the transverse line beyond the middle is irregularly curved and dentate, at the inner margin of the hindwing it unites with the submarginal line, which forms only one crescent in each cellule. On the forewing there are 3 small white dots before the apex, on the hindwing 5 eye-spots, the 2nd and 5th black with yellow iris and white pupil, the rest entirely filled up with brownish ochre-yellow and of a reniform shape. Of these only the one placed at the costal margin has a white pupil. Size 53 mm. From Bolivia.

Necys Group.

necys. **E. necys** *Godt.* (= *vastata* *Btlr.*, *Tayg. neonympha* *Fldr.*) (48 d). Wings rounded. Above unicolorous brown. Beneath finely dotted with darker, with strongly dentate median lines, a similar submarginal line and 5 or 6 fine white dots on each wing in the marginal area. From Brazil (Rio Grande), Colombia (Rio Agna

rustica. Valley, 1600 m., Quindiu Pass, 2500 m.). — **rustica** *Btlr.* (? = *Tayg. anophthalma* *Fldr.*) (47 g). A form of *necys* in which on the underside of the forewing there is a small white spot beside the first white dot and the other white dots on the forewing are absent, but all are present on the hindwing. From Bolivia and Huamboya in Ecuador. — In **fabiana** *Btlr.* the median lines are not dentate, but only weakly curved and the white spot at the costal margin of the forewing of *rustica* is wanting. From Macabe in the province of Rio de Janeiro.

polyphemus. **E. polyphemus** *Btlr.* (47 g). Above unicolorous brown, beneath but little lighter, the outer median line is on the forewing twice, on the hindwing several times angularly bent proximad. Forewing with 3 small white dots before the apex; hindwing with 4 or 5 extremely small and one large, distinct black eye-spot before the anal angle, the latter and some of the former with white pupils. From Colombia (Bogotá, Carmen), Bolivia. — **cy-clops** *Btlr.* (= *umbracea* *Btlr.*) (47 g) is a form of *polyphemus*, in which on the under surface the outer median line of the forewing is not angled, but forms only a slight curve. Moreover on the hindwing the single small lunules of this line run in a straighter direction. The black ring of the eye-spot in cellule 2 of the hindwing is very broad. From Panama, Costa Rica, Peru, Ecuador.

quantius. **E. quantius** *Godt.* (= *morima* *Schaus*) (47 g). Above unicolorous brown. Beneath likewise brown, with 2 darker almost straight parallel transverse lines across the middle of both wings, enclosing a median area somewhat dusted with violet-grey. Submarginal line on both wings strongly undulate, the distal margin dusted with violet-grey. 6 fine yellowish white dots on the hindwing and 4 or 5, somewhat finer still, on the fore-

wing. From South Brazil (Parana). — *stelligera* Btlr. is a form of *quantius* in which the anterior white dot on the underside of the hindwing is somewhat larger. From Parana and Esperito Santo.

E. eusebia Btlr. (47 g). Above olive-brown, with the distal margin darker. Beneath lighter in the marginal area. Of the median lines only the anterior half of the outer line is visible on the forewing, on the hindwing the inner median line is almost straight, the outer undulate. Before the apex of the forewing a white dot surrounded with dark. On the hindwing 5 or 6 similar eye-shaped dots. The submarginal line forms shallow lunules on the forewing, deeper ones on the hindwing. From Colombia (Bogotá), Antilles (coll. BANG-HAAS).

E. boliviana Godm. (47 g). Above olive-brown. Beneath the forewing is olive-brown, with the distal margin broadly ochre-yellow, proximally to which are placed 2 or 3 white subapical dots. An undulate submarginal line and 2 straight marginal lines brown. The hindwing is strongly dusted with white in the posterior half, the distal margin dull ochre-yellow, the base brown, 2 very dentate median and an undulate submarginal line dark brown. In the marginal area a row of fine white dots. Bolivia (San Jacinto, Corvica).

E. griseola spec. nov. (47 g). Above grey-brown, costal and distal margin darker, hindwing lighter, marginal lines indistinct. Under surface yellowish grey, in the marginal area lighter, the first transverse line indistinct, the second more strongly dentate on the hindwing than on the forewing, the submarginal line dentate on both wings, the marginal lines on the forewing straight, on the hindwing undulate. In the marginal area on the forewing 5 brown spots, the 3 middle ones with silvery pupils, hindwing with 5 ocelli with silvery pupils and ochre-yellow and brown rings. From the Mapiri.

E. griseldis spec. nov. (48 d) ♀. The distal margin of the hindwing is strongly dentate, the inner margin excised. Above grey-brown, the distal half of the hindwing lighter. No first transverse line discernible. The 2nd transverse line is placed on both wings somewhat further distad than usual and is fairly straight. Submarginal line dentate, 2 marginal lines dark, a black dot in cellule 2 of the hindwing. Under surface yellow-grey, inner margin of the forewing and distal half of the hindwing lighter, finely sprinkled all over with brown, forewing with the same transverse lines as above, hindwing with a straight first transverse line, the 2nd transverse line widened into a broad brown band, in the light marginal area 3 black dots, in part with double white pupils and some brown spots between them. From Esperito Santo (Brazil).

E. muscosa Btlr. (48 e) ♀ has the apex of the forewing truncate, so that an obtuse angle is formed in the distal margin at vein 5 and a right angle at the costal margin; in the ♀ figured this point is even somewhat produced. Hence the species forms a transition to the genus *Pindis*. Above unicolorous olive-brown. On the under surface the forewing is lighter brown and irrorated all over with dark brown. The ground-colour of the hindwing is more bluish grey, likewise irrorated with brown, bearing in the middle a blue-grey spot with less irroration, behind this a broad blue-grey band without any; but in the ♀ this band is also irrorated. — According to W. MÜLLER the egg of this species is round, without markings. The young larva resembles that of *Taygetis ypthima*. The body is whitish green, adorned with fine bristly hairs, the head light brown, rugose, with conical elevations, on which are placed short black-brown horns with bristly hairs. The larvae feed on grasses, but died before the first moult. The butterfly is distributed in South Brazil (Blumenau, Joinville, São Paulo).

E. antonoë Cr. (48 e). One of the largest species. Above brown with 2 dark marginal lines on the forewing and 3 on the hindwing, also a small, black, oval spot in cellule 2 of the hindwing. Beneath lighter brown, with 2 almost straight brown median stripes, 3 eye-spots on the forewing, only the first distinct, 5 on the hindwing, the 2nd and 5th large, the others smaller, all in red-yellow rings. From Guatemala, Honduras, Nicaragua, Panama, Venezuela, Surinam, Amazons. — *zeba* Btlr. is a form of *antonoë* with the under surface lighter brownish grey, the median bands somewhat narrower and converging somewhat towards the anal margin of the hindwing. From Pebas in Peru.

E. sabina Fldr. (48 e) is somewhat similar to *antonoë* Cr., but considerably smaller. The upper surface is grey-brown with 3 faint transverse stripes, which are broader on the hindwing, a large black eye-spot with yellow and brown rings in cellule 2 of the hindwing before the anal angle and 2 similar, somewhat obscure eye-spots at the apex of the same wing; the other 2 eye-spots of the underside only show through quite faintly above, the under surface is lighter, with one ocellus on the forewing and 5 on the hindwing. From the Amazons and Cayenne. The figure is from FELDER's type in coll. ROTHSCHILD.

E. lineata Godm. (45 e). The hindwing of this species is more elongate than in *antonoë*, with the anal half of the distal margin dentate. The upper surface is unicolorous brown, the under surface somewhat lighter brown, with a straight, yellowish white, sharply defined median band 1 mm. in breadth and a narrow, brown, white-edged basal line. On the broad distal margin, which is much lighter, the dentate submarginal line and the marginal line stand out distinctly. Each wing bears 2 or 3 small, black, white-pupilled eye-spots. The median band varies greatly in shape, width and colouring. From Manaure in the Sierra Nevada, from Santa Marta (900 m.) in North Colombia, Carmen (1200 m.) in West Columbia, in August. — I propose the name *interrupta* form. nov. for a form in which the median band on the underside of the forewing is only indicated at the costal margin by a pointed white triangle, being otherwise replaced by a dark brown line, accompanied distally in

places with white scales. On the hindwing it is interrupted several times, only remaining visible, as a fine, white transverse line, at the costal margin, in the middle of the wing and before the anal angle. On the other hand the first transverse line (that nearest to the base) is on both wings distinctly white and distally margined *melania*, with brown. — *melania* *form. nov.* differs still more. In it the white median band has disappeared entirely and in its place a black line runs through the deep dark brown ground-colour. The basal transverse band is also much darkened, so that it is inconspicuous. The eye-spots and the broad, light marginal band, however, are as in the type-form. Both forms were found by FASSL at Carmen in West Colombia, *interrupta* at 1600 m. in December, *melania* at 1200 m. in October.

satyrina. **E. satyrina** Bates (= Tayg. cecilia Bdv.) (48 e). Above brown with a black, white-pupilled, sometimes very indistinct eye-spot at the anal angle of the hindwing. Beneath likewise brown with 2 parallel, nearly straight, dark brown transverse stripes crossing the middle of both wings, the inner one distally, the outer one proximally bordered with ochre-yellow. The distal margin of the forewing is rather broad, lighter reddish brown, and shows before the apex a small black, white-pupilled ocellus. The hindwing has anteriorly two and posteriorly one similar but larger ocellus. The species is very variable. From Guatemala, Costa Rica, Panama *incerta*, and Mexico. — *incerta* Btlr. is a form of *satyrina* which differs in the lighter brown ground-colour of the under surface and has 5 eye-spots on the hindwing beneath. Occasionally the 3rd and 4th of these eye-spots are small, but all have distinct white pupils. There are further 2 white dots on the forewing. Occasionally also the ochre-yellow bordering of the brown median stripes is absent. A ♀ of this form has on the upperside of the forewing a reddish yellow-brown band, differing somewhat from the ground-colour, and on the underside of the hindwing only two eye-spots in cellules 2 and 5. Between these are placed in cellules 3 and 4 three small *gigas*, white spots. From Costa Rica. — *gigas* Btlr. (48 e) is a rather large form of *satyrina*, in which the forewing has 3 ocelli on the under surface (one larger and 2 smaller) and the hindwing five large ones, the first, second and last black, with yellow iris and white pupil; the third and fourth are brown with white pupil. From Mexico.

tiessa. **E. tiessa** Hew. Size of the preceding. Above dark brown with black submarginal line. The hindwing is dentate and has in the anal angle an indistinct eye-spot with brick-red ring. The under surface (according to HEWITSON) is brown from the base to the middle. Both wings are traversed before the middle by a red-brown band, and at the middle by a broader band of the same colour. Then follows a broad grey band, on which is placed a brown stripe with the eye-spots; these consist of a small one near the costa of the forewing and 3 on the hindwing, namely 2 at the apex and 1 at the anal angle. All the eye-spots are black with reddish iris, dark brown ring and white pupil. 2 submarginal stripes and the margin red-brown. The stripe on the hindwing is dentate like the margin. — The figure in BUTLER Lepid. Exot. pl. 18 fig. 4 does not agree with this description of HEWITSON's as regards the ground-colour of the wings and the colouring of the eye-spots. According to this figure the ground-colour of both wings is light reddish grey or flesh-coloured all over with a lilac band beyond the middle, whilst HEWITSON says the basal half of the wings is brown and the band grey. The iris of the eye-spots according to BUTLER is light yellow, HEWITSON calls it rufous. GODMAN and SALVIN describe the species with 5 eye-spots on the hindwing, of which 2 are indistinct. From Nicaragua, Costa Rica, Panama and Ecuador.

libye. **E. libye** L. (= harpyia Fldr.) (48 e). Above olive-brown with two dark brown marginal lines and one submarginal line, beneath much lighter, more or less inclining to lilac, with 2 straight, rust-brown stripes, one before, the other in the middle; the former crosses the cell on both wings, the latter on the forewing only touches its posterior angle, on the hindwing it enters the cell at the point of origin of vein 5 and leaves it between that of vein 2 and that of vein 3. Before the apex of the forewing a small round ocellus, 5 oval ocelli on the hindwing, of which the 1st, 2nd and 5th are black with very indistinct pupils and yellow ring, thickened at the proximal side, the rest indistinct. *libye* is a common and widely distributed species. Guatemala, Honduras, Nicaragua, Costa Rica, Panama, Colombia, Ecuador, Surinam, Brazil (Pará, Pernambuco, Bahia, Rio), Jamaica. *libyoidea*, — *libyoidea* Btlr., is a form of *libye*, somewhat larger, with the forewing more produced at the apex and the hindwing less strongly dentate. On the under surface are placed on the forewing four distinct black-brown eye-spots with yellow rings and with white pupils formed of irregular white dusting, the ocelli of the hindwing are much larger than in the type-form, the largest, in cellule 2, measures 6 mm. in length and 4 mm. in breadth. In the course of the 2nd (outer) median stripe I notice another difference from *libye*, which BUTLER has not mentioned. In the figure of *libyoidea* in the Proc. Zool. Soc. Lond. 1867 pl. 11 fig. 13 this stripe intersects the lower angle of the cell on the forewing, whilst in *libye* it only touches it. On the hindwing it enters the cell between the points of origin of veins 4 and 5, thus on the lower discocellular, and leaves it between veins 3 and 4, whilst in *libye*, as mentioned above, it enters the cell at the origin of vein 5 and leaves it between veins 2 and 3. *gracilis*, From Nicaragua. — *gracilis* *form. nov.* (48 f) is a further form of *libye*, differing chiefly in having the two straight, reddish brown median stripes on the under surface of both wings placed more distally. On the forewing the 2nd, outer stripe is situate at a distance of 2 mm. from the cell. On the hindwing it crosses the lower discocellular as it enters the cell and the median at the origin of vein 3 as it leaves it, and is thus placed somewhat further distad than even in *libyoidea*. In consequence of this *gracilis* has the marginal area much narrower. On the fore-

wing there is only one eye-spot, the 5 eye-spots of the hindwing are smaller, less oval, but coloured like those of *libye*. From Pebas in Peru. Coll. BANG-HAAS.

Pacarus Group.

E. saundersii *Btlr.* The inner angle of the forewing with a bluntly angled projection. Above brown *saundersii*, with 2 indistinct marginal lines. Beneath lighter brown, inclining to violet, the marginal area of the hindwing bluish green. Two brown median lines, diverging towards the costa of the forewing, the outer forming a small angle distad on the hindwing. Two brown marginal lines, forewing without eye-spots. On the hindwing 5 (occasionally 6) oval black eye-spots with light brown and outer dark brown rings and silvery pupils. The 3 middle ones are somewhat larger than the rest. Size 56 mm. From Ega on the Amazon and from Pernambuco.

E. mima *Btlr.* Similar to the preceding, but much smaller, only measuring 37 mm. On the under sur- *mima* face the forewing has a small eye-spot before the apex and the median lines are more approximated anteriorly; the hindwing is less violet and its eye-spots are smaller and placed nearer to the margin. From Tapajos.

E. fumata *Btlr.* Above black-brown, with light brown marginal line. Beneath somewhat lighter; on *fumata*, the forewing only one median line is present, which touches neither the costal nor the inner margin; on the hindwing there are two, of which the outer one is angled at the anal angle and joins the undulate submarginal line. In addition there are 2 dark brown marginal lines. Hindwing with 6 heart-shaped black ocelli, which have ochre-yellow rings and outer dark brown ones and are sprinkled with steel-blue dots, the 3rd, 4th and 5th ocelli somewhat larger than the rest. 55 mm. From Rio Grande.

E. amalda *spec. nov.* (48 f). This new species is similar to *fumata* beneath, but very different above *amalda*, and considerably smaller. The basal and median areas of the forewing above are velvety dark brown, the costal and distal margins lighter brown. This lighter colouring begins narrowly at the base of the costal margin, but gradually increases in breadth distally and measures 4 mm. from the apex to the inner angle, where it again becomes somewhat narrower. At the base the two colours shade into one another. The hindwing is lighter brown. The under surface is dark grey-brown with 2 median, one submarginal and 2 marginal lines brown. The forewing has no eye-spots, but on the hindwing there are 5 small, proximally pointed, black ocelli, which are surrounded by brown rings and have obliquely placed pupils formed of silvery dusting. From the Mapiri (Amazons), coll. BANG-HAAS.

E. pacarus *Gott.* Above unicolorous brown. Beneath the same with 2 darker marginal lines, the hind- *pacarus*, wing in addition with a dark brown median line and 5 round, deep black ocelli, which have a pupil composed of silvery dusting, a brownish iris and outside it a dark brown ring. On the forewing there are no eye-spots. 50 mm. From Brazil. Rare, apparently wanting in all the more recent collections.

E. peculiaris *Btlr.* Above brown with a lighter line before the margin and a black-brown marginal *peculiaris*, one, the hindwing with a dentate submarginal. Beneath lighter, both wings with 2 dark brown marginal, a dentate submarginal and 2 irregular median lines. A washed-out light brown band crosses the middle. The hindwing has before the apex at the costal margin 2 obliquely placed, black, white-pupilled ocelli with ochre-yellow iris. The species is easy to recognize by these 2 isolated eye-spots on the under surface. 53 mm. From Minas Geraes. Rare.

E. insignis *Btlr.* Above brown with 2 indistinct marginal lines, on the hindwing the larger eye-spot *insignis*, of the under surface before the anal angle shows through above. Beneath the wings are lighter, the hindwing whitish in the median area; both wings with 2 brown marginal lines, the inner on the hindwing undulate. The hindwing with 2 fairly straight, parallel brown lines, only 3 mm. apart, through the middle and in the marginal area, in cellules 1 c, 2 and 3, with 3 black, silver-pupilled eye-spots, which have a common ochre-yellow bordering and of which the middle one is large, the others very small. Locality unknown. Collected by BATES.

E. erichtho *Btlr.* (= *antonina* *Fldr.*) (48 f). The inner angle of the hindwing is obtusely produced as *erichtho*, in *saundersii*. Upper surface olive-brown, the forewing with 2, the hindwing with 3 dark brown marginal lines. Beneath lighter brown; the margins dusted with whitish violet, with 3 distinct marginal and 2 dark brown median lines, and with a short dark brown streak on the discocellular of the forewing. Two small eye-spots before the apex of the forewing, occasionally also a third in cellule 2; hindwing with 6 black eye-spots with thick, glossy white pupils, which are surrounded by 4 rings, first a brownish yellow, then a black, then ochre-yellow and outside again black. The 3rd, 4th and 5th eye-spots are usually larger than the rest. From Cayenne, Surinam, Brazil (Rio, Pernambuco, Bahia, Pará, Ega), Bolivia (Coroico).

Batesii Group.

E. batesii *Btlr.* (= *terentia* *Fldr.*) (48 g). Above brown, with a slight lilac gloss, with 3 indistinct mar- *batesii*, ginal lines and grey fringes. The ♀ at the anal angle of the hindwing with a black oval spot with white pupil

- and a light brownish ring. Beneath light lilac with 2 red-brown median and a short, oblique basal stripe, a similar band in the marginal area, on which the eye-spots are placed, and 3 marginal lines. On the forewing a black eye-spot before the apex, with ochre-yellow ring and glossy white pupil, and some silver dots below it. Hindwing with 5 ocelli or eye-shaped spots, of which the 1st, 2nd and 5th resemble the eye-spot on the forewing, but the 2nd and especially the 5th are much larger, whilst the 3rd and 4th are composed only of silver spots with red-brown bordering. From Surinam and the Tapajos. In the Surinam examples the inner margin of the forewing is somewhat ochre-yellow on the under surface. — *analís* Godm. (48 f) is a form of *batesii* with a slight purple suffusion above and a distinct spot of dark blue scales at the anal angle of the hindwing. The red-brown bands on the under surface are broader and show through above; otherwise not different from *batesii*. From São Paulo and the Tapajos (Amazon) and from Pebas in Peru. — The form *tersa* Stgr. i. l. (49 a) is quite similar to *batesii* on the upper surface, but on the underside, instead of the 2 or 3 silver spots which *batesii* and *analís* have between the eye-spots of the hindwing, bears 2 further small brown eye-spots with grey pupil, yellow iris and dark brown outer ring. In addition there is also a quite small, but otherwise similar black ocellus at the anal angle of the hindwing; so that there are 6 eye-spots altogether on this wing. Locality unknown. Coll. BANG-HAAS. — *thalessa* Möschl. is according to its author's figure a form of *batesii* which only differs in having a small black eye-spot with white pupil, placed in cellule 3 on the hindwing between the two large eye-spots. But in the corresponding description the eye-spot is not mentioned, the cellule in question, on the contrary, being described as without eye-spot. From Surinam.
- juani*. **E. juani** Stgr. (49 a). Above dark brown-grey, with only the anal eye-spot of the hindwing showing through somewhat above. The under surface is similar to that of *batesii*, but the ground-colour in the basal part to the 2nd transverse stripe is much darker, brownish grey. The whitish grey ground-colour is confined to the distal half of the wings. The 2 dark brown median stripes are broad, straight and parallel. The submarginal line is rather broad, not dentate but almost straight. On the broad brown band in the marginal area are placed on the forewing one eye-spot, on the hindwing 5 black ocelli, of which the 5th is very large and with single white pupil, the 1st and 2nd small with double pupil, whilst the 3rd and 4th bear in the middle oblong silver streaks. All are margined with ochre-yellow. From the Rio San Juan in West Colombia.
- tricolor*. **E. tricolor** Hew. (49 a). One of the most beautiful species of the genus. Above the forewing is brown, the costal margin reddish brown; a glossy blue line runs parallel with the posterior part of the distal margin. The hindwing is black-brown with a broad red-yellow costal margin and a glossy blue stripe along the inner margin and the posterior part of the distal margin. Beneath light violet-grey with 2 broad brown median stripes, a narrow oblique stripe at the base of both wings, a broad vague band in the marginal area, on which the eye-spots are placed, and 3 smooth marginal lines running parallel with the distal margin. On the forewing one eye-spot before the apex, on the hindwing 3, as in *batesii*, in cellules 2, 5 and 6, but the first very large and all with double pupils and between them in cellules 3 and 4 several elongate silver streaks placed in 2 oval brown spots bordered with red-yellow. From Fonteboa, Tapajos (Amazons). — The form *fulgora* Btlr. (49 a) is distinguished by a bright iridescent blue stripe, which on the upper surface of the forewing extends from the base across the cell, widens before the apex in all the cellules and is then continued as a narrow line along the distal margin to the inner angle. From Pebas in Peru and from Coca in Ecuador.
- nortia*. **E. nortia** Hew. (49 a). ♂ above yellowish white with the costal margin of the forewing and the distal margin of both wings brown, the brown bands of the under surface also showing through above. Under surface white, with 2 broad, parallel, brown median stripes and in the marginal area a broad brown band, which on the forewing contains no eye-spots. On the hindwing instead of this band 2 small eye-spots at the apex, 2 at the anal angle (one very large), all black with white pupils and red-yellow and brown rings and between those in cellules 3 and 4 two lead-coloured longitudinal streaks in red-yellow and brown oval spots. At the distal margin 3 brown marginal lines, which on the hindwing are somewhat undulate. The ♀ is grey-brown above, towards the distal margin darker, the median stripes of the under surface show through above. Beneath the markings are similar to those of the ♂, but the basal and median areas are finely dusted with brown as far as the 2nd (somewhat basally curved) median band, so that only the distal part retains the light ground-colour. The ocelli and silver spots, however, are as in the ♂. From Pebas (Peru), the Tapajos (Amazons) and Cayenne.
- nobilis*. **nobilis** form. nov. (49 a) is a second ♀-form of *nortia*, in which the distal half of the forewing above is light whitish grey and the basal half, the whole costal margin and 2 marginal lines brown. The light colouring is continued also on the hindwing at the apex for a short distance, but then gradually shades into the brown ground-colour. On the under surface the 2nd brown median stripe is not curved but straight and the light band beside it considerably narrower. The eye-spots are as in the type-form. From Tabatinga on the Amazon.
- moderata*. **moderata** form. nov. (48 g) is another female form of *nortia*, in which the light band on the under surface is likewise quite straight on both wings behind the middle. But the upper surface of both wings is entirely brown, as in the ♀ of the type-form, and has 3 dark brown marginal lines. From the Mapiri (Bolivia).
- segesta*. **E. segesta** spec. nov. (51 b). ♂. The upper surface is unicolorous brown with 3 brown marginal lines, which on the forewing are indistinct. The under surface is similar to the ♀♀ of *E. nortia*, but distinguished by the different position of the white median band. This band on both wings is placed *between* the two brown

bands, whilst in *nortia* ♀ it is placed distally to the second brown band. Hence the marginal area is broader than the basal, especially on the hindwing. The brown bands are broader than in *nortia* — but the eye-spots quite as in that form, the oval ochre-yellow spots, however, each with a glossy silver streak in the middle, stand out distinctly between the eye-spots. Only the ♂ has yet been found. From Gramal near Muzo in Colombia (FASSEL).

E. lesbia *Stgr.* Above light brownish grey with 3 straight brown transverse stripes on the forewing *lesbia*, and 2 on the hindwing and 3 brown marginal lines. Hindwing with black anal eye-spot with double white pupil and broad ochre-yellow ring; before this an elongate white spot and towards the apex 3 round black spots, of which the middle one is the largest. The under surface is almost the same, except that a small eye-spot is placed before the apex of the forewing and a few silver spots below it; there is also a large ochre-yellow spot proximally to the anal ocellus on the hindwing and at the apex of this wing a second eye-spot instead of the black spot, while the white longitudinal streak on the upper surface is absent. 41 mm. From the Amazons (Massauary, Teffé, Fonteboa).

Gera Group.

E. gera *Hew.* Above dirty white, forewing at the costal and distal margins broadly brown, hindwing *gera*, bearing before the middle 2 brown lines and before the margin 2 indistinct eye-spots with dark central dots, both wings with 2 brown marginal lines. The under surface is as above, only the forewing also has 2 brown lines before the middle, the eye-spots of the hindwing are reddish, have black dots with white pupils, distally to them are placed 2 further smaller eye-spots and between them 2 oval spots with a silver line in the middle. The ♀ is above brown, at the base purple with a white band traversing the middle from the costal margin of the forewing to the hindmargin of the hindwing. The under surface is grey-brown with the same white band. The eye-spots as in the ♂. From the Amazons.

E. metagera *Btlr.* Above brown, in the middle whitish, with 2 indistinct brown median bands and *metagera*, 3 dark brown marginal lines. Hindwing with a dark spot at the apex and an eye-shaped spot at the anal angle. Wings beneath lighter, towards the apex rose-reddish, bands as above, but more distinct. Hindwing with 6 yellow-bordered eye-spots, of which the 2 middle ones are oval and have oval silvery dots, the others round, black and with small silvery pupils. From the Upper Amazon.

E. hiemalis *Btlr.* Above white, costa and margin of the forewing brown, both wings with 3 brown mar- *hiemalis*, ginal lines, hindwing with 2 brown spots at the apex and one at the anal angle. Beneath likewise white with 2 brown median lines, which are abbreviated on the forewing, and of which the distal one is angled before the inner margin of the hindwing. Costal margin and apex of the forewing brown, 3 marginal lines as above, hindwing with 6 ocelli, some round, others oval, just as in *metagera* except that they are margined with red-yellow. From the Amazon and its tributary the Rio Negro.

E. julia *Stgr. i. l.* (48 g). Above dark olive-brown with 2 indistinct marginal lines on the hindwing, *julia*. Beneath likewise olive-brown with a straight white median stripe, which extends from $\frac{1}{2}$ the costal margin of the forewing to the anal angle of the hindwing, and with 3 brown marginal lines on the somewhat lighter distal margin, the inner one undulate. Forewing before the apex with a small black eye-spot with red-yellow ring and white pupil, hindwing with 5 ocelli, the 1st, 2nd and 5th coloured like the one on the forewing, but (except the first) larger. The others are brown with 2 short white streaks in the middle. In the ♀ the ground-colour is somewhat lighter brown, otherwise it is like the ♂. From the Songo in Bolivia and Cuzco in Peru at elevations of 2—3000 m. — **torva** *form. nov.* (48 g) is a form of *julia*, differing in having the median band on *torva*, the under surface not white, but strongly dusted with grey-brown and before the anal angle of the hindwing bent basewards in an acute angle. Found by FASSEL in October at the Quindiu-Pass in Colombia at 2500 m.

Cluena Group.

E. cluena *Drury* (= *clueria* F.) (48 g). Above violet-grey, distally darker with 3 dark brown marginal *cluena*, lines, hindwing with a continuous row of 5 dark brown spots, of which the posterior 4 have lilac spots in the middle. Beneath entirely lilac with very fine brown median and marginal lines. In the marginal area a nebulous brown band, on which on the forewing are placed 2 or 3, on the hindwing 5 small ocelli, the 1st on the forewing, the 1st, 2nd and 3rd on the hindwing black, the others brown, all with ochre-yellow ring and white pupil. From Brazil (Rio de Janeiro, Espírito Santo).

Byses Group.

E. byses *Godt.* (49 d). Above in the ♂ brown with slight bluish violet reflection, otherwise without mark- *byses*, ings. Beneath lilac, finely striated with brown all over. At the distal margin this striation is gradually condensed into an entirely brown colouring. Close to the distal margin are placed on the hindwing in cellules 2 and 5 two small black eye-spots with white pupil and yellow ring; between and before these 3 white dots. Before the apex of the forewing 3—4 white dots. The ♀ is above unicolorous brown without blue reflection, the

eye-spots on the underside of the hindwing, however, are much larger than in the ♂, and there is further a quite small eye-spot before the apex of the forewing beneath. The size of the eye-spots varies greatly. From Brazil.

Lea Group.

- lea*. **E. lea** Cr. (48 f). Above glossy blue, apex, costal and distal margins of the forewing and the greater part of the veins black. Beneath brownish grey, the posterior half of the hindwing in the ♂ glossy blue, in the ♀ more blue-grey. Both wings with 2 nearly straight, parallel dark brown median stripes, of which the proximal on the forewing does not reach the costal and inner margins, and with 3 marginal lines. Forewing with 2 small eye-spots before the apex, hindwing with 6 black eye-spots, each with white pupil and surrounded by an ochre-yellow ring and outside it a brown one, only the 2nd and 5th large, the others very small. From Surinam. — *junia*. **junia** Cr. is a form of *lea* with the upper surface entirely sky-blue and only bordered by a narrow black marginal line. On the under surface of the forewing only one eye-spot is present. The ♀ has the margins of both wings brown. From Surinam and Brazil (Pará and Bahia). — *philippa*. **philippa** Btlr. is a form belonging here, in which the upper surface is entirely brown and only the hindwing is blue-grey in the ♂ towards the apex and in the ♀ towards the base. There are also 2 indistinct brown marginal lines, which are undulate towards the apex of the forewing and on the hindwing. The under surface is exactly as in *junia*. The antennae are above brown, beneath rust-coloured, towards the tip ringed with black, the tip itself white. From Ega.

Cephus Group.

- cephus*. **E. cephus** F. (♂ = *lysidice* Cr., ♀ = *doris* Cr.) (49 b). The ♂ is above glossy sky-blue. Forewing with the costal and distal margins blackish grey; a stripe of the same colour runs from the base over the median and is divided on the branches of this vein; all the veins are blackish grey at the distal margin. On the hindwing all the margins are the same, only the inner margin somewhat lighter. The under surface is likewise sky-blue with brown transverse stripes and marginal lines, one eye-spot on the forewing and 4 on the hindwing. The ♀ is above unicolorous grey-brown, with bluish white terminal line at the margin of the hindwing. The under surface is quite similar to the ♂, except that the eye-spots are larger. This beautiful species is widely distributed in South America; it occurs in almost the whole of the Amazon country; further in Surinam, Colombia and South Brazil (Rio de Janeiro). — *angelica*. **angelica** Btlr. is a form of *cephus* which only differs in its larger size (48 mm.), in having an undulate, inner marginal line on the under surface and in the transverse stripes on the forewing only reaching to the middle. From Rio de Janeiro.
- parthenie*. **E. parthenie** spec. nov. (48 f). Above bluish grey-brown with 2 dark brown marginal lines, between which on the hindwing is placed a whitish line, otherwise without markings. Beneath light bluish grey with 2 narrow median stripes, a fine submarginal line and 2 fine marginal lines. The outer of the median stripes is somewhat proximally curved on the forewing, hence the marginal area is broader than usual. Forewing with 1 eye-spot, hindwing with 6, of which the 2 middle ones are indistinct, the 1st and last small, the other 2 somewhat larger. (38 mm.). From Minas Geraes. Of this species I received a female from the THIEME collection, determined as *angelica* ♀; but as it is much smaller than *angelica* ♂ and the colouring and pattern are quite different from *cephus*, I regard it as a separate species.
- glaucina*. **E. glaucina** Bates (49 b). Above pale blue-grey, not glossy, forewing grey-brown at the apex and the costal and distal margins, veins on both wings and the 3 marginal lines of the hindwing likewise grey-brown. Beneath pale blue with 4 brown lines before and behind the middle and 2 marginal lines. Forewing with one, hindwing with 4 ocelli as in *cephus*. The ♀ is unicolorous brown above. Rather widely distributed in Mexico and Guatemala from the lowlands up to 1500 m. — *glauca* Stgr. i. l. (49 b) is a more restrictive form of *glaucina*, in which the forewing is almost entirely dusted with grey-brown and the blue colouring is only present near the inner margin. An elongate, more thinly scaled spot is placed at the middle of the inner margin. The hindwing is somewhat brighter blue than in *glaucina*, with black costal margin and 3 black marginal lines. The under surface is likewise similar to *glaucina*, but has 5 eye-spots on the hindwing in cellules 2—6, the two in cellules 2 and 5 larger, black with 1 bluish white and 1 brown ring, without pupils, the others small, indistinct, consisting of a brown ring, which is filled up with the blue ground-colour and has a brown central dot. The eye-spot in cellule 1 c of the hindwing is thus absent here. From Bolivia.
- brixius*. **E. brixius** Godt. Above bluish grey with 6 dark brown transverse stripes and 2 marginal lines. Beneath the ground-colour is lighter, the stripes as above; on the 4th stripe of the hindwing are placed 5 eye-spots, of which the 1st, 2nd and last have white iris, but the other two are without iris. All these eye-spots are black with double silvery pupils. 38 mm. From Brazil. — *brixiola* Btlr. is a somewhat smaller form of *brixius*, which according to BUTLER's description has one less transverse stripe on the wings. The ♂ is above light grey, the ♀ light brown, on the 4th stripe the hindwing has 2 indistinct black eye-spots with white pupils. The under surface is bluish white, with the stripes as above. Before the apex of the forewing in the ♀ a black, yellow-ringed eye-spot with silvery double pupil and 2 indistinct eye-spots below it (in the ♂ these are all obsolescent). On the hindwing five similar ocelli, always distinct, of which the 2nd and 5th are larger, only the 3rd and 4th entirely silvery and with yellow rings. 35 mm. From Pará.

E. aegrota *Btlr.* (49 b). Above bright blue; forewing with black margin and two black median stripes; *aegrota*, hindwing with narrow margin and oval spot at the anal angle. Fringes white. The under surface is similar to that of *cephus* and *glaucina*, but the submarginal line is more dentate, the eye-spots in cellules 2 and 5 of the hindwing larger, the one in cellule 1 c absent, on the other hand in cellules 3 and 4 are placed between the eye-spots two brown rings with blue centres and on the forewing in cellules 3 and 4 likewise two similar brown rings with blue centres and brown central dots. From Pará and from the upper Madre de Dios in Peru.

E. aetherialis *Btlr.* above approaches *aegrota*, but is very different beneath, and the distal margin *aetherialis*, of the forewing is not rounded, but nearly straight. The ground-colour of the upper surface is of the same blue as in *aegrota*, the inner of the median lines is indistinct and the black anal spot of the hindwing is smaller. Beneath the wings are silvery blue with 2 narrow rust-red median lines, which are angled before the inner margin of the forewing, a submarginal line of the same colour and 2 dark brown marginal lines. Forewing with 3 small eye-spots in cellules 4—6, the anterior one with yellow iris, the other 2 indistinct; hindwing with 5 eye-spots, of which the first 2 and the 5th are black, while all have yellow rings and white pupils, the pupils of the 2nd and 5th being double. 40 mm. From Sarayacu, Ecuador.

E. coelestis *Btlr.* (48 g). Above blue, apex and costal and distal margins of the forewing broadly *coelestis*, dark brown with two abbreviated median stripes, hindwing with 2 marginal lines and a submarginal likewise dark brown. Beneath blue, 2 median stripes, a somewhat abbreviated band on the forewing in the marginal area, a submarginal line and two marginal lines brown. On the forewing 2 eye-spots before the apex, black with blue and outer brown ring, the lower one only small; hindwing with 5 similarly coloured eye-spots in cellules 2—6, the 2nd and 5th large, the others all small. The ♀ is somewhat larger (47 mm), and has the costal margin of the hindwing above rather broadly dark brown and at the anal angle a dot of the same colour. From the Amazons (Ega) and the Mapiri. — **mare** *Btlr.* is a smaller form, in which the median stripes on the upper surface are almost entirely obsolete and on the under surface the eye-spots are smaller and in part indistinct, the bands also narrower and faint. From Pará.

E. caerulea *Btlr.* (49 b), similar to *coelestis*, above glossy blue. Apex and distal margin of the forewing *caerulea*, broadly dark brown, the costal margin narrowly dark brown along the costal vein. On the hindwing the apex and 2 fine marginal lines are dark brown. The under surface is light glossy blue with 5 nearly straight brown transverse lines and fine marginal lines, only the 2 distal lines on the hindwing undulate. At the distal side of the 3rd transverse line are placed on the forewing an eye-spot before the apex, on the hindwing 3 eye-spots, namely 2 at the apex, one at the anal angle. These eye-spots are black with blue ring and outer brown ring. The ♀ is somewhat larger and has above on the forewing 2 brown median stripes and on the hindwing a brown anal spot. From Maranhao (Brazil) and the Mapiri (Bolivia).

E. ziza *Btlr.* is similar to *coelestis*, but somewhat smaller, and the brown ground-colour has a violet *ziza*, tone. The 2 median bands of the forewing are placed nearer together, are parallel and reach the inner margin; the marginal band is somewhat narrower. The hindwing in addition to the 2 marginal lines has also a median line. Beneath light blue with 2 brown median bands, 2 marginal lines and an eye-spot on the forewing, as well as 5 ocelli on the hindwing, all black with white rings, but the 3rd and 4th indistinct. From Pebas in Peru.

E. urania *Btlr.* is likewise allied to *coelestis*, and of the same size. Above glossy greenish blue with *urania*, very broad brown distal margin, the costa and a streak behind the cell likewise brown. Hindwing with 2 brown marginal lines. Beneath with 4 transverse lines across the middle and before the margin; further with 2 marginal lines, all brown. Apex of the forewing and anal angle of the hindwing likewise brownish. Forewing with an indistinct black eye-spot before the apex. On the hindwing only the 2 larger eye-spots are distinct. From Cametá near Pará.

E. coelica *Hew.* Above sky-blue, apex and distal margin broadly black; on the hindwing a band *coelica*, at the apex, two submarginal lines and the fringes black. Beneath likewise sky-blue, both wings with 2 stripes before the middle, 2 submarginal lines and the fringes dark brown. Before the apex of the forewing a black eye-spot bordered with brown. At the apex of the hindwing 2 similar eye-spots (the first smaller), and at the anal angle a third eye-spot. Between them 2 brown flexuose rings. From Ecuador. HEWITSON remarks that this species surpasses in beauty all the allied blue species; but the following *divina* is no less beautiful.

E. divina *Stgr. i. l.* (49 c) ♂. Quite similar above to the preceding species; bright sky-blue with *divina*, the apex and distal margin of the forewing broadly black, apex and 2 marginal lines of hindwing black. But the under surface differs in the larger number of the ocelli and of the median stripes. On the forewing before the apex two black eye-spots with light blue and outer brown ring and one or 2 brown spots posteriorly to them. On the hindwing 5 large, similarly coloured eye-spots in a straight row. The outer brown rings touch on the veins and on the proximal side of the eye-spots a brown stripe runs from vein 2 to the costal margin,

so that 3 median bands are present. Occasionally the anterior ocelli of the hindwing have blue central dots. From Bolivia.

lobelia. **E. lobelia** *Btlr.* ♂: above sky-blue, apex and distal margin of the forewing broadly black, the veins before the margin the same, also a streak on the discocellular and an almost triangular ring behind the cell. The hindwing has the apex and 2 marginal lines black. The inner angle is more strongly produced than in the allied species. Beneath blue, with a basal streak, 2 median lines, a discal line and 3 marginal lines, all black. Forewing with one, hindwing with 2 blind black eye-spots of unequal size at the apex. 45 mm. From Ecuador.

helios. **E. helios** *Stgr. i. l.* (49 c) ♂. Above similar to *mare Btlr.*, dark blue, at the costal margin somewhat lighter, forewing with a straight black stripe across the discocellular, reaching to the first median vein. Distal margin black for a breadth of 2 mm., increasing at apex to 5 mm. Hindwing black at the apex, with 3 black marginal lines. Under surface light blue with red-brown, black-edged transverse stripes and brown marginal lines. On the forewing in cellules 3 and 4 two round ochre-yellow spots and above them in cellule 5 a brown ring, which is filled up with ochre-yellow and has a brown dot in the middle. Hindwing with 5 ocelli, the 1st, 2nd and 5th black with white pupil, that of the 5th eye-spot double, all with ochre-yellow iris and outer brown ring; the 3rd and 4th consist only of a brown ring, filled up with ochre-yellow. From the Mapiri in Bolivia.

periboea. **E. periboea** *Godm. & Salv.* (49 c). The ground-colour of the upper surface is blue inclining to grey. Apex, costal and distal margins of the forewing are dark brown. The hindwing has 3 dark brown marginal lines. Beneath the wings are brown with 2 dark brown median lines, a dentate submarginal line and 2 marginal lines. In the marginal area of the hindwing are placed 5 eye-spots, on the forewing the number varies from 1 to 4, or they are here entirely absent. They are small, black, with white pupils and brownish yellow rings. An easily recognizable species. From Colombia (Manaure in the Sierra Nevada from Santa Marta [SIMONS]) and in Paima near Muzo, 1000 m., in October [FASSL].

Pilata Group.

The ♂♂ of this group are distinguished by an oval spot of raised or hair-like scales, placed at the middle of the inner margin on the upperside of the forewing.

cyanites. **E. cyanites** *Btlr.* (= *stigmatica Godm.*) (49 c). The ♂ is sky-blue above, almost like *coelestis*, with black stripes and bands, but with the inner line on the forewing absent, inner margin of forewing with a whitish, grey-scaled spot. Beneath the bands are more reddish and the eye-spots smaller than in *coelestis*, otherwise like the latter. Moreover *cyanites* is larger. The ♀, which I received from coll. THIEME as *stigmatica* ♀, is very different from the ♂. It is grey-brown above, with a very slight bluish reflection in the basal half both wings, with 2 marginal lines on the forewing, 3 on the hindwing, of which only the outer one is distinct. Fringes grey. Under surface bluish grey, with 2 brown lines through the middle, the distal one somewhat undulate, a strongly dentate submarginal line and 2 marginal lines, the latter on the hindwing undulate, with one distinct and several (3 or 4) indistinct ocelli on the forewing and 6 eye-spots on the hindwing in cellules 1 b to 6, all black with white pupil, ochre-yellow ring and brownish bordering, the outer 2 smaller, the middle 2 rather indistinct. BUTLER gives Brazil as locality, GODMAN received *stigmatica* from Entre Rios in Argentina, HAENSCH took both sexes in Minas Geraes.

pilata. **E. pilata** *Btlr.* (49 c). Above sky-blue. Forewing with dark brown apex, costal and distal margins the same and with grey-brown hair-pencil over the inner margin. Under surface bright, glossy blue with 2 straight brown median lines, 2 marginal lines and a somewhat stronger submarginal line. Forewing with an eye-spot before the apex, with 2 small black spots below it and a lighter one above it. Hindwing with 4 eye-spots, 2 at the apex and 2 at the anal angle, the first and last small. These eye-spots consist of a thick orange-yellow ring with obliquely placed black pupil and an outer brown ring. Between the eye-spots are placed 2 thin brown rings, filled up with the blue ground-colour. From Ega (Teffé) and Tabatinga on the Amazon.

tenera. **E. tenera** *Stgr. i. l.* (49 c). Above dark blue, forewing with broad, washed-out, black distal margin and black veins. At the middle of the inner margin a short dark brown hair-tuft. Hindwing with undulate dark marginal lines. Inner margin grey. Beneath light greenish blue with 2 straight brown median lines, a curved band in the marginal area and undulate marginal lines. Forewing with a small blind eye-spot before the apex and below it a short brown nebulous band. Hindwing with 5 eye-spots of uniform size; these are black with ochre-yellow and outer brown rings and white pupils, the 3rd and 5th bi-pupilled. From the Rio Juntas in Bolivia.

penicillata. **E. penicillata** *Godm.* ♂: above greenish blue with narrow brown margins and with a thick pencil of brown hairs over the inner margin of the forewing. Beneath greenish brown with 2 fairly straight median lines, an undulate submarginal and 2 marginal lines, all dark brown. Forewing with 3 ocelli, the first somewhat

more distinct; hindwing with 5 eye-spots, the 2nd and last larger than the rest. The eye-spots are black with white pupils and yellow and outer brown rings. The ♀ is above unicolorous brown, beneath quite like the ♂, except that the ground-colour is light brown, towards the distal margin grey. (38 mm). From Tapajos (Amazons).

E. scopulata (49 d). ♂: similar to the preceding species, with a similar hair-tuft on the forewing, but *scopulata*, with the upper surface not blue, but brown with dark brown marginal lines and somewhat lighter fringes. Under surface grey, the stripes through the middle of the wings broader and red-brown, on the forewing 2 or 3 eye-spots present, on the hindwing 5, of which, as in *penicillata*, the first on the forewing and the 2nd and 5th on the hindwing are larger and more distinct than the rest. The latter is bi-pupilled. From the Mapiri in Bolivia and the Upper Amazon.

Arnaea Group.

E. arnaea F. (= *ebusa* Cr., *aranaea* F.) (49 d). Above brown, the larger posterior half of the hindwing *arnaea*, with bright blue reflection. In the ♀ this reflection extends over the whole hindwing and also occupies the inner margin of the forewing. The ♀ is further distinguished by having on the hindwing before the 2 marginal lines a dentate, dark brown submarginal line, which is wanting in the ♂. In addition the 2 dark brown median lines on the forewing are somewhat broader in the ♀. The light brown under surface has likewise a blue reflection in the ♂, but this is much weaker than above, occasionally, however, extending, beyond the 2nd median stripe, nearly to the costal margin of the forewing. In the ♀ the reflection on the under surface is less visible. Widely distributed and rather common. Nicaragua, Costa Rica, Panama, Guiana, Colombia, Amazons. — GODMAN and SALVIN (in Biol. Centr. Americana I, p. 89) question the correctness of employing the name *arnaea* for this species and consider that of *ebusa* Cr. more correct, as FABRICIUS himself in his Species Insectorum Vol. II, p. 75 has cited *Euptychia lea* Cr. (with a †, however). But as *lea* has both wings blue above, while FABRICIUS only speaks of blue hindwing and describes the forewing as brown, I am of the opinion that KIRBY and BUTLER are right in employing the name *arnaea* for *ebusa* Cr.

E. sericella Bat. ♀ similar to the preceding, but both wings above blue. Apex and distal margin of *sericella*, the forewing broadly dark brown, the costal margin narrow, with 2 fine brown median lines. The hindwing has brown fringes and 2 brown marginal lines with a reddish line between them. The under surface is according to BATES tawny brown with 2 dark brown median lines, the outer somewhat thicker and distally bordered by a straight, light lilac stripe; at the distal margin 2 dark brown median lines. Before 3 or 4 eye-spots on the forewing and 5 on the hindwing. Of the latter the 2nd and last are black with white pupil and yellow iris, the rest white with yellow iris. But the figure in the Biologia Centrali-americana does not agree with this description of BATES' in two points. The ground-colour in the figure is not tawny brown but dark brown, so that the transverse lines can scarcely be seen, and the difference in the colouring of the eye-spots mentioned by BATES is not discernible. As the species is represented in but few collections and is not known to me in nature, I cannot decide whether figure or description is correct. Very rare in Mexico (Orizaba) and in Guatemala (Vera Paz and Choctum).

E. chloris Cr. (= *chlorimene* Hbn., *tolumnia* ♀ Godt.) (49 e). The wings of this species are very thinly *chloris*, scaled, hence the markings of the under surface show through above. The upper surface is brown; in the ♂ the inner angle and the inner margin of the hindwing have a blue reflection. In the ♀ this reflection, which is here more violet, is extended over the whole hindwing and the greater part of the forewing. The under surface is in both sexes glossy violet-blue with broad, reddish brown median stripes, one eye-spot on the forewing and 5 on the hindwing, of which the 4th is of a flattened form and is divided longitudinally by a silver stripe, while the 3rd is little prominent and only recognizable by its round silvery central spot. The species is common in Surinam, on the Amazon and in Bahia. — **agatha** Btlr. (49 e) is a form of *chloris* in which the distal margin *agatha*, of the forewing is less excised and the hindwing more ample; the brown ground-colour is darker and the blue colouring on the hindwing more extended. On the under surface the outer median band on the hindwing forms an obtuse angle in the middle and an acute angle at the inner margin. The ocelli are larger. The 2nd eye-spot is placed so near to the distal margin that it touches the submarginal line. The 3rd and 4th eye-spots consist of elongate orange-yellow rings with silvery centres. The ♀ is more thinly scaled, of more violet colour, with red-brown margins; the ocelli of the under surface show through above. Beneath the median bands of the hindwing are placed nearer together. From Pará. — A considerably larger form of 45 mm. expanse I name **agathina** *form. nov.* It has much broader wings, is more thickly and densely scaled and hence not trans- *agathina*, parent. Above dark brown, the greater part of the hindwing dark steel-blue, only the costal margin dark brown for a breadth of about 10 mm. The under surface has on both wings a bright blue reflection, especially in the posterior half of the hindwing. The median bands are dark brown and on the hindwing straight, only on the forewing the 2nd band is somewhat distally curved before the inner margin. The two elongated eye-spots of *agatha* are here not bordered with orange-yellow but with brown. From Macas in Ecuador.

marica. **E. marica** *Stgr. i. l.* (49 e). The wings are thinly scaled, above brown with dark violet-blue reflection, which gradually shades into the broad brown distal margin. The bands and eye-spots of the under surface show through above. Beneath light violet with bluish gloss. The forewing with 3, the hindwing with 2 broad brown transverse bands, the distal forming an angle on the median of the hindwing and an acute angle distad before the inner margin. Forewing with one, hindwing with 3 ocelli, all black with yellow and brown rings and white pupils, the posterior eye-spot bi-pupilled. Between the eye-spots of the hindwing the yellow-brown, oval spots with silvery pupils as in the allied species. *marica* is easy to distinguish from the latter by having the two larger ocelli in cellules 2 and 5 of equal size. From Pebas on the Amazon in Peru.

herse. **E. herse** *Cr.* (= *herseis* *Godt.*) (49 e). Above dull violet with blue reflection. Forewing with brown costal and distal margins, the latter twice as broad as the former, with 2 straight median stripes, 3 marginal lines and a round brown spot before the apex. On the hindwing the first median stripe is straight, the 2nd forms on the median a sharp, distally directed tooth. Before the anal angle a large black eye-spot with yellow ring and at the apex 2 smaller, obscure eye-spots. Beneath the ground-colour is light violet-grey, the transverse stripes yellow-brown. Forewing with one eye-spot, hindwing with 3, the first very small, the last large, all black with red-yellow and brown rings, all (also the one on the forewing) with double white pupils. Between the eye-spots in cellules 3 and 4 two red-yellow spots with silvery centres. From Surinam, Pará, Merida (Venezuela) and Villavicencia (East Colombia [FASSEL]).

callichloris. **E. callichloris** *Btlr.* Similar to *herse*. Above brown. The wings at the base transparent, violet. The third band on the forewing nearer to the margin, the first on the hindwing indistinct, the others strongly angled, the anal eye-spot large and black, with yellow ring, the others indistinct. The under surface is according to BUTLER's figure lilac, according to his description whitish, the bands of the forewing as above. On the hindwing the basal area is filled up with brown to the first transverse band, the 2nd band forms an acute angle distad. The yellow rings round the eye-spots are very broad, interrupting the brown bordering, and forming a continuous yellow band on which are placed in cellules 2 and 5 round black spots with silvery double pupil and in cellules 3 and 4 silvery streaks. The eye-spot in cellule 2 is larger, that in cellule 5 smaller. The still smaller eye-spot in cellule 6, which is likewise black and has a double silver pupil, is isolated and placed in a yellow and brown ring. From Ega (on the Amazon).

Tolumnia Group.

On the upperside of the forewing in the ♂♂ is placed at the hindmargin of the cell a narrow stripe of scent-scales adjoining the stalk of the median and consisting of hair-like scales.

tolumnia. **E. tolumnia** *Cr.* (49 f). Above dark brown, the posterior half of the hindwing with bright blue gloss. The stripe of scent-scales of the ♂♂ along the median of the forewing is distinct. On the under surface the ground-colour is more yellowish between the transverse stripes and only the distal half of the hindwing is light bluish violet. The eye-spots have silvery pupils, those of the last larger eye-spot are double and produced lengthwise. From Surinam, the Lower Amazon and Bahia.

catharina. **E. catharina** *Stgr.* Forewing brown, in the ♂♂ with a narrow stripe of hair-shaped black-brown scales along the median, otherwise without markings. Hindwing almost entirely blue, only the costal margin broadly, the distal and inner margins narrowly brown. On the under surface the basal half of the forewing and the anterior part of the hindwing are brown-grey, the distal margin of both wings and the inner margin of the hindwing light blue. Forewing with 3 narrow brown transverse stripes, hindwing with 2 which diverge posteriorly. Before the inner margin of the hindwing the outer stripe forms an angle. Forewing with 1, hindwing with 2 small eye-spots at the apex and a large one in cellule 2, between them the 2 yellow ellipses with silver dots as in *tolumnia*. 36 mm. From Jurimaguas in the Upper Amazon district.

hewitsonii. **E. hewitsonii** *Btlr.* (= *polla* *Möschl.*) (49 e). A small but beautiful species. Brown, the scent-scale stripe of the ♂ somewhat darker. The distal margin with blue reflection, the inner margin bright glossy blue. Hindwing at the base whitish, distally with blue reflection. Both wings with white fringes. Vein 1a on the ♂ hindwing somewhat thickened in the middle. Forewing beneath lilac, with 3 red-brown transverse stripes, 2 straight marginal lines and an eye-spot before the apex. Hindwing at the base lilac, distally blue with 2 transverse stripes, 2 eye-spots at the apex and a very large anal ocellus; between the eye-spots 2 brownish yellow ellipses with silvery blue centres. From the Lower Amazon (Pará). BUTLER mentions a form from the Upper Amazon (Ega, now Teffé) without naming it; it differs in having the ground-colour above and beneath more greenish. *polla* *Möschl.*, from Surinam, I regard as likewise a *hewitsonii*, as the figure and description almost entirely agree with this. The only difference in the figure consists in the absence of the elliptical spots on the hindwing. But in the text MÖSCHLER mentions these as present, so that this may be only an error in the figure. The 2nd difference that I find is in the marginal lines on the underside of the forewing. These are straight in *hewitsonii*, MÖSCHLER describes the inner of these lines as finely dentate. According to the figure which he gives of his *polla*, however, both are straight. Hence I can only regard *polla* as a synonym of *hewitsonii*.

Agaya Group.

E. agaya *Btlr.* (= *iris* *Fldr.*) (49 g). Above brown with dark brown reflection, which does not quite *agaya*, reach the margins of the wings. In the middle of the hindwing is placed at the end of the cell a tuft of brown hairs, in the vicinity of which the ground-colour is darker. Under surface violet-grey, forewing with 3 broad, straight, brown transverse stripes, 2 marginal lines and a black eye-spot, ringed with brownish yellow, before the apex. Hindwing with the same bands, 3 dentate lines before the distal margin and 3 eye-spots in cellules 2, 3 and 6, all bi-pupilled. In the ♀ the hair-tuft and the dark spot on the upperside of the hindwing are absent. From the Amazon (Tapajos), Colombia (Bogotá). Taken by FASSL in the Llanos of Medina in East Colombia (400 m.) in June.

Doxes Group.

E. doxes *Godt.* (= *erycina* *Btlr.*) (49 d). Above grey-brown with slight bluish grey sheen and with 2 *doxes*, dark brown marginal and a similar terminal line. On the hindwing are placed 2—4 round dark brown spots in cellules 1 c, 2, 3 and 5, the two last are often absent. The under surface is somewhat lighter and has 2 dark brown median lines, of which the outer one is more or less strongly angled on the hindwing. Forewing without eye-spots, hindwing with 5 or 6 elongate oval ocelli, red-yellow with black pupils, the inner half of which is densely sprinkled with white, silvery scales: the first and the last eye-spot are smaller than the rest. The number of the eye-spots varies, Prof. SEITZ has taken both examples with 6 and those with 5 ocelli flying at one place. From Brazil (Esperito Santo).

E. latia *Btlr.* Above brown, hindwing with a rather large ochre-yellow patch before the margin, 4 black *latia*, spots and undulate ochre-yellow submarginal line. Beneath brown, the distal part of the hindwing whitish, the margin itself brown, the median lines as in *doxes*, but further separated, hindwing with 6 large, oval eye-spots, ringed with red-yellow, the first 2 and the last 2 with large black pupils, dusted with silver at the proximal side, the other 2 with entirely silvery, oval pupils. From Bahia.

E. furina *Hew.* (49 d). Above brown, the hindwing with large white median area, at the margin of which *furina*, are placed some black spots. Forewing beneath brownish grey, with 2 reddish brown median bands, an indistinct grey-brown band in the marginal area with a silver spot in the middle and 3 brown marginal lines. Hindwing white with 2 reddish brown median bands. In the marginal area 6 red-yellow, elongated eye-spots form a broad band, enclosing in each cellule a large spot, which is distally black, proximally dusted with silver and conically pointed. At the margin 3 terminal lines. From the Amazons.

E. junonia *Btlr.* The forewing rather elongated, above brown, without markings, hindwing with three *junonia*, dark brown marginal lines and two light lines between them. Beneath brownish grey, with 2 brown median bands, the inner one scarcely reaching the middle of the inner margin of the hindwing, the outer terminating at the 6th eye-spot. These eye-spots are as in *furina*, but the first two smaller. From Tapajos (Amazons).

E. gemmula *Btlr.* Above brown, the hindwing at the anal angle lighter, with 1 or 2 black spots and 2 *gemmula*, black-brown or rust-brown marginal lines. Beneath lighter with 2 narrow, rust-coloured, widely separated median stripes and 2 angular marginal lines, brown on the forewing, rust-coloured on the hindwing; the distal margin itself narrowly black. Hindwing in the ♂ with 5, in the ♀ with 6 eye-spots, which, however, are more round than oval and are all broadly margined with yellow. The pupil of the 2nd and of the 5th eye-spot is distally black, proximally greenish silvery, the others have the pupils entirely greenish silvery. Rio de Janeiro.

Clorimene Group.

E. cosmophila *Hbn.* (♀ = *argenteus* *Swains.*) (49 f). Above grey-brown. The distal margin darker, *cosmophila*, before the margin of the hindwing a washed-out brownish ochre-yellow patch, in which are placed 1 or 2 round black spots with or without white central dot. 3 dark brown marginal lines. Beneath much lighter, with 2 widely separated, fine brown median lines and 3 dark brown marginal lines. Forewing in the marginal area with a row of brown spots, which are sprinkled with fine gold dots and enclosed both proximally and distally by an undulate brown line. On the hindwing is placed in the marginal area an ochre-yellow band, anteriorly narrow, posteriorly broad, on which are scattered 6—8 shining golden spots, and in cellule 2 a black spot with golden double pupill. Brazil (Parana, Bahia).

E. clementia *Btlr.* Above light olive-brown with indistinct dark median line and somewhat darker *clementia*, margin. Hindwing with 4 brown discal spots and 2 dentate marginal lines on a lighter ground. Beneath lighter with 2 dark brown median lines, diverging anteriorly on both wings, and 3 dark brown marginal lines. In the marginal area of the forewing are placed on a brown band a row of indistinct, silver-dusted eye-shaped spots. On the hindwing the disc is snow-white and traversed by a broad, ochreous, brown-margined band, which contains 3 black eye-spots with silver pupils (2 at the apex and one at the anal angle). Between and behind the eye-spots some elongate silver spots. From Chanchamayo in Peru.

- telesphora*. **E. telesphora** *Btlr.* (= *telesiphora Kirby*) (49 f). Above brown with 3 darker marginal lines, hindwing in the middle somewhat lighter, at the anal angle a dark brown spot. Beneath grey-brown with a row of black, silver-centred dots, enclosed in groups of 2 or 3 by brown rings, all again enclosed by an outer brown line. Hindwing light yellowish, at the margin reddish yellow with 3 black eye-spots with silver pupils as in the preceding species, and with several silver dots between and behind them, all margined with black. From the Marcapata (Peru).
- clorimene*. **E. clorimene** *Stoll.* Above brown with the distal margin lighter; hindwing with a narrow and a somewhat broader, dentate, pale yellow marginal stripe and a small eye-shaped spot at the anal angle. Beneath lighter, the distal margin brownish yellow, with narrow brown transverse lines and a broader brown stripe, which is intersected by a silver line. On the middle of the hindwing a broad light brown transverse band, through which runs a yellow-brown stripe. The marginal area is brownish yellow with 4 round silver spots, placed in black rings. Between and behind these rings are placed 3 silver streaks, which reach the distal margin. The distal margin itself is bordered by 3 black and 2 light yellow lines. From Surinam. Rare.
- pagyris*. **E. pagyris** *Godt.* (49 f). Above brown, forewing without markings, hindwing towards the anal angle whitish with 3 black dots, of which the middle is the largest. The forewing beneath brown with 2 rust-coloured transverse stripes and before the distal margin a row of silvery dots. The hindwing beneath in the basal half grey with the same 2 rust-coloured transverse stripes as the forewing, in the distal half yellowish with 7 silver spots, of which 5 are nearly round and placed parallel to the distal margin, the other two, and especially the one next to the inner margin, elongated and reaching the second rust-coloured stripe. Between the 4th and 5th of these round spots there is a large, oval, black spot, transversely placed and marked with 2 thick silver dots. On the grey distal margin are placed 2 blackish undulate lines. From Brazil.
- hygina*. **E. hygina** *Btlr.* (49 f). Pale olive-brown. Hindwing with a large red-yellow discal spot, surrounded by 5 blackish spots, of which the 3 smaller, anterior ones form a triangle. Beneath whitish brown, the transverse lines and silver spots similar to those of the preceding species, but the 2nd transverse line on the hindwing very irregular and the marginal area beyond it almost entirely filled up by the bright red-yellow bordering of the silver spots. From Brazil (Joinville).
- salvini*. **E. salvini** *Btlr.* (49 f). Grey-brown, basal half of the forewing lighter. The dark transverse stripes of the under surface show through distinctly above. The hindwing in the middle whitish with 2 round black spots at the apex and a larger one in cellule 2, between them two smaller ones nearer to the distal margin. Beneath white, forewing with 6 brown transverse stripes, the first oblique, the 4th and 6th connected anteriorly and posteriorly, so that they enclose the 5th stripe, on which is placed a row of silver dots. The hindwing has in the basal area 3 straight brown stripes and in the ochre-yellow marginal area, which is posteriorly bordered with brown, an angled row of silver spots, some of them in black rings. From Panama and Peru.
- itonis*. **E. itonis** *Hew.* (49 g). On the upper surface the space between the 3 black marginal lines of the hindwing is reddish brown, and towards the anal angle white. The large white area of the hindwing is divided on the under surface by 2 brown transverse lines, which are here present also on the forewing. For the rest the ground-colour beneath is grey-brown. In the marginal area of the forewing are further 6 parallel brown lines, posteriorly somewhat convergent; among them is a somewhat broader stripe, enclosing a row of silver dots. In the ochre-yellow marginal area of the hindwing, which is distally bordered by an undulate, proximally by a dentate, brown line, is placed at the anal angle a black eye-spot measuring over 3 mm., with thick silvery pupil, behind it 3 small silver spots and before it 6 somewhat larger ones. From the Amazons (Pará). — **quadrina** *Btlr.* is a form of *itonis* in which the white area of the hindwing has acquired an almost quadrate shape. The lines on the under surface of the forewing are more widely separated and not curved posteriorly. From Maranhão.
- libitina*. **E. libitina** *Btlr.* Above brown with a triangular black median spot and 2 marginal lines, hindwing at the distal margin lighter with 3 black marginal lines. Beneath much lighter. Forewing with 2 brown median and 3 submarginal lines, between them a white band with silver-pupilled spots. Hindwing with 2 ochre-brown median lines, the distal part orange with 8 silver spots, a short white, black-edged band and a similar dot before the margin, a black spot at the anal angle, divided by a white line, and with a small, black-bordered silver spot above it. 43 mm. From Brazil. Rare, only in coll. DRUCE.

Phocion Group.

- phocion*. **E. phocion** *F.* (= *areolatus Sm.-Abb.*, *helicta Hbn.*) (49 g). Above unicolorous brown. Under surface lighter, with the middle ones of the rust-coloured lines on each wing joined into a circle, in which are placed on the forewing 3 or 4 eye-shaped spots with blue pupils and yellow iris (sometimes indistinct), on the hindwing 6 similar elongated spots with oval pupils. The egg of this species is yellow-green; it has quite fine, rough surface. Larva green with the head scarcely elevated, but with long anal points. Pupa obtuse, rounded, deep green, the wing-cases margined with whitish. The larva lives on grasses and is difficult to breed. Habits

as in *cornelius*. The butterfly is distributed in North America from New Jersey to the Gulf of Mexico and Texas.

E. cornelius *F.* (= *gemma* *Hbn.*) (49 f). Above grey-brown, hindwing at the distal margin with 2 indistinct, blackish double spots. Under surface grey-brown, finely irrorated with brown, with 2 indistinct, brown median lines. Hindwing with 4 small black double spots close to the distal margin, with very small silver spots before, beside and behind them, and also a faint violet spot, with slight silver gloss, at their proximal side. Egg yellow-greenish white with rough surface, yields the larva in April or August after 3–6 days. The summer form of the larva grey-yellow-brown, the spring form light green with light whitish yellow lateral and longitudinal lines. Pupa yellow-grey or light blue-green, head with two slight points. On grass. The larva shows a preference for the vicinity of water, and is consequently often very common in wet places, sometimes in company with *hermes*. The species is distributed in North America from West Virginia to Mexico and also occurs in Guatemala.

E. argentella *Btlr.* (49 g). Above brown, the distal margin somewhat darker. Hindwing at the anal angle somewhat produced and with 2 dark spots at the distal margin in cellules 3 and 4. Beneath somewhat lighter. Forewing with three dark transverse lines, hindwing with 2 transverse lines, the 2nd strongly curved inwards and outwards, the ground-colour behind it lighter. In cellule 3 and in cellule 4 a black eye-spot with obliquely placed pupil composed of scattered silvery scales and with red-yellow ring. Before the eye-spots are placed in cellules 5 and 6 two round silver spots and behind them in cellules 1 b and 2 silvery streaks curved in S-shape. From the Volcan de Chiriqui (Panama), also from Guatemala and Costa Rica. The examples from Costa Rica have a yellowish spot on the hindwing.

E. rogersi *Godm.* Similar to *argentella*, but the hindwing has only one black spot close to the distal margin in cellule 4, containing a light central dot. The anal angle is more strongly produced. On the brown under surface are placed 3 dark brown transverse lines and between the 2nd and 3rd a grey-yellow band, extending across both wings. At the apex of the hindwing a larger and a smaller eye-spot and some silver spots above them. From the volcano of Irazu in Costa Rica.

E. philodice *Godm.* Above reddish brown. Hindwing at the anal angle, as in the two preceding, obtusely produced, with an ochre-yellow stripe behind the middle and 3 dark brown spots before the distal margin. Beneath reddish brown, with 3 rust-coloured transverse lines. Between the two outer of these lines is placed a straight, light reddish yellow band, which begins in a point not far from the costal margin of the forewing and terminates obtusely before the inner margin of the hindwing. Before the distal margin of the hindwing a row of dark brown spots, the middle two the largest, all with sagittate silvery pupils. The ♀ is lighter and has the wings more rounded. From Costa Rica (volcano of Irazu).

E. nelsoni *Godm.* Above light olive-brown, the distal margin broadly dark brown, enclosing indistinct black spots. Beneath the forewing is brown, with 3 darker transverse lines, hindwing with straight whitish yellow band, which runs from the apex to the inner angle, a brown median line, before the middle of the distal margin 2 black eye-spots with sagittate pupils and on both sides of these similar silver markings. The ♀ is larger, has the median area of the hindwing above almost ochre-yellow, the dark distal margin is narrower and the black submarginal spots stand out distinctly. On the under surface the light band of the hindwing is absent. From Cerro de Zunil in Guatemala. Elevations of 6000 ft.

E. clinas *Godm.* Forewing with the apex truncate, the distal margin is bluntly angled at vein 5, posteriorly concave. Hindwing sharply produced at the inner angle, undulate at the distal margin. Above brown, forewing dark brown at the costal and distal margins, hindwing with 3 round black spots before the distal margin in cellules 3, 4 and 5. Beneath lighter reddish brown with 3 common transverse lines, namely 2 median and one submarginal, hindwing with 2 black, yellow-ringed ocelli with double silvery pupils before the middle of the distal margin, with 2 round silver spots at the anal angle and a sagittate silver spot between the median veins. Mexico (Guerrero, Sierra Madre del Sur). 7–8000 ft.

Pyracmon Group.

The ♂♂ have a dark scale-spot between and behind the median veins.

E. pyracmon *Btlr.* (♂ = *hilaria* *Godm.* [Biol. Amer. pl. 107, fig. 11, 12]). ♂ above reddish brown, with the distal margin darker, and with large dark brown scale-spot behind the median of the forewing. Hindwing dark brown, at the margin lighter, with 2 black spots bordered with reddish brown in cellules 3 and 4 near the distal margin. In the ♀ the forewing above has a straight, the hindwing an undulate dark brown median line, which is distally margined with red. Hindmargin of the forewing and apex of the hindwing darker brown. Anal angle reddish with 3 black submarginal spots. The under surface in ♂ and ♀ is yellowish brown with 3 dentate transverse lines on the forewing and 2 on the hindwing. Before the middle of the distal margin on the hindwing 2 black eye-spots in red-yellow rings and with silvery double pupils. Before these a glossy grey stripe accompanied by some silver spots at the costal margin and a silver line at the anal angle. From Mexico, Guatemala, Costa Rica, Panama. The ♂ figured in the Biol. Centr. Amer. pl. 107, fig. 11 and 12 under the name *hilaria* is referred by GODMAN in the text to *pyracmon* and the name *hilaria*, which is thus set free, is applied to another species (the next but one).

pephredo. **E. pephredo** *Godm.* Is similar to *cornelius* *F.* and chiefly differs from it in the ♂♂ having on the upper-side of the forewing a dark brown scale-spot, of which there is no trace in *cornelius*. This wing is also more produced at the apex. From Mexico (Guerrero and Cordova) and from the central valleys of Guatemala.

hilaria. **E. hilaria** *Godm.* ♂ above pale brown; forewing below the median darker striped by reason of the scale-spot, hindwing with 2 blackish spots at the margin, which are sometimes indistinct. Beneath lighter, dusted with brown, forewing with 3 undulate, hindwing with 2 rust-coloured lines, a row of silver spots at the margin and 2 black double spots in the middle of them, besides an ochre-yellow transverse line before them. The ♀ is similar to the ♂, but has sometimes on the upperside of the forewing two rust-coloured lines, on the hindwing one. From Mexico and Panama.

henshawi. **E. henshawi** *Edw.* Above reddish brown, the ♂ with the dark brown scale-spot of the preceding species behind the median of the forewing. The distal margin of both wings is faintly dusted with darker, in the middle of the distal margin of the hindwing two blackish spots. The body is black-brown. The under surface is similar to that of *E. cornelius*. 41 mm. — The egg is broader than high, almost spherical; at the base broadly flattened, of green colour and with very fine, little raised net-work on its surface. Concerning larva and pupa nothing is known. South Colorado and Arizona, distributed in the Rocky Mountains. Mexico (N. Sonora, Jalisco, Pinal, near Puebla, very common at 8000 ft. in a pine forest).

Mycalesoides Group.

mycalesoides. **E. mycalesoides** *Fldr.* (49 g). The wings are rounded and above unicolorous dark brown. The under surface is nearly as dark, the two median lines form large undulate curves, the inner is indistinct. The 3 marginal lines are not undulate, but run parallel with the smooth distal margin. On the forewing 2 eye-spots, in cellules 2 and 5, the former twice as large as the latter. They are black with white pupil and yellow ring. On the hindwing 4 similarly coloured eye-spots, two small ones in cellule 1 c, that in cellule 2 the largest. From Colombia (Bogotá). The figure is from FELDER's type in the Tring Museum. The species, which was described by FELDER as a *Pronophila*, was referred by THIEME to *Pedaliodes*. According to our figure it seems to me to belong to *Euptychia*. *mycalesoides* *Smith & Kirby* has nothing to do with this species.

Addenda.

lupita. **E. lupita** *Reak.* ♀ above brown with 2 narrow dark brown marginal lines. Beneath lighter with 3 marginal lines, the proximal one the broadest. Forewing with 2 brown transverse stripes between middle and base, a short stripe between them and a black eye-spot with light brown ring before the apex. Hindwing with 3 indistinct brown transverse lines through the middle and several shorter ones towards the base, a black eye-spot ringed with yellow-brown at the apex and two at the anal angle. Antenna rust-coloured. 32 mm. From Mexico (Vera Cruz and Orizaba).

moneca. **E. moneca** *Schaus.* ♀. Above brown with 3 dark marginal lines and a dot at the margin of the cell, the outer median line angled before the costa of the forewing, on the hindwing incurved before the middle, the inner median line indistinct, 2 eye-spots before the anal angle, the posterior the smaller. Beneath lighter brown, striated with darker, the lines all distinct. Forewing with a small eye-spot before the apex, hindwing with 6 ocelli, those in cellules 2 and 5 with silvery double pupils, a small similar one in cellule 4, smaller eye-spot with single pupils in cellules 1 b, 3 and 6. In the ♂ the eye-spots are smaller. 29—33 mm. From Castro in Parana and from Novo Friburgo.

burgia. **E. burgia** *Schaus.* ♀. Above brown, with straight, black distal median line, reaching to the anal angle of the hindwing, and with 3 marginal lines. Beneath olive-brown, the first transverse line angled and not reaching the costa of the forewing, the 2nd straight and distally bordered with lilac; 3 fine marginal lines. Forewing with 4, hindwing with 5 small ocelli. 40 mm. From Novo Friburgo. Will belong to the *Hermes* group.

borasta. **E. borasta** *Schaus.* ♂. Above brown with 3 marginal lines, a large and a small eye-spot at the anal angle of the hindwing with broad yellow rings and silver pupils. Beneath grey-brown, finely sprinkled with brown, with 2 brown median lines, the inner one curved distad on the forewing, the outer proximad. Distally to the latter is placed a white band, traversed by a brown shade. On the hindwing this becomes ochre-yellow at vein 3. On the forewing is placed in this shade an indistinct eye-spot, on the hindwing at the apex two black eye-spots with yellow rings and silver pupils and in the ochre-yellow part of the band, at the anal angle, 2 black spots with silver pupils. At the margin 3 dark lines as above. From Novo Friburgo (Brazil).

12. Genus: **Pindis** *Fldr.*

Approaches the genus *Taygetis*, but the eyes are naked, the palpi elongate, roughly scaled to the tip, the middle joint $1\frac{1}{2}$ times as long as the head, sparsely bristled, the terminal joint similarly formed, $\frac{1}{3}$ as long, obtuse. Wings broad, rather short. Forewing at the apex concavely truncate. Hindwing at the inner angle rather convex, the posterior part of the distal margin strongly dentate. The only species, which occurs in Mexico and Guatemala, is referred by most authors to *Euptychia*.

squamistriga. **P. squamistriga** *Fldr.* (= *Eupt. zabdi* *Bltr.*) (50 a). Above brown, forewing somewhat lighter at the apex. Beneath likewise lighter, dotted with brownish. The first transverse line is absent on the forewing.

the 2nd forms an obtuse angle on the hindwing. In the marginal area of the hindwing 6 small eye-spots, only the last but one somewhat larger. Rare in Guatemala (Choctum), not rare in West and Central Mexico.

13. Genus: **Cyllopsis** Fldr.

Likewise near *Taygetis*, the eyes naked. The palpus much more slender, its 2nd joint more than twice as long as the head, the terminal joint pointed. The distal margin of the forewing with rounded projection below the apex, that of the hindwing almost right-angled at vein 3 and obtusely angled at the anal angle. For the rest the distal margin of the hindwing is slightly undulate. The upper discocellular vein of the forewing is entirely absent. The genus has a similar range of distribution to the preceding, and likewise contains only one species, referred by many authors to *Euptychia*.

C. hedemanni Fldr. (= Eupt. ithama Bthr., ithamna Godm. [in tab. Eupt. vetones Godm.]) (50 a). ♂: *hedemanni*. above brown with a small black spot at the margin of the hindwing above the projecting angle. Beneath lighter, finely striated with brown all over, with 2 darker median stripes on both wings and a submarginal line on the forewing. A black eye-spot with double silvery pupil and surrounded by a light brown and a dark brown ring is placed in cellule 3 on the hindwing close to the distal margin. Beside it at the distal margin several silvery double dots. The ♀ is somewhat larger and bears on the upperside of both wings a rust-red line behind the middle, according to the figure in GODMAN also a second similarly coloured line before the middle. Rare. From Mexico, Guatemala, Costa Rica. Elevations of 2000—7000 ft.

14. Genus: **Oressinoma** Westw.

Distinguished from all the other American Satyrid genera by not having the costal vein of the forewing inflated, while on the other hand the median and submedian are strongly swollen at the base. The first median vein arises just behind the swelling of the median stem. The eyes are naked. The shape of the wings is longer than broad. The area of distribution is the west of tropical South America.

O. typhla Dbl. & Hew. (50 a). A species easy to recognize by the broad white band above and beneath, *typhla*. The basal area is above unicolorous and beneath marbled with brown and white. The dark brown distal margin is beneath divided for its entire length by a tri-coloured stripe, strongly dentate on the hindwing. This stripe is distally orange, proximally white, the two colours separated by a black line. Rather common in Colombia, Venezuela, Ecuador and Peru; rare in Costa Rica. — **sorata** Godm. & Salv. is a form of *typhla* in which *sorata*. the white band on both wings is narrower. In the distal margin are placed on the hindwing above white crescents, on the forewing a whitish line, which markings are also often indicated in *typhla*. From Bolivia (Calcan).

15. Genus: **Paramecera** Bthr.

Costal and median of the forewing inflated at the base, costal margin convex, distal margin slightly excised, upper discocellular short, middle discocellular longer and obliquely placed, behind the median in the ♂♂ a patch of dense, compact scales. Hindwing with the costa convex, distal margin sinuate, inner margin excised at the anal angle. Eyes somewhat hairy, palpus strongly haired, the terminal joint slenderer and directed more anteriorly than in *Euptychia*. Antenna short, the club pear-shaped, hollowed out on the underside. The single species is Mexican and resembles the European *Pararge megera*.

P. xicaque Reak. (= *Neonympha epiniphele* Fldr.) (50 a). Reddish brown, distal margin and the *xicaque*. spot behind the median darker. Forewing with 2 or 3 round black spots, hindwing with 5, the distal margin of the hindwing is reddish at the anal angle and has 2 dark brown, parallel marginal lines. Beneath the ground-colour is more yellowish with 2 strongly dentate median, a submarginal and 2 marginal lines. On the forewing 2 or 3 eye-spots, the first large, the last small, and 6 eye-spots on the hindwing, all of fairly uniform size. The ♀ is somewhat larger, otherwise similar to the ♂, except that the brown spot behind the median on the upperside is absent. The species was formerly very rare, but has recently been found more commonly. It inhabits the higher mountain regions of Mexico (Oaxaca, Jalapa, Puebla, Misantla, Bolannos, Maltrata, Guerrero, Vera Cruz, etc.). The figure is from FELDER's type in the Tring Museum.

16. Genus: **Satyrodes** Scudd.

Only the costal of the forewing is somewhat thickened or slightly swollen, the first 2 subcostal veins arise before the end of the cell, the upper discocellular is wanting. The margin of both wings is rounded. The eyes are slightly hairy, the palpus slender, beneath hairy, the 3rd joint short and pointed. One North American species.

S. canthus L. (= *euridice* Joh., *cantheus* Godt., *boisduvalii* Harr.) (50 a). The round brown spots *canthus*. of the upper surface are replaced beneath on both wings by a row of black, white-pupilled eye-spots ringed

with brown and yellow. The ground-colour of the under surface is yellowish grey with 2 brown transverse lines through the middle, the first straight, the second dentate. Between the two a short streak on the transverse vein. At the margin two yellow terminal lines and between these a brown one.—The egg is smooth, with whitish gloss, at the base flattened, above round. The larva deep green with red points on the head, yellow lateral stripe and light longitudinal lines. The pupa is more slender than that of *Enod. portlandia*, light grass-green with the edges of the wing-cases yellow and with yellow subdorsal and lateral lines on the abdominal part. The anterior end is pointed. The larva hibernates and feeds till the beginning of June on Cyperaceae, etc. The butterfly flies in July in wet grassy places and is locally common in the northern United States, but also occurs in Canada and the higher, cool mountain-valleys of Carolina.

17. Genus: *Coenonympha* Hbn.

The principal distinguishing character of this genus, which consists only of small butterflies, is that the costal, the median and the submedian of the forewing are all strongly swollen at the base. The palpus is densely clothed with erect hairs, the terminal joint porrect. Antenna short, but with relatively long club. Eyes naked. Both wings rounded at the distal margin. The species of this genus are distributed over the northern temperate zone of the Old and the New World, but the American species occur for the most part only in the western states of the Union. On the *Coenonympha* of the Old World cf. vol. I, p. 142—147, pl. 48; further vol. IX, p. 301.

- california*. **C. californica** Dbl. & Hew. (50 a). This species may be known by its white, unmarked upper surface, which is only somewhat dusted with blackish at the base. The under surface is finely dusted with brownish, especially on the hindwing, and shows a whitish dentate band through the middle and behind it 1 ocellus on the forewing and 3 on the hindwing. The ♀ is somewhat larger and beneath darker than the ♂. The butterfly occurs in a succession of broods, and is common in sandy and grassy places. — **galactinus** Bdv. (50 b) is the winter form of *california*. It is much lighter beneath and the eye-spots before the margin are much smaller. The egg is almost spherical, light coloured, with very low, fine ribs. Larva slender, elongate, with round head, green or brown, longitudinally striped. Pupa stout and short, obtuse, green or brownish, the wing-cases marked with oblique black stripes. The species is distributed along the whole western coast of the United States from *ceres*. Vancouver Island to California. — **ceres** Btlr. (= *eryngii* H. Edw.) is a form of *california* with the upperside pale ochre-yellow and the forewing beneath reddish with the base lighter. Beneath in addition the costal margin of the forewing and a broad band before the apex are grey, a transverse band behind the middle yellowish rust-coloured; the hindwing is pale grey with the base brownish and bears an irregular pale yellow median band and 2 black dots before the margin enclosed in light yellow rings. From California. — **pulla** H. Edw. is a form with the upper surface entirely fawn-coloured with blackish shading at the base. The under surface is dull brown with a reddish tone in the discal area. On account of the dark ground-colour the markings are only indistinct. From San Mateo, California. Appears to be a dark aberration of *california*, as only 1 example was known to the author.
- elko*. **C. elko** Edw. (50 b). Above ochre-yellow with whitish fringes and the inner margin of the hindwing whitish. Base somewhat dusted with blackish. On the under surface the forewing is somewhat lighter ochre-yellow, costal margin and apex finely dusted with brown, with a lighter half-band. Hindwing quite finely dusted with brown, with light yellow half-band at the middle of the costal margin. Above and beneath in both *ampelos*. sexes without eye-spots. From Nevada and Washington. June. — **ampelos** Edw. (50 b) is a form of *elko* which differs in the somewhat stronger brown dusting on the under surface and further in having the light band on the under surface prolonged or continued by separate spots. Distributed from Nevada westwards to Vancouver Island. — The egg is conical, yellow-green, the surface less ribbed than in *galactinus*. The young larva is similar to that of *galactinus*, with only slight differences in the colouring; when full grown it is 18 mm. in length, laterally yellow-green, with small white tubercles each bearing a short hair, posteriorly with 2 short, conical reddish tails. The pupa is shaped like that of *galactinus*, 10 mm. in length, green with black stripes and dots. The period from oviposition to the appearance of the imago is in the summer 49 days.
- ochracea*. **C. ochracea** Edw. (50 b). Above unicolorous, bright ochre-yellow, with the markings of the under surface showing through faintly in places. Underside of the forewing reddish yellow, before the apex with a small black, white-pupilled ocellus in a light yellow ring, and before this a light yellow band. The hindwing is dusted with yellowish brown and shows at the base 2 light yellow spots, in the middle a light yellow dentate band and before the distal margin one or sometimes several small, eye-shaped, black dots in light yellow rings. Distributed in the western part of North America from British Columbia to Arizona and eastwards to Kansas.
- brenda*. **C. brenda** Edw. Above light reddish yellow, without markings, beneath somewhat yellower; the forewing with a reddish transverse line beyond the middle, anteriorly straight, posteriorly curved. The hindwing has a similar line, which is anteriorly angled, posteriorly curved. Forewing with a large round black spot before the apex and a dot between medians 1 and 2. Hindwing with a more or less complete row of small dots. The ♀ is on the under surface darker, with an admixture of grey, the spot before the apex of the forewing has a white pupil and on the hindwing some of the dots are absent. From Los Angeles. *brenda* is regarded by

DYAR as a synonym of *ochracea*, by SKINNER on the contrary as a good species; as I do not know the species in nature, I leave the question undecided.

C. kodiak *Edw.* is above light yellowish grey with a pale yellow transverse band beyond the middle of both wings. The basal area of the hindwing is more brownish yellow-grey. The upper surface resembles that of *california* *Dbl.* except that *kodiak* is much darker. The same is the case on the under surface. From Alaska. Rare. — **yukonensis** *Holl.* has been described as a form of *kodiak*. The upper surface of the forewing is light ochre-yellow, the distal and costal margins grey, an indistinct white band behind the middle; hindwing dark grey, somewhat yellowish, with a dirty white, interrupted median band. On the under surface the forewing is dark ochre-yellow, sometimes chestnut-brown, shading off into grey before the apex and at the distal margin. The white band is here sharply expressed. A small eye-spot with white pupil before the apex. Hindwing blackish grey, distally lighter, with sharp white median band. A row of eye-spots is faintly indicated before the margin. The ♀ is somewhat larger and altogether lighter. Likewise from Alaska. July. It may be a separate species.

C. pamphiloides *Reak.* Authors are of different opinions as to the specific rights of this butterfly. Some consider it to be the same as the European *pamphilus* *L.*, others regard it as different. As I do not know the form in nature I cannot express a definite opinion. The entire upper surface and the under surface of the forewing are similar to those of *pamphilus* (vol. I, pl. 48 g). But according to the figure which HOLLAND gives in his Butterfly Book, the ground-colour of the hindwing beneath is not greenish grey but lighter, more yellowish grey, in the basal area are placed 2 light yellow spots, a dentate light yellow band runs through the middle, and before the margin there is a row of 6 round light yellow spots with black central dots. These dots are sometimes absent. The ♀ is larger than *pamphilus*. From Utah and California.

C. inornata *Edw.* (50 b). Above brownish ochre-yellow, in the middle somewhat lighter. Costa of the forewing and distal margin of both wings grey. Beneath the forewing shows a distinct ocellus and a narrow white band. The hindwing is grey with a short dentate white band through the middle and before the distal margin an indistinct red-yellow band, interrupted at the veins. This species is regarded by various authors as a form of the European *tiphon* *Rott.* (vol. I, pl. 48 h). But the latter has on the underside of the hindwing a row of six black, white-pupilled ocelli in light yellow rings and HOLLAND is therefore probably right in considering *inornata* as a separate species. From Montana, Minnesota, British North America and Newfoundland.

C. haydeni *Edw.* (50 b). One of the largest species. The body is dark brown, the antenna black ringed with white. The upper surface is brown, inclining to grey. The fringes of the forewing are somewhat lighter, those of the hindwing grey. The upper surface is without eye-spots. The under surface is lighter, yellowish grey. Before the distal margin on both wings is placed a thick silver line, which is interrupted at the veins. On the hindwing there is beside this line a row of 6 eye-spots, decreasing in size posteriorly, the last ocellus sometimes very small and then scarcely noticeable. These ocelli are black with red-yellow rings and white pupils. From Montana, Idaho, Wyoming and Colorado.

18. Genus: **Neominois** *Scudd.*

The costal and inner margins of the forewing are straight, the distal margin rounded. The costal margin of the hindwing forms an obtuse angle near the base. The costal vein of the forewing is strongly swollen at the base, the median on the other hand only somewhat thickened. The upper discocellular of the forewing is absent. The antenna is comparatively short, the underside of the palpus very hairy. The two forms of the genus occur in the mountainous western parts of the United States.

N. ridingsii *Edw.* (50 b). Upper surface grey-brown with a white macular band varying somewhat in breadth. The eye-spot at the anal angle of the hindwing is sometimes only punctiform or entirely absent. On the under surface the basal half of both wings is whitish, finely striated with brown, with 2 dentate brown transverse bands through the middle. In the ♀ the eye-spots on the upperside of the forewing are very large and there are more of them. I have before me a ♀ with 4 ocelli forming a continuous row; the first measures 4, the last 3 mm., the others are smaller. — The egg is whitish and almost spherical. The larva yellow-brown, much narrower posteriorly, with rounded head and dark nebulous lines. Pupa obtuse, well rounded, brown, at the anterior margin dark green, at the first spiracle a quite small, spinose, club-shaped process. It lies in a sandy hole on the ground. The butterfly occurs at elevations of 5—7000 ft. and is not rare locally. In Colorado and the western states. — **dionysius** *Scudd.* (= *ashtaroth* *Streck.*) is a somewhat larger form of *ridingsii*, differing in the lighter, brownish white colour of the basal part of both wings and the broader and lighter submarginal bands. On the under surface the median band of the hindwing is narrower and more sharply dentate and the proximally directed teeth of the brown border likewise more pointed. From Utah, Colorado and Arizona.

19. Genus: **Cercyonis** *Speyer*. (= *Satyrus* *Westw.* pt.)

The costal margin of the forewing is more strongly, the distal margin more weakly rounded, the inner margin in most species fairly straight. The distal margin of the hindwing is slightly undulate, the posterior part of the inner margin somewhat incurved. The palpus is long, projecting by more than the length of the head, densely haired, the eyes naked. The club of the antenna is thin and long, not sharply defined. The mid-tibia is scarcely spinose. The costal and median of the forewing are strongly swollen at the base, the submedian on the other hand only somewhat thickened. In the forewing the first 2 subcostal veins arise before the end of the cell. The ♂♂ of most species have a more or less distinct stripe of scent-scales on the upperside of the forewing behind the median. Some of the butterflies are of medium size, but some considerably smaller. They inhabit North America. Single species are very similar to European forms of the genus *Satyrus* and hence are referred to *Satyrus* by most American authors.

- pegala*. **C. pegala** *F.* (50 b, c). The largest species of the genus. Above brown, with broad ochre-yellow band on the forewing, on which are placed in the ♂ only one eye-spot, in the ♀ two. On the under surface the brown ground-colour is finely striated all over with dark brown and the hindwing has here 6 ocelli. Sometimes one of these is absent. The butterfly occurs in the southern part of the United States about as far north as to New Jersey. — **alope** *F.* (50 c) is the most widely distributed form in North America. It is somewhat smaller, and has in both sexes above and beneath two eye-spots on the forewing. The scent-scale spots on the upperside of the ♂ forewing in cellules 1a, 1b and 2 are distinct. The number of the ocelli on the hindwing varies. — *maritima*. **maritima** *Edw.* is a form similar to *alope* in which the under surface is darker and the band more orange-coloured. *texana*. It occurs in Long Island and Martha's Vineyard. — **texana** *Edw.* (= *incana* *Edw.*), a further form belonging here, has light brown ground-colour and ochreous bands. The spots on the underside of the hindwing are larger than in the other forms. From the extreme south of the United States. — **nephele** *Kirby* (50 c) was long regarded as a good species, but is now recognized as a dimorphic form of *alope*. In it the yellow band is much darkened by brown dusting and only to be recognized as a band in the ♂ on the underside of the forewing. On the upper surface of the ♂ and on both sides of the ♀ only the brownish yellow rings round the black eye-spots persist. It is the northern form of the species, and is of general occurrence in North America north of the latitude of New York from the Atlantic to the Pacific Ocean, but to the south of this only occurs on the heights of the Alleghany Mountains. — **olympus** *Edw.* (50 d) is a form similar to *nephele*, in the ♂ somewhat darker, in the ♀ somewhat lighter, and with only a few eye-spots on the underside of the hindwing. It is common in the States west of the Mississippi. — **ariane** *Bdv.* (50 c) is a small form, similar to *alope*, but darker. The eye-spots stand out distinctly on the upper and under surface of the wings. From British America, Oregon and the north-western part of the United States. — **boopis** *Behr* (50 d), a form belonging here, has on the upperside of the hindwing no eye-spots, on the underside only 1 or 2 indistinct ones. The scent-scale spots of the ♂♂ are distinctly visible on the upperside of the forewing between the 2nd median vein and the inner margin. Common on the Pacific coast in the states of Washington, Oregon and North California. — In the form **baroni** *Edw.*, which I also regard as belonging here, the yellow rings of the eye-spots above are almost suppressed, the under surface is more reddish brown, in consequence of which the transverse lines in the middle stand out distinctly. — **gabbi** *Edw.* is another form which is referable to this species. It is of the size of *nephele*, the ♂ dark reddish brown, the ♀ pale fawn-coloured. Beneath the distal half of the wings in the ♀ is pale grey-brown, the proximal half only a little darker. On the hindwing are placed here 6 black, white-pupilled eye-spots in yellow and brown rings, the 2nd and 5th larger than the rest and the last 3 in a straight row one above another. From Oregon and Utah. — The egg of *alope* is obtusely spherical, as high as broad, above strongly ribbed, the surface covered with minute pitting and of a lemon-yellow colour. The larva hatches in 14—28 days according to the temperature. The young larva is rose-coloured, hibernates small, afterwards becoming greenish, and when full-grown is 40 mm. in length, light green, whitish on the dorsum, with light yellow, dark-bordered lateral stripe and whitish, dark-shaded subdorsal line. It lives on species of grass. Pupa blue-green, finely marked with white. The butterflies fly in July and August in open woods and grassy places, are locally very common and visit especially the flowers of *Spiraea tomentosa*.
- meadi*. **C. meadi** *Edw.* (50 d) is an independent species, recognizable by its smaller size and the reddish yellow median area on the underside of the forewing. The ♂ is dark brown above, with 2 black eye-spots in broad red-yellow rings on the forewing in cellules 2 and 5, only the anterior having a white pupil. The area round the eye-spots is often more or less strongly dusted with red-yellow, especially the space between them. On the hindwing above there is only one ocellus. In the ♀ the eye-spots of the forewing above are placed on a red- or ochre-yellow band, which extends basewards into the cell, and then gradually passes into the brown ground-colour. — The egg is strongly ribbed at the sides, pitted above, rose-coloured. The larva is green, slender, the head rounded, light longitudinal lines on the back and yellow lateral and subdorsal line. It lives on grass. Pupa obtusely rounded, light green. The butterfly flies in July and August; it is rather local, but common in places, is fond of visiting Compositae, especially a species of *Senecio*. Localities: Colorado, Montana, Utah and Arizona.

C. oetus *Bdv.* (50c). Above grey-brown, the apex of the forewing lighter, fringes grey, 2 brown marginal lines; the forewing with 2 small round black-grey spots in yellow-brown rings, in the ♂ with brown scent-scale stripe. Beneath yellowish grey, the basal half finely striated with brown, forewing with 2 black-brown eye-spots with ochre-yellow ring and white pupil. The anterior eye-spot is very large, extending over 3 cellules, the posterior is smaller. Both wings with 2 brown marginal and a submarginal line. From North California *oetus*.

C. charon *Edw.* (50d). Above brown, forewing in the ♂ with 1 or 2 black spots without rings, in the ♀ lighter with 2 eye-shaped spots in ochre-yellow rings. The dark brown scent-scale spot of the ♂ extends into cellule 3. On the under surface there are in both sexes eye-spots with yellow rings and white pupils instead of the black spots. Both wings are beneath brown, finely striated with dark brown all over, hindwing with dark brown, dentate median line and a row of more or less distinct, small, black, white-pupilled eye-spots. — Egg, larva and pupa are almost exactly as in *meadi*. The longitudinal lines of the larva are commonly purer white, the pupa sometimes black-brown or black-grey. The butterfly flies near the ground in grassy places and visits especially composites. Flies in June to August. Locality: the west of North America, from British Colombia to New Mexico. — **sylvestris** *Edw.* (= *phocus* *Edw.*) is according to HOLLAND a form of *charon*, with the eye-spots on the underside of the hindwing indistinct. (KIRBY in his Catalogue has given *sylvestris* *Edw.* as the oldest name for *oetus* *Bdv.*) The figure called *sylvestris* on pl. 50d belongs to *sthenele*. *charon*.

C. paulus *Edw.* (50d). On the upper surface similar to *charon*, but beneath always with 2 eye-spots on the forewing in ♂ and ♀. The hindwing has also one or 2 eye-like spots on the upper surface. On the under surface the hindwing is grey in the distal third, finely striated with dark brown, proximally bordered by a dark brown dentate line. In this marginal area are placed 5 or 6 black eye-spots with white pupils and yellow and brown rings. From California and Nevada. *paulus*.

C. sthenele *Bdv.* (50e, the form erroneously called *sylvestris* on pl. 50d also belongs here). Above brown with 2 round black spots on the forewing, of which in the ♂ only the upper is pupilled with white, but in the ♀ both have white pupils and brownish yellow rings. The species is recognizable by the broad, dentate dark median band on the underside of the hindwing, which is strongly constricted in two places and both proximally and especially distally is broadly margined with whitish grey. In the marginal area a row of eye-spots, sometimes indistinct. From California. *sthenele*.

C. wheeleri *Edw.* (= *hoffmani* *Streck.*). Similar to *nephele*, but larger, especially the ♀. Ground-colour brown. The forewing above has 3 eye-spots. The apical eye-spot is double, consisting of a larger ocellus in cellule 5 and a smaller in cellule 4. Both are surrounded by a common narrow light yellow ring. In the ♀ these eye-spots are placed on a broad light brown band and 2 eye-spots are also present on the hindwing above before the anal angle. The under surface is not brown as in *nephele*, but in the ♂ light grey, in the ♀ light yellowish grey, finely striated with brown. Forewing with a dentate median stripe and 3 nearly straight marginal lines, all brown. Hindwing with a broken and a second dentate median stripe and 3 undulate lines at the margin. In the ♂ there is on the forewing a small 4th eye-spot in cellule 3, these eye-spots are surrounded in pairs by 2 yellow rings with brown exterior ring. In the ♀ these brown rings are particularly large, measuring 7 mm. in diameter. On the hindwing beneath there are 6 black eye-spots with white pupils in light yellow and brown rings. Nevada. *wheeleri*.

C. behrii *Grinnell*. Much smaller than the preceding, only 43 mm. in expanse. Brown, forewing with a black, white-pupilled apical ocellus, margined with somewhat lighter brown, a black spot in cellule 2, an indistinct submarginal and a brown marginal line. Hindwing with black anal spot. Beneath forewing wood-colour, marbled with darker, with 2 black, white-pupilled ocelli, an undulate brown median band, a broad band between the eye-spots and the distal margin and 2 marginal lines likewise brown. The hindwing is more mixed with grey. A broad band traverses the middle. In the marginal area is placed a row of 6 eye-spots, the 2nd and 5th large, the rest small. The 3rd eye-spot has no pupil, the others are all white-pupilled. The broad band behind the middle and the 2 marginal lines are as on the forewing. The ♀ measures 46 mm. and only differs from the ♂ in having the black spots on the upper surface all pupilled with white. From Tamalpais, a mountain in Marin County on the Bay of San Francisco in California. In the collection of the Californian Academy of Sciences. Collected by BEHR. *behrii*.

C. glaucope *Fldr.* (= *friedenreichi* *Stgr.*) (50d). Above brown with a broad red-yellow band on both wings, in which are placed on the forewing a double ocellus before the apex and a single one in cellule 2, on the hindwing sometimes a black dot in cellule 2. The under surface is lighter and striated with dark brown, on the forewing with the same band and eye-spots as above, but on the hindwing with a narrow, almost straight ochre-yellow stripe, extending from the middle of the costal margin nearly to the anal angle. Behind this stripe are placed on the costal margin 2 dark brown spots. Brazil (provinces of St. Catharina and Parana). — **boenninghauseni** *Foetterle* (50e) is only a form of *glaucope* in which the distal half of the hindwing beneath is not striated with dark brown and the light yellow median stripe is distally widened. From Itatiaya. *glaucope*. *boenninghauseni*.

gustavi. **C. gustavi** Stgr. (= *Satyrus g. aut.*) should perhaps be placed here. Above dark smoke-brown with a long light brown macular stripe before the margin, in which are placed on the forewing a black eye-spot before the apex and 1 or 2 small ones above the anal angle and also on the hindwing some black spots. The fringes are a mixture of light and dark grey, chequered with black. On the under surface the forewing is partly blackish, partly brownish grey or light grey with 4 short, streak-like yellow-brown longitudinal stripes. The ocellus in the first of these stripes is larger than on the upper surface. The hindwing beneath is dirty grey with sharply prominent light grey veins. The yellow-brown longitudinal stripes of the upper surface are here only very short. In the Bolivian highlands at 4000 m., discovered by GUST. GARLEPP.

20. Genus: **Oeneis** Hbn.

The chief distinguishing character of this genus is that none of the veins are swollen, but only the costal of the forewing is much thickened at the base. Otherwise the neuration is similar to that of the preceding genus. The costal margin of the forewing is fairly straight, the cell long and narrow, the apex produced, hence the distal margin rather oblique. The ♂♂ of several species have a stripe of scent-scales behind the median on the upperside of the forewing. The palpus is long, with bristly hairs, the antenna short, with the club gradually thickened. The butterflies are of medium or below the medium size and of yellow, yellow-brown or grey-brown colour, nearly all with the underside of the hindwing light and dark marbled and bearing a dark median band. Their area of distribution embraces the arctic zone and the higher mountains of the temperate zone in the northern hemisphere, both in the Old and the New World. Some species are common to both. Concerning the Old World *Oeneis* cf. vol. I, p. 117—121, pl. 40; also vol. IX, p. 311.

nevadensis. **O. nevadensis** Fldr. (= *gigas* Btlr., *californica* Bdv.) (50 e). The largest and most beautiful species of the genus. Recognizable by the reddish ochre-yellow ground-colour of both wings. The scent-scale stripe of the ♂♂ is very distinct. In the ♂ either 1 or 2 eye-spots are present on the forewing above and beneath. The second of these is placed in cellule 2. In the ♀ there are usually 2 eye-spots, but sometimes 3, the third placed in cellule 3. From California, Oregon, Washington and Vancouver Island. From 2000 to 7000 ft. — *iduna*. **O. iduna** Edw. (50 f) is a somewhat larger and lighter form of *gigas*. The ground-colour is of a much lighter ochre-yellow, especially on the hindwing, and also on the underside of the forewing. The brown striation on the under surface of the hindwing is much finer, so that the white ground-colour stands out much more strongly. The brown dentate lines are thinner and the distal margin narrower. From the coast-districts of northern California. — The egg is irregularly and shallowly ribbed, with pale rings. It hatches in 9 or 10 days. The larva is rosy ochre-yellow, with darker dorsal line and subdorsal stripes, between the two lighter longitudinal lines. On grass. Concerning the pupa nothing is known, as EDWARDS did not bring the larvae to pupation.

macouni. **O. macouni** Edw. This interesting species is quite like *nevadensis* Fldr. in size, colouring and markings, but is distinguished from it at once by the complete absence of the large brown scent-scale spot on the upperside of the forewing in the ♂, and further by the presence of a broad dark brown median band on the underside of the hindwing. The species has hitherto been found only in two localities in North America, being rather common at Nepigon on the northern shores of Lake Superior in Canada, from the end of June to the middle of July, in the damp, wooded grass-lands near the river of the same name. The second locality is Morley, Alberta, at the eastern foot of the Rocky Mountains, where the species was found by MACOUN. — The larva is figured by HOLLAND and is 35 mm. in length. The head is round with 4 vertical black lines, the body has on the dorsum several narrow dark longitudinal lines, at each side a broad subdorsal stripe and above the legs a dark lateral stripe with a light one above it. It lives on grass.

chryxus. **O. chryxus** Dbl. & Hew. (= *calais* Scudd.) (50 f). Similar to *nevadensis*, but smaller, the forewing somewhat more pointed, its costal margin marbled with light and dark, the distal margin in the ♂ consists only of a narrow brown marginal line, the scent-scale spot brownish grey. Forewing in ♂ and ♀ with 2 eye-spots and a small black dot between them, hindwing with a similar anal dot. On the under surface the anterior half of the forewing is finely striated with brown, and also the whole of the hindwing, on which 2 dentate stripes enclose a broad dark median area. — The egg is whitish, the larva grey-brown with dark nebulous lines, the pupa is rounded, anteriorly black-brown, posteriorly yellowish. The butterfly is widely distributed in the Rocky Mountains from Colorado, where it is met with at elevations of 9000 to 12000 ft., to the Canadian province of Alberta, where it occurs at from 4000 to 7000 ft. It flies at the end of June and in July. *calais* Scudd., which was described by the author as coming from Hudson's Bay, is now generally regarded as a synonym of *chryxus*.

ivalida. **O. ivalida** Mead. (55 f). This species is easily recognized by the brownish grey colour of the forewing and the whitish grey hindwing. A row of white-grey spots is placed before the distal margin of the forewing, with a small eye-spot before the apex. The under surface is also almost entirely white-grey. The costal margin of the forewing is dotted with brown to the subcostal, then in the anterior part of the cell marbled with brown, some brown streaks extending to the median. The hindwing is striated and marbled with brown with lines

about as in *chryxus*. The species appears only to occur in the Californian Sierra Nevada, especially near Lake Tahoe. According to EDWARDS the egg is distinguished by the somewhat curved ribs on its surface. Concerning larva and pupa nothing is known.

O. norna *Thly.* (= hilda *Quens.*, celano *Hbn.*) (vol. I, pl. 40c). According to EDWARDS 3 examples of this Palearctic species were found in North Alaska, of which STAUDINGER had determined one that was sent to him as probably a dark variety of *norna*, the condition of the specimen leaving him in some doubt. *norna* has on a brown ground a broad brownish yellow submarginal band across both wings, in which are placed 1 or more eye-spots. The under surface is rather like that of *chryxus*, but the median band of the hindwing is darker and more strongly dentate. Further observations as to the occurrence of this species in America would thus be desirable. Cf. vol. I, p. 119.

O. jutta *Hbn.* (= balder *H. Schöff.*) (50f). Another Palearctic species. The submarginal row of ochre-yellow spots consists on the ♂ forewing of small round spots, in the ♀ of larger oval ones, the number of the black dots in which varies from 1—4 on the forewing and from 1—2 on the hindwing. Beneath the entire hindwing and the apex of the forewing are grey, marbled with brown, the former with a greenish brown, dentate band. — The surface of the egg bears irregular, in part forked, longitudinal ribs. The larva is light yellow-grey with ochreous longitudinal stripes and rows of black dots and small dashes on the dorsum and at the sides. On grass, e. g. (in America) on *Iuncus articulata*. The pupa is whitish grey, at the abdominal end ochre-yellow. Whilst HOLMGREN says that in Europe *jutta* settles on pine-trunks, according to FYLES (in America) it always sits on the ground. When pursued it drops into the grass. It flies in June. In North America the species occurs in Maine, Nova Scotia and the Hudson's Bay Territory. In addition it is found in North Europe and North Asia. — **alaskensis** *Holl.* is a form of *jutta* with the wings more thinly scaled and transparent, and the spots on the upper surface more indistinct. On the under surface the wings are uniformly marked with small spots and streaks, so that on the hindwing there is no trace of the darker band of *jutta*. From Alaska. June und July.

O. uhleri *Reak.* (50f). Above reddish yellow-brown with dark veins and narrow brown distal margin. Forewing with an eye-spot before the apex and sometimes with 1 or 2 black dots below it. On the hindwing one or several black dots. Beneath the costal margin of the forewing and the entire hindwing are brownish white with a number of brown transverse streaks, which are grouped into several narrow transverse stripes; on the forewing are placed here 1 to 4 black spots, some of them with white pupils, on the hindwing a row of indistinct dots. — The egg is chalk-white, with 19 or 20 longitudinal furrows and with the vertex pitted. It hatches in about 10 days. The adult larva is about an inch long, stout, yellow-brown with grey dorsum and light longitudinal lines. It pupates free, among grass-culms near to the ground; and the pupa is ochre-yellow, darker on the dorsum. The butterfly flies from the end of May until July, in Colorado. — **varuna** *Edw.* (50f), originally described as a separate species, is regarded by most authors as a northern form of *uhleri*, by some even as a synonym. It is smaller, the colouring somewhat duller, the distal margin more broadly brown. On the under surface of the hindwing there is sometimes a dark brown band before the middle. But the number of eye-spots varies as in *uhleri*, MORRISON for instance having sent me among several *varuna* from Montana an example with 5 such spots on each surface of the hindwing. — According to EDWARDS the egg is chalk-white and has 18—20 ribs, some of them incomplete. The larva varies from whitish green to dirty yellow-brown, and is lighter on the back, with 3 rows of small black dashes and slate-grey subdorsal stripe. The pupa is ochre-yellow, the wing-cases light yellow-green. The larva pupates in a sort of cocoon formed in the sand. From Montana, North Dakota and the adjoining parts of Canada. — The preceding notes on the larva, pupa and transformation do not agree well with one another. One might therefore suspect in the two forms two separate species. Further investigations are needed to elucidate the matter.

O. alberta *Elw.* (50g). Forewing grey-brown above, in the ♀ strongly dusted with ochre-yellow, with an ochre-yellow submarginal band in which are placed 1—3 black spots or ocelli. Hindwing with the band more distinct, containing 1 eye-spot and 1 or 2 dots. Beneath the forewing is light brown-grey, towards the apex whitish, before this a short dark transverse band. Hindwing the same, with a broad, darker, irregular transverse band across the middle, which is bordered with darker at the margins. — The larva is dark olive-green or greenish slate-coloured with slightly lighter longitudinal stripes, on the back sometimes brown. The pupa is grey-green with dark anterior margin. The butterfly flies on dry, stony slopes, resting on the bare ground. It was discovered at Calgary in the province of Alberta (Canada). It flies in the middle of May.

O. taygete *Hbn.* (= bootes *Bdv.*) (50g). Above brown, the brownish ochre-yellow submarginal band in the ♂ is only present on the hindwing and in both sexes lacks the black spots. Beneath similar to the figured *alberta* in colouring and markings, but the dark median band on the hindwing is more strongly outcurved in its anterior part, forming an acute angle basewards in the middle. From Labrador.

O. subhyalina *Curt.* (= crambis *Frr.*, also *Möschl.*, oeno *Bdv.*, assimilis *Btlr.*) (50g). Dirty ochre-yellow to dark brown, mostly with obscure cinnamon-brown or ochre-yellow band and ochre-yellow spots in the cells.

Forewing without eye-spots or with 1 or 2 black ones, sometimes white-pupilled, hindwing without ocelli. Hindwing beneath ochre-yellow, marbled with grey and black-brown. Median band darker, bordered at each side by a light grey, sometimes darker band. Veins not dusted with white. Sometimes, however, the marbling of the hindwing is so much darkened as to obliterate the median band (*assimilis* *Bltr.*). — The egg is similar to that of *jutta*, but the ribs on the surface are finer. The larva is ochreous grey, with darker and lighter longitudinal stripes and rows of black spots. Localities: Newfoundland, Labrador, Alaska. Occurs also in North Asia (cf. vol. I, p. 120, pl. 40 f, under "*crambis*").

semidea. **O. semidea** *Say*. (50 g). The ♂ is unicolorous grey-brown above, the ♀ dark brown with darker marginal line, chequered fringes and small dark brown spots at the margin of the hindwing. The body is black-brown, the club of the antenna red-brown. The forewing beneath is brownish grey, towards the apex marbled with dark brown and whitish grey. The hindwing beneath is brown, marbled with dark brown in the basal and median areas, only the marginal area is marbled with whitish grey and brown, at the distal margin darker-spotted. — The egg is rather irregularly ribbed, grey-white, with silky gloss. The larva light green or yellow-brown with dark transverse shades on each segment and rows of blackish dots at the sides and on the back. Pupa black-brown with yellow-brown abdomen. The butterfly flies on rocky mountains, locally in large numbers, as on the peak of Mt. Washington in New Hampshire, also in Colorado and Labrador.

brucei. **O. brucei** *Edw.* (50 g) approaches *semidea*. It is, however, much more thinly scaled and hence semitransparent. Above like *semidea*, the under surface of the forewing also as in this. But the under surface of the hindwing is much lighter, the basal area has a whitish grey ground-colour, the median band stands out distinctly and the brown lines bordering it are outcurved at the costal margin (which is not the case in *semidea*). — The larva is ochre-yellow, shaded with brownish, with rows of darker dots. Pupa obtuse with the head truncate (much as in *semidea* and *uhleri*, but less than in *jutta*). The butterfly flies on grassy mountain slopes from the end of June to August, local. (Not on rocky peaks like *semidea*.) It is found in Colorado at elevations of 12 to 14000 ft., in the Canadian province of Alberta at 8 to 9000 ft.

beani. **O. beani** *Elw.* Likewise similar to *semidea* and thinly scaled. Above unicolorous light smoke-brown, the costal margin very narrowly light grey, dusted with black. The scent-scale stripe of the ♂♂ indistinct. Beneath the forewing is as above, but the costal margin narrowly and the apex broadly light grey, dusted with dark brown. The hindwing is light grey, densely dusted with black-brown without any trace of a band. Fringes chequered. Palpus entirely black. In the ♀ the hindtibia is thickened and at its extremity curved inwards. Found on rocky peaks near Laggan in Alberta at 8000—9000 ft.

katahdin. **O. katahdin** *Newcomb* (50 g). Above dark-brown, the distal third of the wings yellowish brown with blackish marginal line, fringes chequered with light and dark brown. A small black, white-pupilled spot before the apex of the forewing. Sometimes 3 or 4 such spots are present on the forewing, sometimes again all are absent. The scent-scale spot is faintly visible. Beneath the forewing is as above, but paler, costa and apex dotted with brown. The hindwing beneath has an irregular brown band through the middle, which is at first bordered with black, then with grey. The ♀ has the light brown colouring of the distal margin on the upperside more definite and usually 2 or 3 eye-spots. There is also a row of 5 whitish spots before the distal margin on the underside of the hindwing. The butterfly flies on Mt. Katahdin in Maine at altitudes of 4250—5000 ft., at the end of June.

daura. **O. daura** *Streck.* has been described from a single example, which was taken by MORRISON on Mt. Graham in Arizona. It is similar to the Siberian *fulla* *Evcrsm.* (cf. vol. I, p. 119, pl. 40 d), of a whitish ochre-yellow ground-colour (like *ivalida* [50 f]) with an angled brown median line and 3 small black spots, the first pupilled on the forewing. Hindwing at the margin broadly lighter and with a black dot in cellule 2. Fringes chequered. Beneath the hindwing is almost white, very finely and weakly marbled, with a somewhat darker, sharply defined median band. From Arizona.

21. Genus: **Argyrophorus** *Blanch.*

This genus is easily recognized by the dense silver gloss which almost entirely covers the wings above and beneath, or at least the upperside of the forewing. The costal and median are strongly inflated at the base. The upper discocellular of the hindwing is rather short. The wings are broader and less elongated than in *Oeneis*, the distal margin more rounded, the palpus less hairy. The antenna has the club comparatively short and thick. Although the butterflies do not even reach medium size, the first species is one of the most striking insects in the American fauna.

argenteus. **A. argenteus** *Blanch.* (51 a). Above entirely glossy silver-white without markings, fringes brown, body brown with white hairs. Forewing beneath likewise silvery white, the cell dusted with reddish yellow, with a small, round black spot before the apex, which in the ♀ contains a white central dot. Inner margin grey, fringes brown. Hindwing silver-white, basal half dusted with brownish white, with brown spots between, but with all

the veins remaining glossy white. Beyond the middle a row of brown spots, before the distal margin a row of brown crescents. The habitat is Chile, where the butterfly is locally common in the Cordilleras of the central provinces and on the Argentine borders in January and February, but is difficult to catch on account of its rapid flight. Only in the early morning it is more easily captured. The altitude at which it occurs is given as between 3000 and 7000 ft.

A. lamna *Thieme* (51 a). Much smaller than the preceding. Forewing above glossy silver-white with rather broad brown-black border, 6—8 mm. in breadth at the apex, 2 mm. at the anal angle. Fringes long and brown. Hindwing entirely brown, towards the base somewhat lighter. Beneath brown, the apex of the forewing and the whole hindwing sprinkled with grey-white atoms and with white longitudinal lines between the veins, on which are placed on the forewing two black dots and on the hindwing a row of 5. Proximally to these on the hindwing several further rows of small dots. From Bolivia. — To a local form of this species I give the name **angusta** *form. nov.* Instead of the broad brown distal margin of the forewing there is here only a narrow brown marginal line and before this a second line, only distinct in the anterior half of the wing. At the apex of the costal margin is placed a narrow brown triangle, its shorter side only occupying 2 mm. of the distal margin. Below this triangle there are 3 brown dots on a silver-white ground, at a distance of about 4 mm. from the distal margin. Fringes brown, spotted with white at the apex. On the under surface both wings have a sharply prominent white marginal line, the veins of the hindwing are likewise white, and the rows of dark dots very distinct. Likewise from Bolivia.

22. Genus: **Cosmosatyrus** *Fldr.*

Club of the antenna thin, moderately excised. Palpus thin, twice as long as the head, upper disco-cellular of the forewing short. Distal margin rounded, that of the hindwing slightly undulate. This genus was founded by **FELDER** on *leptoneuroides* and afterwards extended by **ELWES**.

C. leptoneuroides *Fldr.* (= *antarctica* *Reed*, *germainii* *Reed* [explanation of the plate]). Above brown, forewing in the ♂ somewhat dusted with rust-red in the middle, in both sexes an obscure, narrow rust-red submarginal band on the hindwing. On the under surface the forewing is grey-brown, basal and median areas red-brown, before the apex with a round black eye-spot with double white pupil and yellow ring. The hindwing is olive-brown to beyond the middle, then follows a dentate whitish yellow band and in the marginal area a row of 5 eye-spots, those in cellules 2, 5 and 6 black with white pupils and yellow and brown rings, the others, in cellules 3 and 4, white with black ring. At the distal margin is placed a narrow white stripe, which is divided into spots by the dark veins. The butterfly is rather common in the mountains of Chile at elevations of 3000 to 5000 ft. Flies at the end of January and in February. — **plumbeola** *Btlr.* is a local form of *leptoneuroides*, only differing in the presence of a bi-curved brown line on the underside of the forewing, bordering the red-brown median area. From Port Famine on the Straits of Magellan. — **duseni** *Stgr.* is a quite similar form to *plumbeola*, the differences according to **ELWES** being extremely slight; it was taken on the Rio Aysen in South Chile.

C. chiliensis *Guér.* (= *reedii* *Btlr.*) (51a). Upper surface in the ♂ unicolorous brown, fringes whitish grey; in the ♀ a round black spot is placed before the apex of the forewing and in its vicinity 4—6 small red-yellow spots. On the under surface the forewing is dark red-yellow to beyond the middle, the distal margin broadly grey, the black spot surrounded with ochre-yellow, hindwing grey-brown, marbled with dark brown and white. The butterfly is common in Chile from November to December and ascends from the coast to elevations of 4000 ft. — **monticolens** *Btlr.* is a form of *chiliensis* which chiefly differs in having a row of 6 black, whitish-bordered spots, placed on a broad brownish white submarginal band on the underside of the hindwing in cellules 1b—6. There are also here on the distal margin large dark brown spots between the entirely white veins. The butterfly is to be found on stony grass-lands in the higher mountain regions of Chile from 4500 to 6000 ft., but is difficult to catch on account of its rapid flight. — **williamsianus** *Btlr.* (= *Oeneis antarcticus* *Mab.* [according to **ELWES**]) is a small form belonging here, in which the median band on the underside of the hindwing is curved distally. The light band which follows is broader and instead of the eye-spots of *monticolens* there is here a row of 5 black dots, some of them indistinct. From Port Famine on the Straits of Magellan (*antarcticus* *Mab.* was discovered at Santa Cruz, a haven on the east coast of Patagonia at 50° south lat.). — **morania** *Berg* is a similar form to *williamsianus*, but has on the underside of the forewing an eye-spot with distinct white pupil, and on the hindwing instead of the row of black dots 2 black, white-pupilled ocelli in light yellow rings. The upper surface is unicolorous brown. It was taken in the interior of Patagonia at the source of the Rio Santa Cruz. — As **sajama** *form. nov.* (50 g) I add a similar form from Bolivia, which is perhaps the northern representative of the Chilean *chiliensis-monticolens*. The upper surface is brown, before the distal margin with a broad light ochre-yellow macular band, composed on the forewing of 6, on the hindwing of 4 spots. The first 3 spots on the forewing are long and narrow, in the 2nd is placed a black spot, the 4th and 5th are broader and long, the 6th also broad, but short. The 4 spots of the hind-

wing are basally pointed, distally broad. Beneath the forewing is brownish red-yellow, with a black spot before the apex, placed on a light yellow streak. Hindwing beneath similar to that of *williamsianus*, but the broad median band is bipartite, dividing into 2 bands, the outer one distally strongly dentate at the veins. Locality: Sajama in Bolivia. This form was collected by STÜBEL and in working out his captures I took it at the time for the similar *monticolens*.

milesi. **C. milesi** Weeks. Above brown, with a light brown band before the darker margin, occasionally also proximally bordered with dark. Before the apex of the forewing 2 black, white-pupilled ocelli with yellow rings close together, a similar smaller ocellus below them. Hindwing with black submarginal line, without eye-spots. The ocelli on the forewing are occasionally absent, in which case there is merely a black spot before the apex. The under surface is dark brown with slight golden gloss. Two dark lines traverse both wings, one in the middle, the other before the distal margin. The basal half of the forewing is here without markings. On the hindwing all the veins are white, between the 2 lines is placed a row of 4 or 5 elongate white spots, and the basal half of the wing is covered with short dark transverse streaks. From Sicasica in Bolivia.

quies. **C. quies** Berg. Above brown with a broad red-yellow band across both wings, reaching to the anal angle, on the forewing distally and proximally dark bordered and bearing before the apex a double eye-spot and in cellule 2 a single one. The middle of the forewing is likewise dusted with red-yellow. Hindwing without ocelli. Beneath the forewing is as above, the red-yellow band proximally somewhat lighter. Hindwing dark grey, striated with brown, with a broad whitish band across the middle. The distal margin of the hindwing is somewhat dentate. The ♀ is similar to the ♂, but the colouring is lighter and the markings weaker. From

plana. Patagonia and the southern part of Argentina. — **plana** form. nov. (51 a) is a form nearly agreeing with *quies* beneath, but with the 2 eye-spots on the upper surface placed in ochre-yellow rings, the lower without white pupils, in the middle of the wing with a row of 4 small red-brown spots. In the anterior half of the hindwing is placed an indistinct red-brown band. On the under surface this form differs from *quies* in having the basal half of the forewing reddish brown with 2 brown, angled marks in the cell. In addition the distal margin of the hindwing is almost smooth, while in *quies* it is dentate. From Uruguay.

statia. **C. statia** spec. nov. (51 a). Above unicolorous brown, without spots. Beneath grey-brown, the basal area of the forewing red-brown to beyond the middle, before the apex a round black eye-spot with 2 white pupils and an indistinct yellowish ring. Hindwing with 2 strongly curved, dentate dark brown transverse lines across the middle, formed merely of lunules. The ground-colour is grey-brown to the 2nd transverse line, the marginal area lighter and grey, or containing 2 brown spots in brown elongate rings in cellules 2 and 5, a red-brown, dentate submarginal line and a black marginal line. From Chile.

23. Genus: **Tetraphlebia** Fldr.

In the forewing the 2nd subcostal vein arises close beyond the end of the cell, the upper discocellular is short, the middle twice as long as the lower; the cells are strongly produced at the posterior end. The club of the antenna is thin, the palpus short and thinly haired. Distal margin of the hindwing rounded.

germainii. **T. germainii** Fldr. (= Sat. *promaucana* Reed). Dark brown, beyond the middle of both wings dusted with reddish brown, on the hindwing more weakly than on the forewing. Beneath the base and the costal and distal margins of the forewing are brown, the central area red-brown with brown median band. Before the apex a large black eye-spot with double white pupil and red-yellow ring. The hindwing beneath likewise brown with a broad white band beyond the middle of the wing, running parallel with the distal margin. This band is sharply defined proximally, but ill-defined distally. Rare at Chillan and in the Villacura Valley in Chile at elevations of 3000—4000 ft. According to REED not rare in the central provinces of Chile.

24. Genus: **Faunula** Fldr.

Build almost as in the preceding genus, but the hairs of the palpus are longer and the 2nd subcostal vein of the forewing arises much further from the cell.

leucoglenc. **F. leucoglenc** Fldr. Above brown, the forewing in the ♂ with raised dark scales in the disc, before the distal margin dusted with ferruginous. Beneath but little lighter, before the apex of the forewing a black eye-spot with thick white pupil and 2 dark transverse lines, which unite on median vein 2 and are here dusted with ferruginous. The hindwing brown, faintly spotted with ferruginous. This species has rarely been taken and is confined to high mountains in Chile, namely the Cordilleras at Condes near Santiago at altitudes of between 6 and 10 000 ft. and the pass from Lolco to Lonquimay at 8000 ft. Flies in January.

stelligera. **F. stelligera** Bltr. Above brown. Forewing with ferruginous streaks in cellules 2—4. Hindwing with three pointed ferruginous spots in the same cellules. Fringes dark grey. Beneath the basal half of the forewing is ferruginous, the distal half and also the costal and inner margins brown, finely striated with dark. Before the apex a rather large black eye-spot with double white pupil and yellow ring. Hindwing beneath brown,

with fine dark striation, a dentate black line behind the cell. Beyond this line the ground-colour is lighter with white rings and a curved row of 7 snow-white spots in black rings. Flies at high altitudes in the mountains of Chile and Argentina (4—7000 ft. Chillan, Lolco, Pulmari, Quillen, St. Martin).

F. johanna *spec. nov.* (51 a). Above brown. Forewing in the ♀ with a double eye-spot before the apex *johanna*, with ochre-yellow ring and 2 white pupils, and with a small blind eye-spot in cellule 2, also with yellow ring. Hindwing above without ocelli. Forewing beneath somewhat lighter than above, the eye-spots placed on a broad, somewhat lighter submarginal band, which is continued on the hindwing also and is proximally bordered by an angled brown line, distally on the forewing by a straight brown line, on the hindwing by one composed of crescents. In this band are placed on the hindwing 5 white dots. From Catamarca in Argentina.

25. Genus: **Neosatyrus** *Wlgr.*

Antenna with gradually thickened, pear-shaped club. Costal and median inflated at the base. Three of the subcostal veins run into the costal, two into the distal margin. The middle discocellular vein is angled.

N. ambiorix *Wlgr.* (= *minimus* *Btlr.*) (51 c). Above brown. Beneath lighter, forewing with red-yellow *ambiorix*, disc and double eye-spot before the apex, hindwing with a row of 6 white dots, 2 of which are ocellated. Common in Chile to the Argentine border at elevations of from 3000 to 6000 ft. Flies from December to February. From the description and figure I take *minimus* *Btlr.* to be a small example of *ambiorix*.

N. simplex *Btlr.* (*Argyrophenga* s.) belongs here according to ELWES. Above unicolorous brown. Beneath *simplex*, the forewing is brick-coloured orange, with dark costal and distal margins and pale brown inner margin; a large black eye-spot before the apex with 2 small white pupils and white ring. Hindwing pale brown with a small orange spot in the cell and a small lunular spot between the radials. The species was found at Chillan in Chile by EDMONDS in March and on the road from Loleo to Lonquimay by ELWES in January.

N. vesagus *Dbl.* (= *ochreivittatus* *Btlr.*). Above brown, forewing with a large red-yellow spot between *vesagus*, the radials. Hindwing unicolorous brown, or with 3 red-yellow spots between the median veins. Forewing beneath rust-coloured with brown margins and a large, round black eye spot with 2 white pupils and red-yellow iris. Hindwing brown with ochreous band across the middle. Chile. — **pusilla** *Fldr.* (*Homoeonympha* p. = *pusilla*, *violaceus* *Btlr.*) is a form of *vesagus* with a row of whitish yellow dots on the underside of the hindwing. According to ELWES *boisduvalii* *Blanch.* (51 c) and *hahni* *Mab.* probably belong here.

N. reedii *Btlr.* (51 c). Above olive-brown with cupreous gloss and dark margin. Beneath the forewing *reedii*, is tawny orange, before the apex a small black eye-spot with white pupil and orange ring. Hindwing brown, in the middle with a light violet-grey band, which is widened at the costal margin, distal margin striped with brown, basal part of the inner margin blackish. From Chile. — **fuscescens** *Btlr.* is a smaller form of *reedii*, the *fuscescens* forewing beneath smoke-brown, with a black dot instead of the eye-spot. From La Union in Valdivia.

N. humilis *Fldr.* (= *Stygnus* h.) (51 f). Above brown, without spots. Beneath lighter, forewing with *humilis*, 2 small black, white-pupilled eye-spots between the radials and the 3rd median vein, hindwing with 4 whitish yellow dots in the marginal area. Chile. Common in woods in Valdivia according to EDMONDS, rare at Quillen and at Lake Aluminé according to ELWES.

26. Genus: **Neomaenas** *Wlgr.*

Antennae with spindle-shaped club. Palpus projecting far beyond the head, beneath with long hairs. Wings with the margins entire, hindwing rounded. In the forewing the costal and median are inflated at the base. Differing from *Epinephele* chiefly in the absence of the scent-scale spot on the ♂ forewing.

N. servilia *Wlgr.* (♀ = *decorata* *Btlr.*) (51 c). Brown, forewing with a red-yellow band beyond the *servilia*, middle, the median area itself also somewhat dusted with red-yellow, a round black spot before the apex. Hindwing with narrow red-yellow submarginal stripe, which in the ♂ is broken up into spots. Beneath the forewing is almost entirely red-yellow with large double eye-spot before the apex. On the hindwing the median band is distally bordered with silver-white. Not rare at Valparaiso and other parts of Chile in February and March.

N. coenonymphina *Btlr.* is similar to *Epin. pales* above, but without the scent-scale spot. Forewing *coenonymphina*, beneath brick-coloured with brown margins and an apical ocellus. Hindwing in the basal half dark brown, bounded by an angled yellow line, disc yellowish with a black, white-pupilled eye-spot. Distal margin brown with dark dentate submarginal line. The ♀ is larger, the disc of both wings above ferruginous; on the under surface the eye-spot of the hindwing is absent. Rare in Valparaiso. December and January.

N. fractifascia *Btlr.* Above brown with a red-yellow spot in the middle of the forewing and a black *fractifascia*.

spot in a short red-yellow band before the apex. Hindwing likewise with a short band in which is placed at the anal angle a black spot. Beneath the hindwing is brick-coloured with a brown, dark-margined band, which in the middle is angled and broadly interrupted. In the marginal area 2 black spots at the apex and 2 between the median veins. Rare in the woods near the Baths of Chillan in Chile.

wallengrenii.

N. wallengrenii *Btlr.* Dark brown, with black apical spot. Forewing beneath yellow-brown with light yellow band and black, white-pupilled eye-spot before the apex. The posterior two-thirds of the hindwing are smoke-brown, divided by a reddish yellow band. Disc lighter, with white veins, distal margin brown. In woods below Chillan in Chile.

inornata.

N. inornata *Elw.* Dark brown, with a reddish tinge towards the base of both wings, and in the ♀ with a large black-brown spot before the apex of the forewing in an indistinct red-brown ring. On the under surface the forewing is brownish red-yellow with the costal and distal margins yellow-brown. Before the apex a double eye-spot in a yellow ring. Hindwing unicolorous yellow-brown. In the Baños de Cauquenes in Chile, in March.

edmondsii.

N. edmondsii *Btlr.* (*Argyrophenga* e.). Above glossy dark brown. Forewing rust-red in the cell, a black spot before the apex. Disc of the hindwing for the most part light rust-coloured with 3 pear-shaped black streaks. On the under surface the forewing is brick-coloured orange with the distal margin grey-brown, before the apex a black ocellus in a yellow ring. Hindwing olive-brown, with a broad sulphur-yellow longitudinal stripe extending from the base across the cell to the distal margin. 6 abbreviated yellow longitudinal stripes are placed on the veins, 2 before and 4 behind the first-mentioned stripe. The costal margin is likewise yellowish, the inner and distal margins grey. Rare, only 1 example in the British Museum, which was taken by EDMONDS in the woods below Chillan in Chile.

reticulata.

N. reticulata *Weym.* (51 c). Above brown. Forewing with 3 small red-yellow spots in cellules 2, 4 and 5 and four white dots before them in a row. On the hindwing a red-yellow band composed of 5 spots, some of which bear a black dot. The last spot at the inner margin has 2 dots. Both wings with white marginal line interrupted at the veins. Fringes brown. As may be seen from the figure the under surface is very characteristically marked. Locality unknown, probably South America. Coll. WEYMER.

tenedia.

N. tenedia *Weym.* (51 c). Above brown. On the forewing a large red-yellow spot covers the cell. A large black spot in an ochre-yellow ring is placed before the apex, sometimes showing 2 white pupils, a small ochre-yellow spot with black central dot in cellule 2, and some red-yellow dots beside it. The hindwing with a short red-yellow band in cellules 4 to 6. On the under surface the basal half of the forewing is entirely red-yellow, the black spot before the apex has 2 white pupils, its distal margin is brownish grey, and the entire hindwing is of this latter colour. From South Brazil.

27. Genus: **Epinephele** *Hbn.*

The antenna has an elongate, gradually thickened club. The costal and median of the forewing are strongly inflated and 2 subcostal veins arise before the end of the cell. The inner margin of the hindwing is more or less excised before the angle and in most species more elongated. The ♂♂ have a stripe of scent-scales on the forewing. Most of the species of this genus belong to the Palearctic fauna. Cf. vol. I, p. 137—142, pl. 46, 47. Some occur in India. Cf. for these *Maniola*, vol. IX, p. 306. The American species only inhabit Chile and the adjoining districts.

limonias.

E. limonias *Phil.* (= *janiroides* *Blanch.* [nec *H.-Schäff.*], *blanchardii* *Kirby*) (51 c). Above brown. Forewing with rust-red central area, which in the ♂ is divided by the dark brown scent-scale spot. In the ♀ the colouring is more red-yellow and a black apical spot is present. The under surface is lighter with distinct apical ocellus. Distributed and common in Chile. As the name *janiroides* had been already employed by HERRICH-SCHÄFFER for an *Epinephele* from Algiers it cannot be used for this Chilean species, and hence KIRBY chose the name *blanchardii*. But as the description of *limonias* *Phil.* agrees with this species the latter name must be restored. — **dryas** *Fldr.* (51 c), the figure of which is from FELDER's type in the Tring Museum, differs but little from *limonias*. From Chile.

edmondsii.

E. edmondsii *Btlr.* Above glossy brown. Forewing with the base and a band before the distal margin red-yellow, a row of 6 grey-brown spots across the middle and a black spot before the apex. Hindwing with red-yellow spot before the costal margin. On the under surface the forewing is red-yellow with grey, black-streaked margins and bi-pupilled apical ocellus. Hindwing beneath grey-brown, finely striated with black, with a somewhat darker median band distally margined with black, beside which are placed at the costal margin some white scales. From Chillan on the slopes of the Cordilleras (Chile). Rare.

monachus.

E. monachus *Blanch.* (= *valdiviae* *Fldr.*, *lugubris* *Btlr.*, *luctuosus* *Reed*) (51 d). Above unicolorous brown, with the fringes chequered with brown and white and an indistinct black spot before the apex of the forewing. Beneath the forewing is for the most part reddish brown, with a blind eye-spot, the hindwing brown,

striated with dark brown, with an oblique row of white dots. Very common in the mountains of Chile. The figure is from FELDER's type of *valdiviae*.

E. coctei Guér. (= *tragicus* Reed) (51 d). Above brown, somewhat dusted with rust-red and with some *coctei*, rust-red spots at the anal angle of the hindwing. The ♀ is rust-reddish to beyond the middle and has before the apex an eye-spot with double pupil. On the under surface the forewing in both sexes is red-yellow with a similar eye-spot, the distal margin and the hindwing lighter brown, the latter with a lighter band beyond the middle. According to ELWES locally common in the Chilean mountains.

E. tristis Guér. Somewhat larger than *coctei*. According to the figure in „Voyage Coquille“ above uni- *tristis*, colorous dark yellow-brown with the veins lighter and a small, round, pale yellow spot at the end of the cell on the forewing. On the under surface, which is not figured, according to GUÉRIN's description there is a yellowish white line on the hindwing, anteriorly expanding into a large spot of the same colour. According to ELWES the species is locally common in Chile. — **pales** Phil. (51 d). Perhaps a form of the preceding. Above *pales*, grey-brown with 2 small red-yellow spots at the margin of the hindwing. Forewing beneath red-yellow, costal and inner margins narrowly yellow-grey, distal margin broadly yellow-grey, a large eye-spot with double pupil before the apex. Hindwing beneath yellow-grey with the margin lighter. Chile (Valdivia).

E. flora Phil. (= *Pedal. oaxes* Btlr., *Stibomorpha tristis* Btlr.) (51 d). Above brown with 1 or 2 red- *flora*, brown spots, which, however, may also be absent. Fringes chequered with yellow and brown. Beneath: forewing spotted with red-yellow and brown, its costal margin marbled with black and white. Hindwing marbled with dark brown, with a yellow spot in the middle, an undulate white transverse band and a white spot at the costal margin. Province of Valdivia (Chile). PHILIPPI described the species as a *Satyrus*, BUTLER first as *Pedaliodes*, then as *Stibomorpha*. On account of the basally inflated median I place it here.

E. nycteropus Reed (51 d). Above brown, in the ♂ with dark brown scent-scale patch, in the ♀ with *nycteropus*, dark red-yellow median spot on the forewing. On the hindwing some red-yellow submarginal spots. Forewing beneath red-yellow, distal margin broadly, costal margin narrowly grey-brown, a round apical ocellus with 2 white pupils in ochre-yellow ring. Hindwing grey-brown with a dentate white median stripe. In the middle of the lighter marginal area 2 light yellow spots. Differs also from *flora* Phil., to which it bears some resemblance, in not having either the fore- or hindwing dentate and in the more produced apex of the forewing. Rare and apparently confined to the coast-region of Central Chile.

E. poliozona Fldr. (51 d). Above unicolorous brown. Beneath brownish red-yellow with the margins *poliozona*, of the forewing grey-brown, a blind apical ocellus, hindwing with a light lilac submarginal band. On this is placed in cellule 2 and in cellule 5 a black dot. Chile.

E. gyrtone Berg. Above brown, the ♂ with a double eye-spot before the apex and without eye-spots *gyrtone*, on the hindwing. In the ♀ in addition a 2nd small eye-spot in cellule 2 of the forewing and 5 on the hindwing. Beneath yellowish grey, with a lighter band before the distal margin, partly white on the hindwing, on which are placed the black, white-pupilled and yellow-ringed ocelli, in the ♂ 2 on the forewing and 4 on the hindwing, in the ♀ 3 on the forewing and 5 on the hindwing. The first eye-spot on the forewing is larger and bi-pupilled. The band is proximally and distally bordered by a dark line. 39—45 mm. Found in the south of the province of Buenos Aires (Sierra Tandil).

E. imbrialis Weeks. Above bronze-brown. On the forewing a dentate dark brown line runs from the *imbrialis*, apex to the submedian and from there back, touching the discocellular, to the middle of the costal margin. In the triangle thus formed is placed before the apex a black double eye-spot with 2 silvery pupils and light brown ring. The hindwing has a fine dark brown submarginal line and only occasionally a small eye-spot with single pupil at the anal angle. The under surface of the forewing is as above, only much lighter, the eye-spot is larger and has a yellowish white ring. The apex is dusted with grey. The hindwing is grey beneath, strongly dusted with brown, with a broad grey band, proximally bordered with brown, before the distal margin. Sometimes a row of brown spots is present in the middle. Thus the species is apparently very variable. From Bolivia, Alezuni district.

28. Genus: **Erebia** Dalm.

Only the costal of the forewing is strongly inflated at the base. Of the subcostal veins 2 usually arise before the end of the cell, sometimes only one. The 4th subcostal vein runs into the apex of the forewing. The antenna has the club distinctly prolonged. The palpus is anteriorly clothed with long, stiff hairs, above with shorter hairs. The distal margin of both wings is rounded. The *Erebias* are mostly small dark brown butterflies, scarcely reaching medium size. Their range of distribution embraces the whole Palearctic and Nearctic Region. They are mostly mountain butterflies, inhabiting the alpine regions of Europe, Asia and America. Only a few species descend to the hills. In comparison with the Palearctic Region the number of the American species is small. For the habits and life-history of *Erebia* cf. further vol. 1, p. 94 and 95.

- discoidalis*. **E. discoidalis** Kirby (51 e). Above dark brown, the distal half of the forewing red-brown, the two colours shading into one another; an obscure black eye-spot with whitish pupil before the apex. Beneath the forewing is red-brown, the margins striated with dark brown. Basal half of the hindwing brown, distal half grey, the whole with darker striation. From Hudson's Bay. Also occurs in Siberia, cf. vol. I, p. 111.
- fasciata*. **E. fasciata** Btlr. (vol. I, pl. 35 e). Above brown, forewing distally red-brown as in *discoidalis*. Beneath the forewing is rust-coloured, whitish at the apex, with 3 brown bands, namely a basal, a median and a marginal. The median band is undulate and at the costa broader; all these are bordered with rust-colour. Hindwing whitish grey, with 3 similar, but red-brown bands, the middle one dentate at both sides. 51—58 mm. Localities: arctic North America, East Siberia. Cf. vol. I, p. 103.
- rossii*. **E. rossii** Curt. Dark brown, with the fringes somewhat lighter. Forewing before the apex with red-brown spot, in which are placed 2 black dots. Sometimes below these 2 smaller red-brown spots, each with a black dot. On the hindwing sometimes three similar spots with indistinct dots. Beneath the forewing is red-brown with dark brown margins and sometimes with white-pupilled eye-spots. Hindwing dark brown, dusted with whitish grey, with obscure darker median band, before the discocellular a white spot and beyond it, before the distal margin, 2 or 3 white dots. Localities: arctic North America and Siberia. Cf. vol. I, p. 109.
- mancinus*. **E. disa** Thnb. **mancinus** Dbl. (51 e). Above brown. Forewing with a red-brown band before the distal margin, composed of 4 spots placed close together. Each spot contains a black dot, mostly with white centre. Fringes chequered with brown and white. Hindwing unicolorous brown. Beneath somewhat lighter, the apex of the forewing and the distal margin of the hindwing dusted with grey. The band of the forewing is broken up into 4 separate red-yellow spots, only the first 2 still connected, the black dots in them larger than above. This butterfly is found in the mountains of Alaska and British Columbia. On the type-form *disa* cf. vol. I, p. 109, pl. 37 h.
- vidleri*. **E. vidleri** Edw. This species is near the Siberian *sedakovii* Ev. (cf. vol. I, p. 105, pl. 37 e), resembling it in size, colour and markings; but according to ELWES the difference in the genitalia is so great that the two species cannot be regarded as identical. The band on the upperside of the forewing is yellowish brown and runs straight across the wing, enclosing three small dark brown eye-spots, of which the first 2 have white pupils. The band of the hindwing is shorter than in *sedakovii*, only reaching the middle of the wing and containing only 2 brown spots, the upper very small. On the under surface the band of the forewing does not reach the costal and the one on the hindwing is very similar to that of *aethiops* (vol. I, pl. 37 e) or *sedakovii*. Found by Capt. VIDLER in the mountains beyond Lake Seton at Lilloet on the Fraser River, British Columbia. Also occurs in Washington (according to DYAR).
- callias*. **E. callias** Edw. (51 f). Above brown, before the apex of the forewing with a red-brown spot, in which are placed 2 small, white-pupilled ocelli. Beneath the forewing is red-brown with the costal and distal margins grey and with the eye-spots as above. Hindwing grey, finely striated with brown, with several dark transverse stripes. Common on high mountains in Colorado and New Mexico. It is the American form of the Palearctic *tyndarus* Esp. (cf. vol. I, p. 113, pl. 37 i).
- epipsodea*. **E. epipsodea** Btlr. (= *rhodia* Edw.) (51 e). Above brown with 4 or 5 black, white-pupilled eye-spots on the forewing and 3 or 4 on the hindwing, all broadly surrounded with red-brown. Beneath the eye-spots are exactly as above and the hindwing has a broad, curved blackish median band. — The egg is suboval, chalk-white. The larva stout, cylindrical, with rounded head, and of a dull yellow-green colour; the pupa is brownish white, spotted with brown. The butterfly appears in 10 days. It is common in the mountains of British Columbia and its range extends from New Mexico in the south, where it flies in high-lying districts, to Alaska in the north. — **brucei** Elw. (= *sineocellata* Skinn.) is a smaller form of *epipsodea*, with the eye-spots absent and the red-brown macular band almost obsolete. It occurs on high mountain peaks in Colorado at altitudes of 12000 ft.
- sofia*. **E. sofia** Streck. (♀ = *ethela* Edw.) (51 e). Above dark brown, forewing with a smooth-edged submarginal band of 6 red-brown spots, hindwing with 5 similar spots, of which the last 2 are more isolated. On the under surface the forewing is red-brown in the middle, the band is as above, but the first 3 spots are light yellow, the last 3 red-yellow. The hindwing has a white spot in the cell and 3 whitish spots at the apex, below them 2 white dots. The butterfly is still rare in collections and has been found at Fort Churchill in British North America, in the Yellow-stone National Park and some other localities in Colorado. — **alaskensis** Holl. is a form of *sofia* with fewer spots on the wings. The forewing shows only 3 on each surface, the hindwing only 2 on the underside. In Eagle City and at American Creek in Alaska, taken in July.
- youngi*. **E. youngi** Holl. Above velvety dark brown, forewing with a short submarginal band composed of red-brown spots. Each spot contains a black dot. The hindwing has a similar row of spots, but more isolated. The under surface is paler. On the forewing the band is somewhat more continuous even than above. Across

the middle of the hindwing runs a broad, curved dark band, bordered with black at both sides, to which follow a grey and then at the distal margin a dark brown band. The black dots of the upper surface are here only faintly indicated. The ♀ is somewhat lighter above than the ♂, beneath somewhat more sharply marked. 33—35 mm. From Alaska.

E. magdalena *Streck.* (51 c). Upper and under surface of both wings unicolorous black-brown, without markings. Has hitherto been found only in Colorado at altitudes of from 10 to 14000 ft. *magdalena*.

E. patagonica *Mab.* (51 c). Above dark brown with a brownish red submarginal band on both wings, which, however, does not reach the costal and inner margins. Beneath the forewing is red-brown with black veins and a small black, white-pupilled eye-spot before the apex. Hindwing brown, striated with dark brown, through the middle a dark brown dentate line, accompanied distally by a narrow light brownish band; two black, white-pupilled ocelli in cellules 2 and 3. From Patagonia. *patagonica*.

29. Genus: **Manerebia** *Stgr.*

Antenna thinner and shorter than in *Erebia*, the club but little thickened and scarcely hollowed out. Wings above without markings. Forewing beneath with an eye-spot above the anal angle or some white dots before the distal margin. The hindwing has a curved, dark transverse line in the basal part and 2 others, undulate or dentate, before the distal margin, with light dots or small eye-spots between them. From Bolivia and Peru.

M. cyclopina *Stgr.* (= *Lyman. varola Schaus*) (51 f). Above uniform black-brown, beneath somewhat lighter, the apex of the forewing sprinkled with light grey, with a black, white-pupilled and brownish-margined eye-spot in cellule 2 and sometimes a smaller eye-spot above or below it; further with 2 or 3 white dots before the apex, a dentate dark transverse line before the margin and an indistinct line before the eye-spots. Hindwing brown-grey, at the margin sprinkled with grey and with 3 dark transverse lines, a larger yellow-ringed eye-spot and a smaller one below it before the anal angle. Towards the apex 1—3 white dots. From Peru and Bolivia. — Whether **cyclopella** *Stgr.* (51 f) is a seasonal form of the preceding or a separate species is not yet settled. It differs in having the 2nd and 3rd transverse lines on the underside of the hindwing nearer together and the eye-spot almost entirely yellow. From Bolivia. Equally uncertain is the specific right of **cyclops** *Stgr.*, in which the hindwing above is not sprinkled with grey at the distal margin and which further differs from the other forms in having the band between the 2nd and 3rd transverse lines on the underside of the forewing much constricted. From southern Bolivia (Bueyes). *cyclopina*, *cyclopella*, *cyclops*.

M. typhlops *Stgr.* Above dark black-brown. Beneath more brownish with 2 weakly dentate dark brown transverse lines before the distal margin of both wings, between which are placed some white dots. The number of these dots varies on the forewing from 3 to 7, on the hindwing from 2 to 5. 34—35 mm. From the province of Yungas in Bolivia. — **thyphlopsella** *Stgr.* is a form which only differs in its smaller size (28—29 mm.) and in having the under surface, particularly that of the hindwing, suffused with much lighter grey. From Tanampaya in Bolivia. *typhlops*, *thyphlopsella*.

30. Genus: **Idioneura** *Fldr.*

Forewing rather elongate, its distal margin rounded, only the costal vein inflated at the base, the middle discocellular of the forewing straight, the lower proximally angled, these two veins form in the hindwing almost a straight line. The eyes are naked. Only one Colombian species.

I. erebioides *Fldr.* (51 f). The brown colour of the upper surface becomes darker towards the base. The fringes are grey. On the hindwing above are placed in cellules 3 to 5 three distinct black, white-pupilled ocelli in red-yellow rings. The under surface is somewhat lighter brown. Across the middle of both wings runs a dark brown dentate transverse line and before the distal margin are placed 2 smooth lines. On the hindwing in cellules 2—4 three short white longitudinal streaks, which are pointed at both ends. From Bogotá (Colombia), 2500 m. As **moderata** *form. nov.* I add a form of *erebioides* which has only one eye-spot on the upper-side of the hindwing, in cellule 3, and the white longitudinal streaks on the under surface entirely absent. From Bogotá. *erebioides*, *moderata*.

31. Genus: **Pseudomaniola** *Weym.*

The costal of the forewing is strongly, the median more weakly inflated; the 2nd branch of the subcostal arises far beyond the end of the cell, the middle discocellular of the forewing is semicircularly incurved, the lower nearly straight. In the hindwing the middle discocellular is slightly incurved. The palpus is densely covered with long hairs, the antenna short, with broad, sharply defined, shovel-shaped club. The two species occur at great altitudes in the Bolivian highlands.

P. euripides *Weym.* (51 f). Above light brown, distally with greenish reflection. On the forewing a broad ochreous band, in which are placed before the apex 2 brown spots and below them sometimes 2 further

brown dots. The hindwing has 3 large red-yellow spots in cellules 2—4. On the under surface the ground-colour is darker brown, without the greenish reflection, the band red-yellow, the 2 larger black spots white-pupilled, joined together and surrounded by a broad light yellow ring. The hindwing is irrorated with dark brown, with broad, lighter border occupying a third of the wing. A dark brown band separates the two colours. Before the distal margin in cellule 2 a dark brown, white-centred spot. At Portuguelo de Corocoro and Sica-sica at 3600 to 4600 m. (Collected by STÜBEL).

eleates. **P. eleates** Weym. Above brown, with two small red-yellow spots on each wing placed in cellules 2 and 3 not far from the distal margin, on the forewing distinct, on the hindwing more indistinct. Beneath likewise brown. Forewing with black, white-pupilled eye-spot before the apex, surrounded by a light brown ring which is posteriorly prolonged into cellule 3. The border of the hindwing is yellowish brown, occupying a quarter of the wing, and contains a row of brown crescents. Only one example (a ♂) was collected by STÜBEL, at Tacora in Bolivia; this is now in the Zool. Museum in Berlin.

32. Genus: **Calisto** Hbn.

This genus differs from all the other American Satyrid genera in that all the subcostal veins of the forewing arise beyond the end of the cell. The costal and median of the forewing are strongly inflated. The middle discocellular of the forewing forms a right angle, the posterior arm extending far distad, so that the cell is much longer posteriorly than anteriorly. The inner margin of the hindwing is more or less deeply excised before the inner angle. In most species the ♂♂ have a silky scent-scale spot on the upper surface. The butterflies are mostly small or below medium size. They inhabit the Antilles; a single species is said to be found on the continent of America, but this seems to need confirmation.

zangis. **C. zangis** F. (= *agnes* Cr.) (51 f). Above brown, forewing in the ♂♂ with a large, round, velvety dark brown scent-scale spot in the middle. The hindwing is reddish brown in the posterior half, with a small black spot at the anal angle. Under surface brown, forewing with a large eye-spot before the apex near the costal margin. This is black with ochre-yellow ring and double white pupil. On the hindwing a much smaller eye-spot before the anal angle. The distal half of the hindwing is lighter brown. The butterfly is common on Jamaica, both in the plains and the mountains, where it ascends to 6000 ft. One example was taken according to LATHY in Demerara, British Guiana. The further localities which have been given, "Pennsylvania" in CRAMER (Uitl. Kap.) and "Carolina" in GODART (Encyclopédie) and in KIRBY's Catalogue are in all probability erroneous, as HOLLAND and DYAR do not cite the species in their works.

nubila. **C. nubila** Lathy (51 f) is quite similar to the preceding species, but differs in the absence of the velvety scent-scale spot of the ♂♂. The upper surface is entirely blackish brown, distally paler, with a black spot at the anal angle of the hindwing. On the under surface the cell of the forewing is bright red-brown, the hindwing likewise red-brown, at the anal angle orange-coloured, with a larger eye-spot in cellule 2, which is of an orange colour, and some small white spots beside it. The ♀ is not known. From Porto Rico.

archebates. **C. archebates** Mén. Above cupreous brown, with a velvety spot on the forewing extending from the inner margin to the cell. Beneath brown. Forewing with black, white-pupilled, yellow-ringed ocellus, hindwing with light yellow band across the middle, which is widened at the inner margin. Behind this an eye-spot, like that on the forewing, and two white dots beside it. From Haiti. Very rare. Only in the collection of GODMAN and SALVIN and in the St. Petersburg Museum.

pulchella. **C. pulchella** Lathy (51 g). Above dark brown, in the ♂ with the velvety spot on the forewing as in the other species and a black spot at the anal angle, bordered with light yellow. The ♀ has on the hindwing a large orange-brown spot in the posterior part of the distal margin before the anal angle, traversed by a dark brown line. The under surface is similar to those of *zangis* and *nubila*, but the basal half of the hindwing is almost entirely reddish orange, before the eye-spot on the hindwing there are 3 white dots in a row, one above another, and behind it a row of red-yellow spots. On the forewing the 2nd white pupil of the eye-spot is removed basad and placed in the yellow ring. From Haiti. **tenebrosa** Lathy is a female form of *pulchella* in which the large orange-brown area before the anal angle on the upperside of the hindwing is absent. Likewise from Haiti.

herophile. **C. herophile** Hbn. (51 f). Above brown, in the ♂ with a dark velvety spot on the forewing. Beneath grey-brown with 2 undulate median and 2 broad, finely dentate submarginal lines, a red-yellow triangle at the base of the forewing, with a large eye-spot on the forewing and a somewhat smaller one on the hindwing and before the latter a row of 4 white dots. From Cuba.

hysius. **C. hysius** Godt. The smallest species of the genus, with an expanse of only 24—28 mm. Above dark brown, in the ♂♂ with large, velvety blackish spot on the forewing. Beneath brown, forewing irrorated with ochre-yellow, with the cell filled up with brick-red, a brown median line, distally margined with yellow, 2 submarginal

lines and a large yellow-ringed apical ocellus with double pupil. Hindwing brown, densely sprinkled with ochre-yellow. In addition to the 3 transverse lines of the forewing a further transverse line is also present near the base. A small eye-spot in cellule 2 and above it two white dots. From Haiti. Also occurring in Jamaica, according to an example in coll. STAUDINGER. — **confusa** Lathy (= *lysium* Mén.) (51 g) is a form of *hysius* which differs above in having a small ochre-yellow spot placed at the anal angle of the hindwing. On the under surface the yellow transverse line before the eye-spot of the forewing only extends to vein 2. The two brown transverse lines before and in the middle of the hindwing are distally distinctly bordered with white, the two brown submarginal lines terminate at the anal angle in a black spot and the space between them is filled up with white in the posterior part of the wing. The eye-spot of the hindwing is also somewhat larger than in *hysius*. From Haiti.

33. Genus: **Steroma** Westw.

A genus easy to recognize by the shape of the wings. The distal margin of the forewing is weakly, that of the hindwing between the veins strongly excised. Below the apex of the forewing the distal margin projects obtusely. The inner margin of the hindwing is deeply excised before the inner angle, so that the angle itself is produced into a lobe. The costal margin of the hindwing is likewise deeply excised in the middle and then forms at $\frac{2}{3}$ of its length a broad, rounded tooth, which is covered by the inner margin of the forewing. The costal and median of the forewing are strongly, the submedian somewhat less strongly inflated at the base. One subcostal vein arises before the end of the cell of the forewing. The ♂ has on the forewing a velvety scent-scale spot. The butterflies occur in the high mountains of tropical America.

S. superba Btlr. (51 g). Above black-brown, at the margin reddish, the ♂ with a large silky scent-scale spot in the middle of the forewing. Beneath the forewing is glossy copper-brown, at the apex marbled with dark brown. The whole hindwing similarly marbled. At the costa of the hindwing is placed a silvery spot, in the middle another and before the distal margin a row of ochre-yellow dots. From Bolivia and Peru.

S. bega Westw. Similar to the preceding species, but the wings are shorter, the form consequently more compact. Above dark brown. Beneath the forewing is lighter, unicolorous brown, only the apex is irradiated with black and white. Hindwing marbled with light and dark brown, sprinkled with silvery white dots and spots. From Venezuela, Colombia and Bolivia. — **andensis** Fldr. (51 g) is a form of *bega* in which the short silvery stripes on the underside of the hindwing form at the costa the letter V. From Bogotá (Colombia). — **modesta** form. nov. (51 g) is a somewhat smaller form, with the silvery white dots and markings on the underside of the hindwing almost entirely absent. Only a silvery dot in cellule 2 and a small silvery angled mark in cellule 3 persist. The tooth at the costal margin of the hindwing is as in the other forms. From Yungas de la Paz, 1000 m. (Bolivia).

S. zibia Btlr. Above brown with dark margin, distal area of the hindwing reddish, dusted with white at the anal angle. Beneath the forewing is lighter, with a yellow streak before the apex, the costa marbled with yellow and brown. Hindwing black, marbled with brown and rust-colour, the apical area ochreous with 2 rust-coloured spots, a silver spot before the apex and the spots at the costa as in *bega*, two black spots with silvery margins before the distal margin. Expanse 42 mm. From Venezuela.

34. Genus: **Pseudosteroma** gen. nov.

This new genus forms a transition between *Steroma* and *Steremnia*. As in the latter it lacks the broad, obtuse tooth which *Steroma* has at $\frac{2}{3}$ of the costal margin on the hindwing, but the other teeth, at the distal margin, project quite as far as in the latter genus. The first tooth is somewhat stronger than the rest and forms almost a right angle at the apex. The inner margin of the hindwing is quite as strongly excised as in *Steroma* and the distal margin of the forewing forms the same obtuse angle below the apex. The scent-scale spot is likewise mostly present.

P. pronophila Fldr. (*Steroma* p.) (51 g). Above brown, the distal margin and the scent-scale spot beyond the median of the forewing darker; the tips of the fringes between the veins whitish. Beneath the forewing yellowish brown, apex of the forewing and the whole hindwing marbled with dark brown. The latter with a white spot at the costal margin, a row of 6 white dots before the distal margin and a light brown spot at the anal angle. The ♀ is marked like the ♂ except that the scent-scale spot is absent. Colombia (Bogotá), 2800 m., Cipaque in the eastern Cordillera, 3000 m., found by FASSL at the Quindiu Pass at an altitude of 3800 m. — **umbracina** Btlr. is a form of *pronophila*, above olive-brown, apical third of the forewing somewhat lighter, the fringes alternately black and yellow-brown. Beneath almost as above, hindwing grey-brown at the apex, with an undulate, interrupted, dark brown submarginal line. Expanse 40 mm. From Peru.

P. monachella spec. nov. (*Thieme i. l.*) (52 a). Above dark brown, in the middle darker, at the distal margin lighter. Fringes dark brown, chequered with white. Beneath the basal half of the forewing reddish brown, distally lighter. Distal border $1\frac{1}{2}$ mm. in breadth, finely striated with dark brown and before the apex

powdered with white. Hindwing dark olive-brown, marbled and spotted with black, distal area lighter with a strongly dentate olive-brown submarginal band, a row of white dots before it, and some whitish yellow spots and streaks at the costal margin and anal angle. The distal margin is entirely dark brown. From Huancabamba, North Peru, at 3000 m.

agraulis. **P. agraulis** *spec. nov.* (51 f). ♂: above reddish brown, somewhat glossy, at the base somewhat darker. Forewing with 3 white dots before the distal margin in cellules 3, 4 and 5. Fringes white, spotted with black on the veins. Hindwing with 4 white dots in cellules 2 to 5. Marginal lines dark brown, fringes unicolorous brown. Forewing beneath brown, apex and distal margin white, irrorated with dark brown. The white dots of the upper surface are likewise present. Hindwing beneath dark grey, marbled with white and black, at the costal margin 2 broken white spots, at the inner margin 2 triangular grey spots, before the distal margin a row of white dots in black rings. Fringes brown. Differing from *monachella* in the absence of the dark brown scale-spot in the middle of the forewing above, the different shape of the markings on the hindwing beneath and especially in the absence of the dark black-grey border. Moreover the incisions in the distal margin are deeper and the teeth more pointed. From Bolivia.

35. Genus: **Steremnia** *Thieme*.

This genus lacks not only the teeth beyond the middle of the costal margin of the hindwing which *Steroma* possesses, but also the one placed at the apex itself, which projects rectangularly in *Pseudosteroma*. Hence the somewhat convex costal margin of the hindwing passes into the distal margin in almost an even curve. The excision of the inner margin is not so deep and the teeth of the distal margin project less than in the two preceding genera.

polyxo. **S. polyxo** *Godm. & Salv.* Above brown, in the ♂ unicolorous, in the ♀ with an obscure reddish brown submarginal band on both wings. Beneath the forewing brown, with yellowish brown apex. Hindwing yellowish brown, striated with dark brown, with a yellowish band before the middle, which is anteriorly widened and cleft into two. Before the distal margin a broad yellowish band, which in the posterior half of the wing projects widely proximad in 2 teeth, forming the letter W. Collected in the Sierra Nevada of Santa Marta (Colombia) by SIMONS and TETENS.

rugilas. **S. rugilas** *Thieme* (52 a). Above brown; on the forewing somewhat reddish before the middle of the distal margin. Forewing beneath reddish brown with grey apex, hindwing black-brown marbled with light, with indistinct white median band, arising from a white costal spot, and a row of white dots before the somewhat lighter distal margin. Colombia, Callegos on the Quindiu Pass at an elevation of 3000 m. (FASSL).

misella. **S. misella** *Thieme* (52 a). Above olive-brown, towards the margin somewhat lighter, the ♂ with scale-spot. Fringes of both wings chequered with brown and white. Beneath dark brown, at the distal margin of the hindwing and the apex of the forewing somewhat lighter and finely striated with dark, with an indistinct submarginal line. The teeth of the hindwing project but little. From Huancabamba in North Peru.

36. Genus: **Gyrocheilus** *Bltr.*

Costa of the forewing strongly curved, distal margin but little undulate, that of the hindwing dentate, inner margin of the hindwing rather strongly excised. The costal vein of the forewing is rather strongly swollen. Of the subcostal veins of the forewing the first arises before the end of the cell, the 2nd just at its anterior angle, the rest behind it. The middle discocellular vein on both wings is angularly bent inwards, consequently the posterior part of the cell is longer than the anterior. Medium-sized, dark brown butterflies, inhabiting Mexico and the neighbouring state of Arizona.

patrobas. **G. patrobas** *Hew.* (52 b). Above dark brown, forewing with 4 white dots in a row, fringes chequered with black and white. Hindwing with a broad red-brown submarginal band, on the proximal edge of which stand 2 white dots in cellules 2 and 3, and with a narrow, somewhat obscure red-brown stripe between this band and the distal margin. Beneath the wings are even darker brown than above. On the forewing the apex is powdered with white and the white dots are placed in black rings. On the hindwing the distal margin is broadly bluish grey, marbled with red-yellow and brown, at its proximal side is placed a row of whitish yellow spots, at its distal side several brown lines separated by red-yellow ones. In the highlands of Mexico (*tritonia.* Oaxaca, North Sonora, Durangocity, Jalapa). — The form **tritonia** *Edw.* only differs in its darker upper surface, the infuscated red-brown band of the hindwing and the absence of the white dots in this band. On the forewing above and beneath there are sometimes only 3 white dots instead of 4. From Arizona and North Mexico.

37. Genus: **Elina** *Blanch.*

In this genus 2 subcostal veins arise before the end of the cell on the forewing, the rest beyond it. The costal and median of this wing are inflated at the base. The distal margin of the forewing is undulate, that of the hindwing strongly dentate and its inner margin excised. The genus consists of medium-sized and small butterflies, and occurs in Chile and the adjoining and neighbouring countries.

E. lefebvrei *Guér.* (= *montrolii* *Feisth.*) (52 b). Above brown with a red-brown submarginal band which is strongly constricted in places and on the forewing interrupted by the brown veins. Before the apex of the forewing are placed on this band some ochreous longitudinal rays and 2 dark brown spots. There are sometimes also a small brown spot in cellule 2 and a brown spot in the same cellule of the hindwing. The basal and median areas are strongly dusted with red-brown. On the under surface the forewing is rust-brown to the submarginal band, the band ochre-yellow, anteriorly white, the 3 dark spots black with white pupils. The distal margin is brown. Across the middle of the hindwing runs a dentate dark brown band, basally blurred, distally as a rule sharply defined. Then follows a grey-white submarginal band sprinkled with brown and then the dark brown distal margin. The ♀ is considerably larger, having an expanse of 70 mm. The basal half of both wings is almost entirely red-brown, the anterior dark spot has a white centre and the under surface is lighter than in the ♂. — The larva is light brown with black longitudinal lines. Head large, with 2 black lines and a light spiracular line, bordered with black beneath; the dorsum is somewhat darker brown, the anal extremity with 2 points. It is full-grown in October and lives on "Coligne" (*Chusquea* sp.?). The pupa is light brown with some black streaks and spots. The butterfly appears in November and December and is locally common in Chile, but more in the plains than in the mountains. It occurs also in Argentina and Uruguay. *lefebvrei*.

E. vanessoides *Blanch.* (52 b). Similar to the preceding species, but somewhat smaller. The hindwing is elongate and less dentate. The band is lighter and the dark brown spots in cellule 2 are absent on both wings above and on the forewing beneath. The dark brown spots before the apex of the forewing have no white pupils on either surface. Hindwing marbled with light and dark brown, crossed by a curved white stripe, interrupted on vein 5. Beyond this a submarginal band, which is somewhat lighter than the ground-colour and bears in cellule 2 a dark brown spot with red-yellow ring. From Valdivia in Chile, where it is not rare. *vanessoides*.

E. calvertii *Elw.* A small species with the distal margin of the forewing straight. The ♂ above dark brown, with 2 small, obscure red-brown submarginal spots in cellules 2 and 3 on both wings. Beneath the forewing is brown, at the base dark red-yellow to the middle, with a broad, straight red-yellow submarginal band, in which is placed before the apex a round black spot with ochre-yellow ring. The hindwing is marbled with light and dark brown, with a large white spot at the apex, strongly sprinkled with brown; a row of white dots is placed before the distal margin. The ♀ shows an increase in the number of the red-brown spots on the upper surface, on the forewing brown dots are placed in these spots and the eye-spot of the under surface shows through above. On the underside of the hindwing the white spot at the apex forms the beginning of an ochre-yellow band, irrorated with brown, which is continued to the inner margin. The distal margin of the hindwing is only slightly undulate in the ♀. The ♂ has on the upperside of the hindwing a spot of velvety scales. Not rare in a wood below the Baños of Chillan in Chile, in December. Also found at Lake Quillen in Argentina (ELWES). *calvertii*.

E. nemyrioides *Blanch.* (= *nemyroides* *Reed*, *neomyrioides* *Elw.*) (52 b). The distal margin of the forewing before the apex produced into an obtuse angle, in the ♂ somewhat more than in the ♀. Otherwise very similar to the preceding species; the ♂ has the same spot of velvety dark brown scales in the middle of the forewing. Beyond this spot the ground-colour is strongly mixed with red-brown. The under surface, which is here figured, is very similarly marked to that of *calvertii*, but the white spot at the costal margin of the hindwing is purer white in *nemyrioides* and is continued as a dentate white line to the inner angle. In the ♂ the red-brown band on the underside of the forewing occurs also on the upperside in the same breadth and encloses here likewise a round black apical spot. The hindwing in the ♀ has on the upper surface a submarginal row of small red-yellow spots and on the under surface the white spot at the costal margin is much larger. From Chile, at the Baths of Chillan and in Valdivia (according to EDMONDS), at San Ignacio and Port Blest (according to ELWES). Not common in the Central Provinces, but less rare in Valdivia (REED). Flies January to March. *nemyrioides*.

38. Genus: **Eteona** *Westw.*

The shape of the wings is about the same as in *Elina*, the distal margin of the forewing is undulate and has below the apex an obtuse angle, that of the hindwing is dentate, but the inner margin of the latter is not excised. Only the costal of the forewing is inflated, the other veins are normal. In the ♀ 2 of the subcostal veins of the forewing arise before the end of the cell, the rest behind it; in the ♂ on the other hand only one before the end of the cell, whilst the 2nd arises exactly at the angle. The butterflies inhabit South Brazil.

E. tisiphone *Bdv.* (*Euterpe* t.) (52 a). Above dark brown with a row of yellowish white spots across both wings, covering the greater part of the hindwing, but on the forewing mostly obsolescent in the ♂. Single ♂♂ have the forewing above entirely black-brown. On the under surface the ground-colour is lighter, the veins black, and between them are placed black longitudinal rays and short white longitudinal streaks. The macular band is pure white and in the ♂ also extends to the costal margin of the forewing. The spots are individually smaller, but their number is larger in both sexes than above. The butterfly is distributed in South Brazil *tisiphone*.

from Rio de Janeiro to Rio Grande do Sul, but also occurs (according to STAUDINGER) in Colombia. BOISDUVAL in his „Species Général“ gave Chile as locality. BUTLER and ELWES, however, do not mention the species in their lists of the Chilean butterflies, and REED expressly says in his „Mariposas Chilenas“ that it is not Chilean.

vulpecula. **vulpecula** Weym. (52 a) is a female form of *tisiphone* in which the macular band on the upperside is not yellowish white but ferruginous red-brown. The cell of the forewing is also reddish brown. Only some small spots before the apex of the forewing remain light yellow. The under surface is entirely brownish ochreous, which colour has absorbed all the white spots and rays, only the black veins, spots and longitudinal rays between the veins being still present. From Rio Grande do Sul.

eupolis. **E. eupolis** Hew. (52 a, b). Forewing above brown with red-yellow longitudinal stripes at the base, a sulphur-yellow band beyond the middle and a spot of the same colour before the apex. Hindwing red-yellow with broad brown distal margin. Beneath as above, but lighter, the apex of the forewing with black longitudinal lines, the hindwing with white, black-edged longitudinal rays between the veins in the marginal area.

flava. From Rio de Janeiro and Esperito Santo. — As **flava** *form. nov.* I introduce a form of *eupolis* in which the red-yellow colour of the forewing above and beneath is replaced by sulphur-yellow and the greater part of the hindwing is lemon-yellow; of the red-yellow colour of *eupolis* only a stripe about 4 mm. in breadth beside the brown distal margin remains. Beneath the lemon-yellow ground-colour of the hindwing extends nearly to the termen, the brown border being absent, but the black lines and veins, as well as the white, black-edged longitudinal rays, are as in *eupolis*. From Esperito Santo.

39. Genus: **Zabirnia** Hew.

Size and shape of *Catagramma*. Head small. Eyes naked. Palpus long and thin, twice as long as the head, covered with long hairs. Antenna less than half the length of the forewing, with long club. Forewing: costal and distal margins convex. Inner margin straight. Costal strongly swollen at the base and reaching to the middle of the costal margin. Two subcostal veins arise before the end of the cell, which is somewhat more than half the length of the wing. The upper discocellular is short, the middle forms an angle inwards. The distal margin of the hindwing is semicircular, the cell less than half the length of the wing.

zigomala. **Z. zigomala** Hew. Above dark brown. Basal half of the forewing reddish orange with the veins black. Beneath as above, but lighter brown, the distal half of the forewing and the whole of the hindwing, with all the veins and the lines between them black, on the forewing 2 ochre-yellow spots at the costal margin beyond the middle and a round black spot between the 1st and 2nd median vein. The hindwing has beyond the middle an indistinct band, somewhat lighter than the ground-colour, running parallel with the distal margin. 54 mm. From Jima in Ecuador. Coll. HEWITSON (Brit. Mus.).

40. Genus: **Sabatoga** Stgr.

Apex of the forewing produced, not pointed but rounded, the inner angle on the contrary strongly rounded off, the costal margin nearly straight, hence the forewing is comparatively narrow. Only one subcostal vein arises before the end of the cell, subcostal vein 4 runs into the costal margin immediately before the apex. Hindwing with an obtuse angle in the middle of the distal margin. The rest of the venation of this wing is as in *Idioneura*; the cell is distally as strongly rounded as in that genus. Palpus long, with long hairs. Antenna thin with the club strongly thickened. Eyes naked.

mirabilis. **S. mirabilis** Stgr. ♂: forewing brown-black with a large, transparent white inner-marginal spot and a small elongate subapical one. Hindwing whitish, inner margin, base and costal margin densely dusted with dark brown-grey; only the apical half is pure white, with a row of black spots (which, however, may also be absent). Beneath the forewing is dirty white, with the apical area red-brown or dull yellow-brown. Hindwing brown, towards the inner margin grey, on the median vein, the three median branches and the lower radial are placed silvery stripes, some of which are bordered with brown. 5 black dots between the veins. Only 2 examples of the species are known, in coll. STAUDINGER (now in the Zool. Museum in Berlin). They came from the THALENHORST collection at Hamburg and bear the locality-label: Sabatoga in Colombia.

41. Genus: **Lymanopoda** Westw.

Palpus long, with long, stiff, erect hairs, only the dorsal surface and the terminal joint short-haired. Antenna with the club gradually thickened. A special distinguishing mark of the genus is that the forelegs of the male are very much aborted. Eyes slightly hairy. In the forewing the costal is inflated at the base, the median only slightly thickened, the submedian not at all. Two subcostal veins arise before the end of the cell and the 4th subcostal runs into the costal margin before the apex. The upper discocellular is short, the middle and lower vary in the different species. Sometimes the middle, sometimes the lower, forms a proximally directed angle, from which arises a small vein running into the cell. Occasionally, however, this veinlet

is placed at the point where the two veins meet, thus forming a continuation of the lower radial. The hindwing of several species shows a similar recurrent veinlet, its position varying as in the forewing. — The genus is composed of small or quite moderate-sized butterflies, mostly with rounded wings. Only the apex of the forewing is in several species almost squared, in single cases even pointed. Others have an obtuse angle in the middle of the distal margin of the hindwing, while in others again it is placed at the anal angle of the hindwing. The upper surface is mostly unicolorous brown, only a few species having the ground-colour white or glossy blue. Frequently white dots are placed in a curved row on both wings, occasionally these are replaced by eye-spots. Single species have silvery spots or bands on the underside of the hindwing. The head-quarters of this genus are the Andes of tropical western America, where it is distributed from Costa Rica to Peru.

Upper surface white.

L. lactea Hew. White, base dusted with darker; forewing: costal and distal margins reddish, a black *lactea* submarginal stripe, also a spot in the middle of the costal margin, a large quadrate spot at the apex and a small, round, white-centred spot between the 2nd and 3rd median veins, all black. On the hindwing the veins are black towards the distal margin; 2 black dots in cellules 4 and 5 and one in cellule 1 c. Beneath white, the margins of the forewing and the whole of the hindwing light yellow. The spots on the forewing are in part indistinct. The hindwing is traversed by 2 oblique red-brown bands, on the lower of these bands are placed 3 black dots, a black dot at the apex and 3 further dots in the posterior half of the wing. Expanse 40 mm. From Colombia.

L. galactea Stgr. (52 c). Slightly glossy white. Forewing with the costal margin narrowly black and *galactea* with a broad black distal border, decreasing but little in breadth posteriorly and reaching to the first median vein. In this are placed several white dots. Hindwing with black spot in the anterior part of the distal margin. On the under surface the terminal band is shorter and its distal half is brownish. The white dots are here bordered with black. The underside of the hindwing is crossed by 3 brown transverse stripes which show through slightly above. From Cillutincara (province of Yungas, Bolivia). Collected by GARLEPP.

L. eubagioides Bthr. Similar to the preceding. White, at the base blackish green, costa, apex and *eubagioides* distal margin of the forewing narrowly ferruginous, the space before the apex from the costa to the first median vein black. The distal half of the cell and 2 spots in cellules 2 and 3 are also black. In the black apical area are placed a semicircular spot at the end of the cell, an oblique band midway between cell and apex and 4 small dots before the apex, all white. Beneath white, the forewing with red-brown disc, spotted with white; costa, apex and distal margin pale ochre-yellow. Two dark spots in cellules 2 and 3, the upper with white centre and ochre-yellow ring. Hindwing dirty white, dusted with brown, with a number of oblique brown streaks in the basal area and 7 black dots in the distal area. 43 mm. From Peru.

L. nivea Stgr. (52 c). Forewing white, with black costal and distal margins, the former narrow, the latter *nivea* anteriorly broad, posteriorly narrow; four white dots in a curved row before the apex, a black spot on the discocellular. Hindwing white, only the base dusted with grey. Beneath the costal margin and apex of the forewing are dusted with yellowish grey. From Ecuador (Quito). — **melia** form. nov. (52 c) is a form of *nivea* *melia*, in which the black spot on the discocellular of the forewing is joined to the black distal margin, so that the distal half of the forewing is black to the middle of the costal margin and to the inner angle, and only interrupted by one larger and 2 or 3 small white spots. The hindwing is dusted with darker at the base. On the underside of the forewing before the apex are placed 3 brown dots in the positions where *nivea* has white ones and a 4th brown dot in cellule 3. In the ♀ the apex of the forewing and the whole hindwing are dusted with yellowish grey beneath. Collected by FASSL at the Quindiu Pass in Colombia at 3800 m. in September to November. — **sororecula** Thieme is a further form of *nivea*; markings on the upper surface not black but bright *sororecula* rust-brown, only the spot at the end of the cell and the distal margin somewhat darkened, the narrow border at the costal margin rust-yellow. From Ecuador, environs of Chimborazo (HAENSCH).

L. huilana Weym. (52 c). The white ground-colour of the upper surface is much darkened in the basal *huilana* half of the forewing by dark brown dusting. The apical half is black-brown extending into the cell and to the inner angle and proximally forming several projecting angles. In it is placed in cellules 4—6 a dull white macular band. In the middle of cellule 2 there is a dark brown spot on white ground. The hindwing is almost entirely covered with brown dusting, so that only in the middle somewhat of the white ground-colour remains. The basal area has white hairs. A row of brown dots before the margin. On the under surface the costal margin, apex and distal margin of the forewing are brownish ochre with the same row of dots as above. Collected by STÜBEL on the Paramo des Huila in Colombia at 4000 m. — **tolima** form. nov. (52 c) is a form of *huilana* *tolima*, in which the forewing is less dark-dusted, so that there is a large white area in the middle, extending from the anterior margin of the cell to the anal angle. The round dark brown spot in cellule 2 is as in *huilana*. The dark dusting of the entire hindwing is on the contrary so strong as to produce a bluish grey colouring,

only interrupted by a white longitudinal ray. The underside of the forewing is as in *huilana*, that of the hindwing is light brownish yellow with the same white longitudinal ray as on the upper surface but here posteriorly bordered with dark brown. The row of dots as above. On the Paramo des Tolima in Colombia, 4200 m., found in January by FASSL.

palumba.

L. palumba *Thieme*. Somewhat smaller than the preceding forms. Forewing white with black-brown apex, costal and distal bordering. The dark costal border embraces the whole cell, extends broadly to the apex and then at the distal margin obliquely recedes nearly to the inner angle without proximal teeth. At the base this margin is glossy slate-green, before the apex ferruginous, otherwise black-brown. A white spot at the end of the cell, a somewhat larger one above it and 3 or 4 white dots before the apex. Hindwing entirely white, at the base with slate-green reflection. The under surface is whitish yellow, clouded with rust-brown dusting, and with a rust-brown spot in the cell of the forewing. From Bolivia (province of Yungas de la Paz).

Upper surface blue.

samius.

L. samius *Dbl.* (52 c). The most beautiful species of the genus. Above glossy blue with black-brown distal margin, which gradually decreases in breadth from the costal margin of the forewing to the inner angle of the hindwing and on the forewing encloses glossy blue spots and white dots. The hindwing is bordered with a row of black dots. Under surface bright ochre-yellow, on the forewing with 3 or 4 small black, white-pupilled eye-spots and some white dots before the apex, corresponding in position with the white dots of the upper surface. On the hindwing are placed a curved row of black dots and a dentate brown submarginal line. Two brownish transverse stripes run from the basal half of the inner margin to the apex. The ♀ is lighter and less glossy blue above. The inner margin of the hindwing is dusted with brownish grey as far as the median. Sometimes the blue colour is changed into a delicate red. According to FASSL the egg is nearly as large as that of *Pap. machaon*, but pear-shaped, broader above than beneath, somewhat constricted in the middle, reddish grey, with a silky gloss, and with narrow longitudinal ribs, terminating above in a dark elevation. The larva is still unknown; the foodplant is probably the wild mountain sugar-cane (*Chusque*), near which FASSL mostly took the butterflies. Bogotá (Colombia) on the mountains bordering the plateau, at altitudes of 2800 to 3200 m. On account of its rapid flight the butterfly is difficult to catch.

caeruleata.

L. caeruleata *Godm. & Salv.* Above similar to the preceding species, but beneath quite different. The black distal margin of the glossy blue upper surface is somewhat broader, the blue spots in it are absent, only the white dots being present above. On the underside the forewing is brown at the base, the central area broadly black with blue spots and white dots, the apex and distal margin light ochre-yellow. The hindwing is entirely ochre-yellow, at the base dusted with brownish, with 2 brownish transverse stripes in the basal half, a brown, dentate submarginal line and a row of 7 dark brown dots. From the Sierra Nevada, Santa Marta, Colombia (SIMONS).

Upper surface brown.

cinna.

L. cinna *Godm. & Salv.* Above brown, forewing with a curved row of 6 white dots. Hindwing with the base blue, this colour extending along the inner margin to the anal angle. Beneath the forewing is reddish brown, at the distal margin lighter. The white dots are as above, but all placed in black rings, and on the discocellular there is a light, black-margined patch. The hindwing is somewhat lighter reddish brown and bears beyond the middle an obscure row of round brown spots with white central dots. Before and behind this row of spots a dentate brown transverse line. From Guatemala, San Lucas Toliman near the Lake of Atitlan, taken by CHAMPION at an elevation of 5000 ft. Only one example, in coll. GODMAN and SALVIN.

marianna.

L. marianna *Stgr.* (52 d). Above black-brown. Forewing with 3 white dots before the apex, hindwing with large golden green inner-marginal spot. Beneath the forewing is chestnut-brown, with the apex brownish yellow, and before it 3 white dots, 2 black, white-pupilled eye-spots between the median veins. Hindwing beneath brownish yellow with 2 brown and 2 white-grey transverse bands, as well as 4 or 5 black dots with white centres. From the mountains of Merida (Venezuela).

labda.

L. labda *Hew.* (52 d). ♂: above unicolorous dark brown. Beneath reddish brown. Forewing with 5 silver-white dots in an interrupted row before the distal margin, the last 2 in black rings. Hindwing with 2 transverse rows of silvery spots and with several small silvery spots and dots between them and at the anal angle. The ♀ was discovered by FASSL and is very different from the ♂. It has on the upperside of the forewing 5 white dots, 3 before the apex near the distal margin and 2 further removed from the margin between the median veins. The hindwing is unicolorous brown. Beneath the forewing is yellowish brown to two-thirds of its length, the distal margin ochre-yellow. Instead of 2 eye-spots there are here 3 before the inner angle. The white dots before the apex are larger than in the ♂. The hindwing has no trace of silvery spots. It is yellowish white-grey, with the base dusted with light brownish yellow and with 2 transverse stripes of the same colour,

one placed just behind the cell, the other before the distal margin. Localities: Colombia and Ecuador. The ♀ was found by FASSL on the Quindiu Pass at Machiu at 2500 m.

L. lebbaea *Fldr.* (52 d) is somewhat similar to the preceding species, but the forewing is more pointed *lebbaea*, with the distal margin nearly straight. On the under surface the hindwing and the apex of the forewing are not red-brown but brownish ochre. The silvery spots on the hindwing are much reduced in number. Of the first silvery transverse band only the large spot at the end of the cell is present. The 4 spots of the 2nd transverse band are smaller, the last spot in particular indistinct. Several of the other silver dots are also absent. From Bogotá (Colombia). The figure is from FELDER's type in the Tring Museum.

L. ferruginosa *Btlr.* Similar to *labda*, but with the apex of the forewing more rounded and the inner *ferruginosa*, margin shorter. The distal margin of the hindwing is somewhat prominent in the middle. Above brown, forewing with a white dot before the apex and another in the disc. On the under surface of the hindwing all the larger discal spots are not silvery, as in *labda*, but orange, only the spot before the discocellular is yellowish silvery. From Bolivia. — **translucida** *Stgr. i. l.* is a form of *ferruginosa* in which the reddish yellow macular *translucida*, bands of the under surface of the hindwing show through weakly on the upperside also. On the upperside of the forewing is placed before the apex a short, indistinct red-yellow band, and beside it proximally 1, distally 3 white dots. Beneath the distal half of the forewing is bright ochre-yellow with 2 black, white-pupilled eye-spots between the median veins. From Bolivia. — **hyagnis** *form. nov.* (52 d) is a form with 3 or 4 white dots *hyagnis*, before the apex and in the marginal area on the dark brown upper surface of the forewing. Beneath the basal half of the forewing is light brown, the distal part ochre-yellow, with 2 dark brown, white-pupilled eye-spots and 2 brown spots beyond them between the median veins and with several white spots and dots before the apex. The hindwing is light ochre-yellow, finely dusted with brown, with several brown spots and broken transverse bands. At the posterior end of the cell is placed the silvery spot which is common to all forms of *ferruginosa*. Bolivia. — **rana** *form. nov.* (*Thieme i. l.*) (52 d). Likewise a form of *ferruginosa*, with the underside *rana*, of the forewing reddish brown and characterized by a broad dark brown submarginal band, in which 2 white dots are placed between the median veins. A white patch stands before the apex and beside it 3 white dots near the distal margin. The hindwing has the ground-colour likewise red-brown and 3 dark red-brown transverse stripes between the middle and the distal margin. Five white dots in a curved row and the silver spot at the end of the cell stand out distinctly. From Huancabamba in North Peru.

L. jonius *Westw.* (52 e). The apex of the forewing forms a right angle. Above brown with 4 white dots *jonius*, in cellules 3—6, the middle 2 placed nearest to the distal margin. Fringes grey. Beneath the base and the costal and distal margins of the forewing are brownish ochre, the middle red-brown, distally darker, with 5 white dots. The underside of the hindwing is brownish red-yellow with 3 oblique, dentate brown lines and a row of black dots. The ♀ is more reddish brown above, the hindwing finely margined with reddish yellow at the inner margin. The forewing has 5 white dots on both surfaces. On the under surface the apex of the forewing and the whole hindwing are light yellowish grey. Instead of the dentate lines of the ♂ there are in the ♀ obscure bands formed of brownish dusting. From Chipaque in the Colombian East Cordillera (3000 m.), where also the ♀ was found by FASSL. Flies in April.

L. excisa *spec. nov.* (52 f). The distal margin of the forewing is slightly excised below the apex, hence *excisa*, the apex is prominent, especially in the ♀. Above brown, forewing with 5 white dots, placed in a very sinuous row. Hindwing without markings. Beneath the forewing is red-brown; before the distal margin a black-brown band, on which are placed 5 or 6 white dots. Hindwing olive-brown with 3 dark brown, almost horizontal stripes and a row of black dots between the 2nd and 3rd. ♀ considerably larger, with the distal margin of the forewing rounded in the middle. The ground-colour of the forewing is reddish brown above, the dots as in the ♂. The hindwing has the inner margin ferruginous brown for a breadth of $1\frac{1}{2}$ mm. The fringes are grey-brown. Beneath the forewing is light red-brown with dark brown spots and bands. The white dots as in the ♂. The hindwing unicolorous yellow-brown with a narrow, oblique brown stripe across the middle. Colombia (Quindiu-Pass, 3500—3800 m., Monte Socorro, 3600 m.). Discovered by FASSL. Flies in July and September.

L. obsoleta *Westw.* (= *larunda* *Hopff.*) (52 e). The hindwing is obtusely angled in the middle of the distal *obsoleta*, margin. Above brown with 2 white dots, one above the other, before the apex of the forewing. Beneath likewise brown with the same 2 white dots and below them 2 black eye-spots with white pupils, the first placed proximally. Hindwing reddish brown, with 2 lilac transverse bands, partly interrupted by rust-red colour, finely dusted with brown all over, with a strongly curved row of 5 to 7 white dots, often bordered with black. The ♀ of this species occurs in 2 forms, which differ not only in the markings but also in shape, one agreeing with the ♂, while the other approaches *gortyna*. The first form (52 e) has the distal margin of the forewing more strongly rounded, but the hindwing has the same obtuse angle as the ♂. On the upperside of the forewing are placed four white dots, two in cellules 4 and 5 near the distal margin and two in cellules 2 and 3 more proximally. The first dot is somewhat larger and transparent. On the under surface of the forewing the 2 eye-spots are as in the ♂, but broadly margined with red-yellow, and the light bands of the hindwing are broader and reddish grey-brown. This form was taken by FASSL at the Quindiu Pass, 2500 m., in West Colombia in Sep-

gortynoides. tember. The other form of the ♀, which I call **gortynoides** *form. nov.*, has been already briefly mentioned by THIEME in the Berliner Entom. Zeitschr., vol. 50, p. 70. It resembles *Lym. gortyna*, but is smaller (expanse 50 mm.), the hindwing not round but bent or obtusely angled at the distal margin and the row of eye-spots on the hindwing not present beneath. THIEME possessed this form from Bogotá, Merida and Bolivia. FASSL has now also met with it flying together with ♂♂ of *obsoleta-larunda* in the Colombian East Cordillera. These ♀♀ have the same strongly undulate hindwing that THIEME mentions, but the eye-spots on the underside of the hindwing are not absent but are present in cellules 1c to 5 (in cellule 1c there are two), and although some of them are small those in cellules 2 and 3 are distinct, and all have white pupils. The upper surface is dark brown. Forewing with 2 large ocelli between the median veins, bordered with red-yellow and with white pupils; sometimes also a somewhat smaller, blind eye-spot below them in the inner angle. Two very small, indistinct ocelli before the apex. On the hindwing are placed 5 round black spots in red-yellow rings, in a curved row, only the last of which has a white pupil. The ground-colour of the under surface is yellowish grey-brown, finely striated with dark brown, towards the base darker. Forewing with the same markings as the upper surface, but with the bordering of the eye-spots lighter. Hindwing variable as regards the eye-spots, as already mentioned above. *obsoleta (larunda)* occurs in Colombia, Venezuela, Peru and Bolivia. — My grounds for employing the name *obsoleta* for this species which is known in Germany under the name *larunda* are as follows: HOPFFER says at the conclusion of his description (Stettin. Ent. Zeit. 1874, p. 361): "Differs from all the species known to me in the distinctly angled hindwing." Thus he has overlooked the fact that the figure of the upper surface of *obsoleta* in the „Genera Diurnal Lepidoptera“ shows just these angles and also agrees with *larunda* in the shape of the forewing, as well as the colouring and markings. Unfortunately the author of the above work gives neither a description nor a figure of the under surface. But I am indebted to Mr. KIRBY of London for a description of the underside of *obsoleta* drawn up from the type in the Brit. Museum and fully agreeing with *larunda* ♂.

gortyna. **L. gortyna** Weym. (53 a). Of this species only the ♀ is known; it is similar to the 2nd form of the ♀ of *obsoleta (larunda)* and to that of *albocincta*. It is, however, larger than either. Ground-colour of the upper surface brown, distally lighter. On the forewing there are 5 eye-spots, of which the 3rd and 4th are placed more proximally and are much larger than the rest. The hindwing has a proximally curved row of 5 small, white-pupilled eye-spots. On the under surface the wing is finely striated with dark brown to the base, the eye-spots on both wings are as above, except that the 2 larger on the forewing are bordered with ochre-yellow and the smaller, at the anal angle, is absent. The hindwing has a somewhat lighter submarginal band. From Paramo de Guasco (2500 m.), Colombia (STÜBEL).

levana. **L. levana** Godm. (51 b). Forewing with the apex pointed, but not sharply, distal margin nearly straight. Upper surface dark brown, both wings with a small black, white-pupilled eye-spot in cellule 2 and one or two black dots above it. Forewing beneath as above, but the distal margin ferruginous, anteriorly broad, posteriorly narrow. Hindwing likewise ferruginous, with a strongly dentate ochre-yellow band. Chapmero near Bogotá, 2800 m. (FASSL). Flies in September.

apiculata. **L. apiculata** Fldr. (53 a, misprinted *apiciculata*). Shape of the preceding species, but the apex of the forewing somewhat sharper and the distal margin slightly excised below the apex. Above dark brown, distally somewhat lighter, without markings. Beneath likewise dark brown; forewing with a fine, dentate dark brown submarginal line, which is followed by grey dusting to the distal margin, proximally broadly dusted with yellowish. Beside this a row of white dots. Hindwing with broad grey-brown distal margin, also with a row of white dots at its proximal side and traversed by a dark brown dentate submarginal line. In the middle of the hindwing a row of yellowish brown spots. Colombia (Bogotá [LINDIG], Boqueron de Cipaque in the Colombian East Cordillera, 3200 m.). Flies in January (FASSL). — **curvilinea** *form. nov.* is a form of *apiculata* which has on the underside of the hindwing a somewhat outcurved white line instead of the row of yellowish brown spots. This line traverses the whole wing from $\frac{2}{3}$ of the costal to $\frac{2}{3}$ of the inner margin. Boqueron de Cipaque, 3200 m., Colombian East Cordillera (FASSL).

altis. **L. altis** Weym. (52 f). The apex of the forewing is rectangular; the hindwing rather obtusely angled at vein 4 and its distal margin somewhat undulate. Above brown; the basal half of both wings somewhat lighter brown. Beneath lighter brown. The apex of the forewing occupied by a red-brown triangle, at the proximal edge of which are placed several white dots. Between the median veins 2 black, white-pupilled eye-spots in red-yellow bordering. Across the middle of the hindwing runs a straight white band, irregularly defined at the edges, from the costal to the inner margin, including the apex of the cell. Beyond this a row of white dots. Colombia (Paramo de Aponte, 2800 m.) (STÜBEL), Ecuador.

leaena. **L. leaena** Hew. (52 f). Above dark brown; distally reddish brown. Forewing beneath as above, but with a submarginal row of white dots. Hindwing beneath brown with a straight, light yellow band through the middle and a row of white dots beyond it. Distal margin dusted with grey. The ♀ differs from the ♂ only in having a small, triangular white spot on the upper surface at the apex of the hindwing, which marks the beginning of the light band of the under surface. Colombia, eastern slopes of the Cordillera of Bogotá, 2000—2500 m.,

Parano de Aponte, 2800 m. (STÜBEL), Quindiu Pass, 3800 m. (FASSEL), Ecuador: Quito (STÜBEL). — **lanassa** *lanassa* Fldr. (52 f) is a form of *leaena* with somewhat broader wings, in which the white dots are absent on the underside of both wings and the light yellow band is narrower. Before the margin of the forewing there is a dentate brown line on the under surface. Bogotá. — **satura** *form. nov.* (52 f). Likewise a form of *leaena*, *satura*, on the under surface of which the posterior white dot of the forewing and also the first two and the last two dots on the hindwing are replaced by eye-spots. These are black with white pupils and yellow rings. Before the distal margin a dark brown dentate line. Sometimes the eye-spots are very small and indistinct. Cuzco, 2—3000 m. (Peru), Quindiu Pass, 2400 m. (Colombia, FASSEL).

L. lisa *spec. nov.* (52 f). An easily recognized species. Above brown with a red-yellow band beyond *lisa*, the middle of the hindwing, which in the anterior half is narrow and indistinct, but in the posterior half gradually increases in breadth and at the inner angle extends along the distal margin. On the under surface the forewing is unicolorous dark brown; the hindwing likewise dark brown with a straight, light reddish yellow band, occupying the same position as above, anteriorly 1 mm., posteriorly 2 mm. in breadth, sharply defined at both sides and proximally bordered by a white line. Beyond this 2 fine white dots in cellules 2 and 3, and before the distal margin a brown undulate line. South-East Peru.

L. albocincta Hew. (52 c). ♂: above unicolorous brown. Beneath reddish brown, forewing with 1 or 2, *albocincta*, occasionally 3 white dots, which, however, may also be entirely absent. Hindwing finely striated with dark brown, with a fairly straight white band, which is interrupted by the brown veins. The very different ♀ (52 c) was discovered by FASSEL. It is similar to *gortyna* and *gortynoides* and is distinguished by the large black eye-spots, with white pupils and red-yellow rings, on the upperside of the forewing between the median veins. In cellules 4 and 5, nearer to the distal margin are placed 2 small black rings with white centres. Hindwing without markings. Beneath the forewing is brown, costal and distal margins brownish grey, irrorated with dark brown, the large eye-spots as above; the small eye-spots replaced by white dots. Hindwing brownish grey, irrorated with dark brown, with lighter submarginal band. From the Rio Vitaco, 2500 m., West Cordilleras (Colombia).

L. albomaculata Hew. (52 g). Above brown. Beneath reddish brown, forewing with a straight row *albomaculata*, of white dots, hindwing with a curved row of 7 nearly round white spots. Sometimes some white dots are present also on the upperside of the forewing. Colombia, Rio Pongo in Bolivia. — **affineola** Stgr. i. l. (52 g) *affineola*, is a form of *albomaculata* in which the first three white spots on the underside of the hindwing are rather large, but the other 4 very small and punctiform, so that the row appears much more strongly curved. Sometimes the first and third spots are also very small. On the under surface of the forewing the two posterior white dots are placed in black rings and removed somewhat proximad. On the upper surface there are on the forewing 3 white dots, on the hindwing one. Cuzco in Peru, Bolivia. — **apulia** Hopff., a further form of *albomaculata*, *apulia*, differs in having the white macular band on the underside of the hindwing running straight across the disc like a string of pearls. The separate spots are round, of uniform size and placed rather close together. On the upperside of the forewing are 3 red-yellow submarginal spots and on the hindwing a red-yellow subapical spot. From Bolivia.

L. maso Godm. is aberrant in shape. The apex of the forewing is truncate, the distal margin consequently projecting in an obtuse angle, that of the hindwing is dentate and forms a right angle at the 3rd median vein. The upper surface is unicolorous brown. Beneath likewise brown, apex of the forewing and inner margin of the hindwing dusted with lilac. Forewing with an almost straight submarginal row of 6 white dots. Hindwing with an excurved row of 6 or 7 white spots, with yellow central dots. 48 mm. From Colombia (Frontino in Antioquia).

L. villarresi Dogn. has the distal margin of the forewing rounded. That of the hindwing is somewhat *villarresi*, undulate with the inner angle obtuse. The upper surface is unicolorous brown, the under surface likewise brown, at the distal margin lighter, with a short row of 2 or 3 white spots not far from the apex, near the costal margin. 48 mm. From Loja in Ecuador.

L. euopis Godm. & Salv. Distal margin of both wings rounded. ♂: above brown. Forewing with 5 *euopis*, black, white-pupilled eye-spots in a curved row before the distal margin. Hindwing in the middle with a row of 5 black, non-pupilled spots. Beneath ferruginous, the eye-spots of the forewing as above and placed in an ochre-yellow band bordered with dark brown. On the hindwing a row of small eye-spots is present instead of the spots. In the ♀ the eye-spots on the upperside of the forewing are placed in a broad, strongly curved ochre-yellow submarginal band. The distal half of the hindwing is entirely ochre-yellow, only a narrow distal and inner margin and the row of spots are brown. The under surface in the ♀ is light brownish ochre-yellow, darker towards the base; the markings of the forewing as in the ♂, the hindwing with only a row of brown dots. Found by ROGERS at the Volcan de Irazu and Cache in Costa Rica. Rare.

L. panacea Hew. (52 g). Above unicolorous brown. Beneath reddish brown, margin of the forewing *panacea*, and the whole hindwing with undulate dark brown markings. Forewing with 2 black, white-pupilled eye-

- spots and a white dot above them. Hindwing with a row of small black dots, some of which have white pupils. The ♀ is reddish brown above, distally paler, with 4 eye-spots which have light reddish rings and white pupils, the 2 placed before the apex being smaller. From Ecuador (Huamboya, Riobamba). — *venusia* Hopff. (52 g) is a form of *panacea* in which the white dots on the underside are silvery and more numerous. The black dots of the hindwing all have silver-white pupils. From Peru. — *marica* Stgr. (53 a), likewise a form of *panacea*, differs in the ♂ having on the upperside of the forewing 2 distinct black eye-spots between the median veins and sometimes single eye-spots also on the hindwing above. Cuzco (Peru). — *caucana* form. nov. (52 g), a further *panacea* form, has both above and beneath 3 white dots in an oblique row before the apex of the forewing. On the under surface the apex as far as these dots is bright light rust-brown, which colour is continued along the distal margin to the inner angle. The rest of the forewing is dark black-brown with 2 or 3 white dots in cellules 1 b, 2 and 3. The hindwing is dark rust-brown with a curved row of 4 or 5 obscure black dots with white pupils. Cauca Valley (Colombia).
- cillutinarca*. **L. cillutinarca** spec. nov. (Stgr. i. l.) (53 a). Above unicolorous reddish brown, distally somewhat lighter. Beneath the same, on each wing with a row of 4 or 5 white dots, running parallel with the distal margin, some of them placed in fine black rings. A fine dark brown dentate line near the distal margin on both wings. From the Mapiri (Bolivia).
- venosa*. **L. venosa** Btlr. (52 g). Above brown. Forewing in the middle of the distal margin obscurely dusted with brownish red-yellow. Beneath there are 3 red-yellow spots at this place. The hindwing is somewhat lighter brown beneath, with the veins dark brown. Peru, Bolivia.
- acraeida*. **L. acraeida** Btlr. (Trophonina a. Rüb.) (52 g). Above reddish brown with a row of 6 red-yellow spots before the distal margin of the forewing, posteriorly becoming smaller and nearer to the margin. Beneath the ground-colour of the forewing is somewhat lighter brown, the red-yellow macular band is as above, the space between this band and the distal margin is yellow-brown, intersected by the dark brown veins and interneural longitudinal lines. The yellow-brown colour is continued along the costal margin to the base. The hindwing is entirely yellow-brown beneath with the veins and interneural longitudinal lines dark brown. The markings of the under surface mimic those of the Acraeids. ♀ dimorphic, the basal half of the forewing pale reddish, that of the hindwing of a leaden hue, distal half of both wings yellow-brown. On the forewing 2 red-yellow longitudinal streaks are placed before the apex. The two colours of the hindwing shade gradually into one another. The under surface is paler and without the leaden gloss. Ecuador (Riobamba, Huamboya), Peru, Bolivia. — *malia* Godm. (= *marginalis* Stgr. i. l.) (35 a) is a form of *acraeida* in which the hindwing also bears a row of red-yellow spots before the distal margin on the upper surface. Peru (Rio Colorado, Pozuzo).

Note: *Lymanopoda varola* Schaus cf. *Manerebia cyclopina* Stgr. (p. 239).

42. Genus: **Pedaliodes** Btlr.

An extensive genus, characterized by the more or less undulate or angled form of both forewing and hindwing. Only the costal vein of the forewing is inflated at the base; median and submedian not swollen. Two subcostal veins arise before the end of the cell on the forewing. The recurrent vein is not present in either wing, or is only weakly indicated. The eyes are strongly hairy and the rather long palpus densely clothed with stiff hairs. Antenna without distinctly defined club, towards the tip gradually thickened. The headquarters of the genus are the high Cordilleras of Colombia to Bolivia, from whence single species have spread to Mexico on the one hand and Brazil on the other. They replace in these districts the *Erebia* of the temperate zone. They occur far above the forest-region, often in great numbers, frequenting wet places on the road; when disturbed they do not fly up, but seek to hide themselves among the stems of the plants nearest at hand. A very large number of the forms cited here are given by HEWITSON and other authors as *Pronophila*, hence the synonymy of this genus requires careful attention.

Poesia Group.

- poesia*. **P. poesia** Hew. (53 b). As in most species of this group, the forewing is obtusely cut off at the apex. The upper surface is unicolorous dark brown. On the under surface, before the apex of the forewing, is placed a light grey spot finely dotted with brown, on the hindwing a small white spot at the costal margin and a white dot at the anal angle. The ♀ is lighter beneath. It has a light brown, obscure submarginal band on the forewing and a distinct light brown band on the hindwing, which is marbled with dark brown and bears some white dots. A second form of the ♀ is **phanaraea** Hew. (= *phanaraea* Thieme) (53 b, erroneously called *pelinaea* on the plate). It is distinguished from the type-form by having on the underside of the forewing in the middle of the submarginal band beside the white dots several chestnut-red spots placed one behind another. Co-

lombia (Salto de Tequendane [STÜBEL], Quindiu Pass, Rio Vitavo [FASSL]), Ecuador (Huamboya [STÜBEL]).

P. japhleta Btlr. (♂ = polemon Sm.) (53 b, erroneously called *phanaraca* on the plate) is rather like *japhleta*. the preceding species, but differs in the large, triangular white spot at the inner margin on the underside of the hindwing. The ♀ of this species also possesses the rust-red spots before the middle of the distal margin on the underside of the forewing which are present in *phanaraca* and are wanting in the ♂, and the latter was described by GR.-SMITH as *polemon*. Merida (Venezuela).

P. pelinaea Hew. (= *apicalis* Stgr.) (53 b, erroneously called *japhleta* on the plate). Upper surface *pelinaea*. dark brown, before the apex of the forewing with 2 white spots and some white dusting before and behind them. On the under surface these spots are widened into a band, which is continued to the middle of the distal margin. The underside of the hindwing shows a curved row of small spots formed of white dusting and some white dots between them. Bolivia (San Jacinto, Loco Valley, Corvico and San Antonio). The further locality "St. Domingo", given by THIEME from the Tring Museum, is still doubtful.

P. hewitsoni Stgr. (53 b). The upper surface is black-brown, the fringes chequered with brown and *hewitsoni*. white. Beneath the forewing is red-brown to beyond the middle. Beyond the middle of the costal margin is placed a black-brown spot, which is sometimes continued as a dark band to the inner margin; the distal margin is dark brown; before the apex there is a whitish grey spot. Hindwing grey-brown, marbled and banded with dark brown. At the costa are placed two white spots and in cellule 2 a white dot. From Bolivia (Yungas de la Paz, Loco Valley, San Antonio). — Whether **primera** Weeks is a form of *hewitsoni* or a separate species I *primera*. cannot decide, as I have neither seen an example nor the figure. According to THIEME's description the underside of the hindwing has the anal area silver-white and 2 silver dots of unequal size; in *hewitsoni* only one of the latter is present and the former character is wanting. The rest of the markings agree. From Bolivia.

P. perisades Hew. (53 b). The species may be known by the underside of the forewing being almost *perisades*. entirely chestnut-red and by the semicircle of silver-white spots on the hindwing beneath. The upper surface is unicolorous brown. Bolivia (Corvico, Yungas de la Paz).

P. illimania Stgr. (53 c). Above black-brown, the fringes chequered with somewhat lighter brown. *illimania*. Beneath the forewing is similar to that of *perisades*, but has several small white spots before the apex. The hindwing is brown, marbled and banded with silver-grey, a row of white dots and somewhat darker distal margin. Only 1 example, taken by GARLEPP on the Illimani, in Bolivia, at an altitude of 4000 m. Koll. STAUDINGER in the Zool. Museum in Berlin.

P. phrasiela Hew. (= *perperna* Fldr., *labulla* Thieme, *phrasielus* Kirby) (53 c). Above uniform dark *phrasiela*. brown. On the under surface the species is easy to recognize by the round white spot placed in cellule 4 of the hindwing and somewhat out of alignment with the other white dots, being removed basewards; the hindwing marbled with dark brown. In the ♂ there are sometimes indications of a whitish yellow spot at the costal margin of each wing. The ♀ (53 c) has these spots larger and more distinct. In addition the submarginal band of both wings is lighter than in the ♂, and hence stands out much more distinctly. Widely distributed, Colombia (Rio Vitaco and East Cordilleras), Ecuador, Peru (Oroya), Bolivia. According to a figure prepared in the Tring Museum *Pronophila perperna* Fldr. is = *phrasiela* Hew. Hence the name *labulla* Thieme must sink. — **galaxias** Thieme is a form of *phrasiela* in which the costal spots on the under surface of both wings are large *galaxias*. and snow-white. From Peru (Oroya and Callanga) and Bolivia (Rio Songo).

P. leucocheilos Godm. & Salv. In this species the apex of the forewing is not obliquely cut off but *leucocheilos*. obtusely angled and the distal margin is rounded. Upper surface dark brown, before the distal margin with a row of white spots, extending from the costal to the inner margin, gradually decreasing in size and only separated by the broad brown veins. Beneath the forewing is dark brown, with a large whitish triangle before the apex and a red-brown longitudinal stripe, running from the base nearly to the distal margin. The hindwing is marbled with grey and brown, with 2 white spots at the costa and 2 white dots at the anal angle. This beautiful and rare species was found by SIMONS only in the Sierra Nevada, Santa Marta, Colombia and is in the Museum GODMAN and SALVIN.

P. plautius Sm. Above olive-brown, with a brownish white spot at the costal margin of the forewing, *plautius*. before the apex. Beneath the forewing is as above, except that the ground-colour is darker and the white spot larger. Along the distal margin runs a narrow stripe, irrorated with whitish. The hindwing is yellow-brown, marbled with dark brown, with a large light yellow-brown area between the veins of the median and several small spots of the same colour before the apex and in the basal area. Beyond the middle of the costal margin a white spot. A white dot in cellule 2. From Bolivia.

P. puma Thieme (53 c). Above unicolorous dark brown. Beneath the basal half of the forewing is chest- *puma*. nut-red, the distal margin brown with 4 white dots in a row before the apex. The hindwing is peculiarly marked.

It is brownish grey, with a large number of small blackish marks, each of which is of an approximately reniform, but indefinite shape, and which are arranged in transverse rows. In the middle of the costa a silver-white patch, before the apex some white dusting and at the anal angle a white dot. From Bolivia. Coll. STAUDINGER, in the Zool. Museum in Berlin.

Proerna Group.

proerna. **P. proerna** Hew. (53 c). The oldest described species of this group, which are mostly without markings. The distal margin of the forewing is rounded, that of the hindwing undulate. Above unicolorous brown. On the under surface the forewing is in places somewhat reddish, its apex and the whole hindwing marbled with grey, the latter with a white dot at the apex and another at the anal angle. Colombia (Llanos de San Martin); Ecuador (Cerro Pululagua, Huamboya); Bolivia. — **phrasa** Sm. & Kirby (53 d) is a form of *proerna* in which the posterior of the 2 white dots on the underside of the hindwing is larger and more distinct. The reddish dusting is absent, but it is somewhat dusted with grey before the apex of the forewing and in the middle of the hindwing. Also on the upper surface the costa of the forewing and the apex of the hindwing are marbled with grey. From Bolivia. — **obscura** Sm. & Kirby (= *pronoe* Stgr.) is a form similar to *phrasa*, with the upper surface brown, towards the distal margin somewhat lighter, and the incisions in the margin whitish. The 2 dots on the underside of the hindwing are of unequal size, as in *phrasa*, but in *obscura* there are often further some fine white dots towards the costal margin of both wings. Sometimes also the disc of the forewing or the anal angle of the hindwing is somewhat reddish. Bolivia. — **phrasina** Stgr. is merely a local form of *obscura* with the white dots before the costal margin on the underside of the forewing very distinct. From Yungas in Bolivia.

exanima. **P. exanima** Ersch. seems to me to belong in this group. THIEME indeed cites the species in the genus *Pronophila*, where ERSCHOFF had placed it, but ERSCHOFF's work was not at the time accessible to Herr THIEME. Through the kindness of Mr. KIRBY I had some time ago an opportunity of examining this work and was able to make notes and sketches from it. From these I judge *exanima* to be a *Pedaliodes* near to *phrasa*; ERSCHOFF describes it as follows: Expanse 55 mm., forewing with the margins entire, hindwing weakly dentate. Both wings unicolorous brown above. Beneath likewise brown, the hindwing with rather broad, somewhat lighter border, in which is placed in cellule 2, about 3 mm. from the distal margin, a distinct white dot. According to the description and ERSCHOFF's figure, which represents a female, no other dots are present. Locality: Pumamarca, Peru.

fumaria. **P. fumaria** Thieme (53 c). Upperside of both wings and underside of the forewing as in *proerna*. On the under surface of the hindwing is placed a half-band, composed of grey-white atoms, which runs from the inner margin nearly to the middle of the wing and is proximally pointed. In the ♂♂ this band is often scarcely indicated, in the ♀♀ on the contrary very distinct. Venezuela (Merida).

simpla. **P. simpla** Thieme (53 d). One of the smallest and plainest species. The distal margin of the forewing fairly straight, that of the hindwing undulate. Above dark brown, in the distal third gradually becoming somewhat lighter, in the middle of the forewing an indistinctly defined dark scent-scale spot. Beneath the colouring is lighter brown, almost without dark marbling. A minute, scarcely visible white dot in cellule 2 of the hindwing, in the Peruvian examples entirely absent. Ecuador (Baños), Peru (Huancabamba, Guzco).

empusa. **P. empusa** Fldr. (= *dryas* Stgr. i. l.) (53 d). Above unicolorous brown, fringes of the forewing chequered with brown and white, those of the hindwing with brown and light brown. On the under surface the forewing is irrorated with light brown before the apex, at the costa there is a white spot and in cellules 2—5 four white dots in a straight row. Hindwing finely striated with brown all over, a white curved spot at the costal margin and two white dots in cellules 2 and 3. From the neighbourhood of Bogotá and Muzo in Colombia and from Guzco (Peru).

poetica. **P. poetica** Stgr. (53 d) is very like *empusa*, and according to THIEME may be regarded as a Bolivian form of this, but the forewing is more rounded at the apex and on the underside of the forewing the row of dots and the costal spot are absent, while on the other hand there are at the costal margin 4 fine white dots at fairly uniform distances apart and below them some sparse white dusting. The underside of the hindwing is sprinkled all over with fine white dusting, especially at the distal margin. The white spot at the costal margin of this wing is larger than in *empusa* and divided into 2 parts by the subcostal vein. The fringes on both wings are unicolorous brown above and beneath, not chequered. Hence I regard *poetica* as a good species. From Cocapata in Bolivia. — **exul** Thieme (53 e) is a form of *poetica* in which the dark brown scent-scale spot on the upperside of the forewing extends from the inner margin to the base and the fine whitish dusting on the underside of the hindwing and at the costal margin of the forewing is absent. The white spot at the costal margin of the hindwing is smaller. The fringes are brown as in *poetica*. The most southern form of the species. Rio de Janeiro.

naevia. **P. naevia** Thieme resembles *proerna* above, being dark brown with narrow scale-spot. Beneath some-

what lighter. The forewing has here 4 white dots at the costa as in *poetica*, of which the second, reckoning from the apex, is extended into a small spot. Before the middle of the distal margin a rather small, sharply defined chestnut-red wedge-spot. Hindwing ferruginous, but little clouded, with an indistinct dark discal band, a very small, obscure grey costal spot and a white dot at the anal angle. From S. Inez in Ecuador.

P. auraria *Thieme* (53f). Upper surface brown with very large, straight-margined scale-spot, extending to the costal and inner margins. Beneath lighter brown, at the costal margin irrorated with dark brown and gold-yellow, mixed with silver-white scales. Fringes chequered with brown and white. The hindwing beneath marbled with brown and black-brown, with a row of white submarginal dots and a bright gold-yellow costal spot, such as otherwise only recurs in *pullantias* *Hew.* From Vilcanota in Peru. 2 ♂♂ in coll. STAUDINGER in the Zool. Museum in Berlin.

Prosa Group.

P. prosa *Stgr.* (= *phrasina* *Sm.*) (53 f). Above dark black-brown, the scent-scale spot only reaching as far as the posterior end of the cell. Under surface brown, both wings with a broad lighter brown submarginal band, traversed in the middle by a row of white dots. The dot in cellule 2 of the hindwing is larger than the rest. At the costal margin of this wing a white spot, at the inner margin sometimes an obscure red-brown one. From Bolivia (Loco Valley, San Jacinto, Yungas de la Paz). — **phrasiclea** *Sm.* (53 d) is a form of *prosa*, chiefly differing in the absence of the white costal spot on the underside of the hindwing, the presence of a distinct rust-red spot at the inner margin of this wing and of a grey band in the cell of the forewing. From Bolivia. — **phrasis** *Sm.* (53 e) is a form in which the darkening has proceeded still further. The basal half of both wings is entirely dark brown and only the distal part of the submarginal band is perceptible, while only the white dots stand out distinctly. From Bolivia.

P. pheretiades *Sm. & Kirby* (= *subtangula* *Stgr.*) (53 f). This species may be known by the snow-white apical spot on the underside of the forewing, below which is placed a brownish red-yellow spot. The upper surface is dark brown, in the middle of the forewing with a velvety scent-scale spot, distally lighter. The white spot of the under surface shows through above, but is here light brown. — In the form **suffumata** *Stgr.* this spot is dull white on the upper surface, somewhat dusted with brown. The red-yellow spot on the under surface is often joined to the white apical spot. Bolivia, 1500—3000 m.

P. emma *Stgr.* A beautiful species; upper surface brown with 4 oval white spots before the distal margin of the forewing, which decrease in size posteriorly, except that the 3rd is somewhat smaller than the 4th. On the under surface the last 2 white spots are placed in broad black rings, otherwise they are as above. The underside of the hindwing is as in *pheretiades*. From the Rio Songo (prov. Yungas de la Paz in Bolivia).

P. panthides *Hew.* (= *panthus* *Kirby*) (53 f). Upper surface unicolorous brown. Beneath the forewing is red-brown in the basal half, distally marbled with brown and dark brown and with 2 dark transverse bands. Hindwing marbled with light and dark brown and with a darker band across the middle, a row of darker spots before the margin and 2 or 3 white dots. Bolivia (Yungas de la Paz, Cocopata).

Perperna Group.

P. perperna *Hew.* (= *Pronoph. satyroides* *Fldr.*) (53 c). Above dark brown, distally somewhat lighter, the ♀ with a black, white-pupilled eye-spot in cellule 2 of the forewing, which in the ♂ is usually replaced by a round black spot, but may sometimes also be entirely absent. In single cases, however, this spot has also in the ♂ a white pupil. On the under surface the eye-spot is always large with a distinct white pupil, a second eye-spot is placed in cellule 2 of the hindwing and a further round white spot before the apex of the forewing. In the ♀ these eye-spots and dots on a yellowish grey, sometimes somewhat reddish, submarginal band, striated with brown. In the ♂ this band is less distinct. Costa Rica, Panama (Chiriqui), Colombia (Cauca Valley, Carmen, 1600 m.), Venezuela (Caracas). — **petronius** *Sm.* is a form of *perperna*, distinguished by the larger size of the ♀ (65 mm. in expanse). The apex of the forewing is somewhat more produced, otherwise the shape is as in *perperna*, the somewhat prominent angle at the 3rd median vein of the hindwing being also present. The upper surface of both wings is velvety dark brown, the distal third of the forewing is somewhat lighter. The eye-spot of *perperna* is absent above. On the under surface the submarginal band of both wings is broader and more distinct. Proximally to this band is placed at the costal margin of the forewing a brownish white triangle and at the costal margin of the hindwing a brownish white spot. The eye-spot on each wing and the white dot in cellule 5 of the forewing are as in *perperna*. The male is still undescribed. From Valdivia in Colombia. Coll. GROSE-SMITH.

Pisonia Group.

- pisonia*. **P. pisonia** Hew. (53 f). Above unicolorous brown, lighter towards the distal margin. Beneath lighter brown, finely dark marbled, beyond the middle with an angled dark brown transverse stripe, followed distally by the somewhat lighter submarginal band, and with a more or less distinct row of white dots on both wings. The dot in cellule 2 of the hindwing is bordered with black. The ♀ is lighter brown above and has on the forewing a dark brown band. — **manis** Fldr. (53 e) is a form of *pisonia*, differing in its smaller size and in having the inner margin of the hindwing beneath rust-red, this colour varying in its extent. The forewing is also less elongate and its distal margin somewhat more rounded than in *pisonia*. The ♀ of *manis* likewise differs from the ♂ in the lighter colouring above and beneath. Both forms occur in the high mountains of Venezuela, Colombia, Ecuador, Peru and Bolivia. — **dejecta** Bates (= lithochalcis Btlr.) (54 a) is likewise a form of *pisonia*, distinguished by the rust-brown gloss between the medians on the underside of the forewing. From Costa Rica, Guatemala, Panama. — **circumducta** Thieme, a further form belonging here, very near to *dejecta*, has on the upperside of both wings a broad submarginal band of glossy, light olive-brown colour. The scale-spot on the forewing is not so large as in *dejecta* and more divided into streaks. This form reaches furthest north of all the *Pedaliodes*. It inhabits Mexico. Coll. STAUDINGER (formerly SOMMER), now in the Zool. Museum, Berlin.
- manneja*. **P. manneja** Thieme (= Pronoph. *pisonia* Hew. var., Pedal. *manis* Kirby) differs from *pisonia* in having the upper surface unicolorous brown, not lighter distally, and in having a white costal spot on the underside of the hindwing. The submarginal band on the forewing beneath is only distinct proximally, becoming obsolescent distally. From Venezuela. The locality "Colombia" is uncertain. The butterfly is only represented in old collections and has not been found for the last 50 years.
- pomponia*. **P. pomponia** Hew. Shape as in *pisonia*. Above olive-brown. Forewing with a light golden brown submarginal band of moderate breadth, which is proximally rather sharply defined. The under surface is grey-brown, mostly with dark brown undulate markings, both wings with a black-brown bordered submarginal band, on the forewing of a light wood-colour, on the hindwing light grey-brown and strongly sprinkled with dark brown. From Ecuador (Pishcourco and Santa Inez).

Panyasis Group.

- amussis*. **P. amussis** Thieme (54 a). This species may be recognized by the almost straight costa of the hindwing, the apex of which is sharply rectangular, a form which does not occur elsewhere in *Pedaliodes*. For the rest the margin of both wings is obtusely dentate, with a somewhat prominent angle below the apex of the forewing. Above unicolorous brown, the tips of the fringes in the incisions white. Beneath the forewing is olive-brown with broad, somewhat lighter submarginal band, on which is placed a row of white dots, and with the apex brown, marbled with white. The hindwing is marbled with light and dark brown beneath, with several rows of dark brown spots, 2 white costal spots and a row of white dots. Colombia (province of Cauca).
- phanias*. **P. phanias** Hew. (54 a). Above unicolorous brown, before the distal margin somewhat lighter. Beneath with dark brown transverse lines, dark striation and lighter submarginal band on both wings. The ♀♀ are sometimes very large (cf. pl. 54 a). The early stages have been described by W. MÜLLER. The full-grown larva is nearly 3½ cm. in length, thickened in the middle and terminating in 2 short anal points. The face is quadrate, brown, bordered with black, the cheeks are dark grey, the dorsal part light grey, the vertex bearing 2 short, obtuse, conical horns. The body is light grey with grey-green lateral stripes and in addition on the first 3 segments with a darker longitudinal stripe. Above the stigmata are placed posteriorly ascending lines. The larva lives on bamboo and is suspended free for pupation. The pupa is dull white and light grey. It has several obtuse angles and irregularities in the middle and 2 moderately long horns. The butterfly is distributed in South Brazil in the provinces of Minas Geraes and Parana and also occurs in Paraguay. — **granulata** Btlr. is a large form of *phanias* in which the central area on the underside of both wings is marbled with dark brown and with the distal boundary uniformly dentate. Thus the light submarginal band on both wings is not broader at the inner than at the costal margin. From Colombia (Bogotá). — **silpa** Thieme, a small form of *phanias*, has the apex of the forewing somewhat more pointed and the distal margin straighter. On the under surface there are two darker transverse stripes in the cell of the forewing. On the hindwing a dark median band runs from the middle of the costal to the middle of the inner margin, and is strongly excurved in the middle of the wing. From Bolivia (Illimani, Yungas, de la Paz), Peru (Limbani), Ecuador (Huamboya).
- panyasi*. **P. panyasi** Hew. (54 a). Above red-brown. Forewing with some white dots at the costal margin before the apex, which is almost rectangular. Fringes chequered with brown and white. Beneath the forewing is likewise red-brown, at the costal margin and before the apex marbled with dark brown and grey. The hindwing is light and dark marbled throughout, with two dark dentate transverse bands particularly prominent,

one before, the other behind the middle. At the distal side of each of these bands is placed a row of quadrate whitish yellow spots, the first of which are close to the costal margin. From Merida (Venezuela) and Bogotá (Colombia). — *mara* Thieme is a form of *panyasis* in which the underside of the forewing lacks the wood-yellow line beyond the middle, which is replaced by bronze-yellow dots placed parallel with the distal margin. The hindwing is in parts somewhat copper-red. From Bolivia (Yungas de la Paz).

P. drymaea Hew. (= *Daedalma* d., *angularis* Btlr.) (54 a). The upper surface is dark brown, in the distal third of the wing changing gradually into light brown. The fringes brown, chequered with light brown. On the under surface the apex of the forewing is strongly dotted with white, before it a yellowish line similarly as in *panyasis*. The marbling of the hindwing is much darker than in *panyasis* and is condensed into dark transverse bands. Between these is placed at the costa a whitish spot, which is continued as a straight, light brown stripe to the middle of the wing and is here lost in the marbling. By this stripe the species is easy to recognize. The ♀ is like the ♂. HEWITSON gives Colombia as locality, where FASSL has also recently found both sexes at the Cipaque and at the Quindiu Pass at altitudes of 3000 m. This is interesting inasmuch as THIEME questioned its occurrence in "New Granada", i. e. Colombia. The species occurs also in Bolivia (Yungas de la Paz) and Peru (Aqualani). — *rahab* Thieme, the Peruvian form of *drymaea*, is somewhat larger than the latter, with the wings less dentate and the distal margin of the forewing less produced. The upper surface is unicolorous bronze-brown, not lighter distally. Beneath the wings are lighter brown with rust-red apex and grey atoms at the costal margin. The scheme of markings on the hindwing is as in *drymaea*, but darkened with rust-brown. A small spot on the costa and a larger one at the apex are distinctly lighter. Peru (Chaliabamba, 3300 m.).

P. tomentosa spec. nov. (54 b). Size of *drymaea*, the apex of the forewing somewhat more produced, distal margin of the hindwing undulate. Above black-brown, the fringes lighter brown between the veins. Beneath olive-brown, the costal margin of the forewing with several small, white-powdered spots before the apex. Hindwing finely striated with dark brown all over, with 2 indistinct brown dentate lines before and beyond the middle. The inner and distal margins are sprinkled near the apex with fine whitish grey powdering, suggesting the appearance of mildew. In cellule 2 and in cellule 3 a white dot. From Bogotá. 2800 m. Discovered by FASSL.

P. muscosa Thieme (54 b). Above brown with large, darker scale-spot on the forewing and a whitish spot on the costa of the hindwing. Beneath the forewing is olive-brown with a yellow-brown submarginal band, which is anteriorly bent basewards. Before the apex a white-dusted triangle and 3 white dots. Hindwing similar to *panyasis*, marbled with light and dark brown, in the anterior part strongly dotted with white, so as to form in the basal area 2 lighter bands and before the apex a lighter half-band. Bolivia (Yungas de la Paz, Corvico, San Antonio), Colombia (Alto de las Anees, 2200 m., FASSL).

P. jephtha Thieme (54 b) resembles *muscosa* in the scheme of markings, but the forewing is not rounded, but forming an acute angle at the apex, its distal margin not produced, but nearly straight; at the same time distinctly and sharply dentate. Above unicolorous brown. On the under surface of the forewing the apex is not spotted with pure white but powdered with grey and a row of grey spots is placed along the anterior part of the costal margin. Hindwing dark marbled and crossed by 2 distinct white oblique bands, with dentate margins, one from the middle of the inner margin straight to the middle of the costa, the other as a half-band from the inner angle to the 3rd median vein. From the Cordilleras on the coast of Colombia (province of Antioquia).

P. niveonota Btlr. Above pitch-black. Forewing beneath ferruginous with brown costa and a quadrate brown spot at the end of the cell, behind it a conical yellow spot; a grey submarginal band with 3 white dots; distal margin broadly brown. Hindwing beneath olive-brown, sprinkled with black and silver-grey dots, across the middle a silver-grey band which becomes white at the inner margin, a silver-grey spot at the apex, several small spots of the same colour before the distal margin and between them a row of silvery dots. From Huasampilla in Peru (3000 m.) (WHITELY). Only in the British Museum.

Pammenes Group.

P. pammenes Hew. (54 b) may be recognized by the reddish cinnamon colouring in the distal half of both wings above. The distal margin in the forewing is rounded, the fringes chequered with brown and white. The under surface is similar to the upper, but lighter. On the costa of the forewing behind the middle a light brown spot and before the apex 3 white dots. Hindwing red-brown with a broad, light red-brown submarginal band, dentate at the edges and striated with dark brown, in which is placed a row of white dots in black rings. In the middle of the costa a narrow whitish spot. Bolivia (Rio Chaco, Rio Tanampaya, San Antonio). — *garleppi* Thieme is the mountain form of *pammenes*, in which the submarginal band on the under surface is indistinct and the eye-spots placed in it are indistinct or entirely absent. From Cillutincara (3000 m.) and other high mountain localities in Yungas de la Paz (Bolivia).

- antulla*. **P. antulla** *Thieme* has the extreme apex of the forewing not rounded, but somewhat produced. The upper surface is unicolorous dark brown, the scale-spot does not extend into the cell. Beneath: forewing dark grey-brown, only in the anterior distal half somewhat lighter with 3 white dots before the apex. Hindwing dark red-brown, the posterior half of the inner and distal margins chestnut-red. Beyond the middle a distinct lighter discal line, at the apex a silver-white hook and a silvery dot below it, and in the middle of the costa a 2nd silvery dot. The ♀ has the markings paler. Limbani, Upper Peru.
- daulis*. **P. daulis** *Thieme* (54 b). Forewing with rather sharp apex, above unicolorous brown, the scale-spot small and triangular. Beneath lighter brown; the dark basal half of the forewing is separated from the distal part by a light line, which does not quite reach the inner margin. Below the apex 4 white dots. On the hindwing the discal line is somewhat undulate and extends from the costal to the inner margin. A row of white dots before the distal margin, the first widened into a spot. A further white dot beyond the middle of the costa. From Callanga in the province of Cuzco in Peru.
- patizathes*. **P. patizathes** *Hew.* (= *palizethes Kirby*) (54 c). Above unicolorous brown. Beneath marbled with somewhat lighter brown, with a reddish brown submarginal band on the forewing. The hindwing with a white costal spot, joined to the costal margin by a fine point. From Ecuador (BUCKLEY), Quindiu Pass in Colombia, 2800 m. (FASSL).
- paeonides*. **P. paeonides** *Hew.* (= *Pron. porcia Hew.* on HEWITSON's plate) is near the preceding species, but the forewing is not truncate. The upper surface is reddish brown, darkest in the middle of the forewing. The under surface is reddish brown, the hindwing dark sprinkled. The forewing as well as the hindwing has a costal spot, but both are very small and dull white. A small, narrow dirty white stripe runs from the 3rd median vein to the inner margin near the anal angle, by which the species may be known. From Ecuador. — **P. costipunctata** *form. nov.* (54 c). I regard as the Colombian form of *paeonides*. It is deep black-brown above, only at the distal margin of the forewing somewhat lighter for a breadth of about 3 mm. The small costal spots on the under surface consist on both wings of only a few white scales, and the fine white transverse line in the posterior part of the hindwing is also composed of single, widely-separated scales. Fringes dark brown. Distinguished from *simmias*, to which it has also some resemblance, by the entire absence of the rust-red colour. From Monte del Eden, Ibague, Colombia, 2700 m., December (FASSL).
- pallantias*. **P. pallantias** *Hew.* is reddish brown above, darkest in the middle of the forewing. Beneath reddish brown, striated with dark brown. Costal spots large, that of the forewing 4 mm. in length, triangular, that of the hindwing 10 mm., in the middle angularly bent, reddish yellow. From Ecuador.
- uniformis*. **P. uniformis** *spec. nov.* (54 c). Forewing with the apex rectangular. Above dark reddish brown, fringes in the anterior half of the forewing between the veins with whitish tips, otherwise brown. Under surface of the same colour, with only a trace of a small, somewhat lighter brown costal spot at $\frac{2}{3}$ of the costal margin visible on both wings. In addition a brownish white dot in cellule 2 of the hindwing. The white tips of the fringes on the forewing as above. From Bolivia.

Phanoclea Group.

- phanoclea*. **P. phanoclea** *Hew.* The species of this group are distinguished by the elongate hindwing. *phanoclea* is brown above, towards the anal angle of the hindwing red-brown. Beneath the forewing is brown with a short white band at the costa, the hindwing yellow-brown, striated with dark brown, traversed by a straight wood-yellow median band and with a row of 4 black dots with white centres. Ecuador.
- porcia*. **P. porcia** *Hew.* (= *Pron. paeonides* on HEWITSON's plate) 54 c). Recognizable by the light yellow half-band at the apex of the hindwing beneath. The upper surface is unicolorous brown. Ecuador (BUCKLEY), Colombia (Monte Socorro and Quindiu Pass, 3500 m., FASSL). — **P. albutia** *Thieme* is a somewhat larger form with the light half-band on the underside of the hindwing twice as broad and not light yellow but pure white. The costal spot on the underside of the forewing is also pure white. From Peru.
- phthiotis*. **P. phthiotis** *Hew.* may be recognized by the tripartite white costal spot on the hindwing beneath. The forewing has a small costal spot, which is indicated on the upper surface also. Otherwise the colouring is brown. Ecuador.
- simmias*. **P. simmias** *Thieme* (54 c). Above unicolorous brown. Beneath little lighter, towards the apex of the forewing and at the anal angle of the hindwing mostly ferruginous. Forewing with indistinct costal spot. The transverse band beyond the middle of the hindwing is likewise sometimes very indistinct, as also the light dots in the disc. From Bolivia (Yungas de la Paz).

Piletha Group.

- piletha*. **P. piletha** *Hew.* (= *pedacia Stgr.*) (54 c, d). May be known by the white half-band, anteriorly running

out into a point on the underside of the hindwing. The upper surface is unicolorous reddish brown. In the ♀ the posterior half of the distal margin of the hindwing has sharper and more pointed teeth. Venezuela, Colombia, Paraguay. — **pedacia** Hew. is a form of *piletha* in which the white half-band on the underside of the hindwing is somewhat broader at the inner margin and connected with the costal spot by a sinuous row of small white spots. Ecuador.

P. prytanis Hew. has the hindwing very dark, with the half-band reduced to an oblique, quadrate white spot at the inner angle. The costal spots are very indistinct. The upper surface is dark brown, only spotted with white in the incisions of the strongly dentate margin of the forewing. Venezuela, Colombia. — **phoenissa** Hew. (54 d) is perhaps a form of the preceding. It only differs in having the distal margin of the forewing not dentate, but merely weakly undulate. Colombia.

P. phazania Sm. (54 d) may be known by the straight course of the white half-band of the hindwing from the inner margin to between the radials, while it gradually decreases in breadth and terminates in a fine point. Ecuador. — **cestia** Thieme is probably only a form of *phazania*. The half-band of the hindwing is almost the same shape, but is sulphur-yellow, not white. Colombia.

Tena Group.

P. tena Hew. (54 d). The species of this group have the wings more elongated. *tena* may be recognized by the row of 4, in the ♀ 5, white spots on the upperside of the forewing, which are larger in the ♀, smaller in the ♂. In the ♀ there are in addition to this row one or two white dots before the apex of the forewing, and a row of 4 white dots on both surfaces of the hindwing. The latter are sometimes present also in the ♂ on the upper surface. On the underside of the forewing some of the white spots are sometimes absent. — THIEME regards the following large-spotted species *pasicles* as the ♂ of *tena*. Thus he has overlooked that HEWITSON himself says in the 5th volume of his "Exot. Butt." that ♂♂ of *tena* have smaller white spots than the ♀, which he figured. I have seen 10 examples of *tena* collected by STÜBEL, including 9 ♂♂ which all had smaller spots than HEWITSON's figure. One of them is figured on our plate. I am therefore compelled to regard *pasicles* as a separate species. *tena* flies in the high mountains of Ecuador at the snow-line (Páramo de Cuvilche, 3800 m., Antisuna, 4300 m.).

P. pasicles Hew. Above brown, the distal margin somewhat more rounded than in *tena*. Forewing with 3 light yellow spots beyond the middle, the first large, 6 mm. in length, divided by a vein into 2 parts, the other two small, especially the last. On the under surface the 2 small spots are absent and there is a black submarginal line. Ecuador (Alatillo).

P. reissi Weym. (54 d). On the upper surface an indistinct row of dots beyond the costal spot, which stands out more distinctly beneath. Hindwing lighter brown, finely marbled with dark brown. The ♀ was discovered by FASSL on Monte Tolima and only differs from the ♂ in having the dark brown marbling on the underside of the hindwing more prominent on account of the lighter ground-colour and in the presence of a brownish grey submarginal band, strongly dentate distally, before the distal margin. The costal spot of the hindwing is dusted with brownish beneath. On the Páramos of Tolima, of Moras and of Huila, 3600—4200 m. (STÜBEL, FASSL).

P. albonotata Godm. (54 d). The white spot wanting on the under surface. The hindwing beneath has 2 dentate whitish transverse stripes, which are strongly speckled with brown. In the distal area a row of white sagittate marks, the anterior 2 larger and more distinct. Venezuela (Merida).

P. albopunctata Weym. (54 e). Under surface like the upper, which is here figured. The number of dots varies on the hindwing from 1 to 4. In the ♀ the underside of the hindwing has a broad yellowish brown submarginal band, in which are placed the white dots in dark rings. Peru (Cruz de Celendín, Páramo, between Marañon and Utcubamba, 3000—3600 m.); Bolivia (Quimtachata, Tiahuanaco, 4200 m.). — **flavopunctata** Stgr. is a form of *albopunctata* with straw-yellow instead of white dots. From Bolivia.

P. perita Hew. Size of the preceding. Above unicolorous brown, only the fringes of the forewing spotted with white. Forewing beneath with the margins marbled with grey and with a row of 4 white dots. Hindwing beneath with broad grey-yellow submarginal band, on which are placed 5 white dots in black rings. Ecuador.

P. nebris Thieme (54 e) may be easily known by the short, straight honey-yellow band beyond the middle on the upperside of the hindwing. Beneath this band is whitish yellow and between it and the distal margin are placed 4 white dots in black rings. Sometimes there is also on the underside of the forewing a transverse row of 4 small reddish yellow spots and beyond them a row of white dots. The former are sometimes present on the upperside also. The ♀ does not differ from the ♂ in markings. — According to FASSL the egg is spherical, bone-yellow, glossy and entirely covered with fine pitting. He found the butterfly in various localities in the Colombian East Cordilleras, rarely below 3300 m., and suspects that the types described by THIEME from the STAUDINGER collection were also taken there.

empetrus. **P. empetrus** *Thieme* (54 e). Above yellow-brown with a submarginal row of white dots, larger on the forewing, smaller on the hindwing. Fringes chequered dark brown and white. The butterfly seems to be rare in collections. Venezuela (Merida).

Polusca Group.

paneis. **P. paneis** *Hew.* (54 e). Above unicolorous brown. The rust-red band of the under surface rises from the inner angle of the hindwing and runs $\frac{2}{3}$ across the wing, gradually tapering to a point. Beyond this
tyro. a row of white dots. Peru, Bolivia, Colombia. — In the form **tyro** *Thieme* (= *paneis* *Hew. pt.*) (54 f) the rust-red band on the under surface is much shorter, occupying barely $\frac{1}{3}$ of the breadth of the wing. Only one white dot, placed at the anal angle. The apex of the forewing is truncate, forming a right angle.
pheres. Peru. — **pheres** *Thieme* (54 f) is a further form, in which the apex of the forewing is not truncate, but the distal margin is straight throughout, and the white dot at the anal angle is wanting. The rust-red band has about the same extent as in *tyro*. Peru, Bolivia.

philonis. **P. philonis** *Hew.* (54 e) is a similar species to *paneis* with the apex of the forewing truncate. The red-yellow band on the underside of the hindwing is as long as in *paneis*, beyond it is placed a light brown submarginal band, strongly dentate distally, which bears a row of 5 black eye-spots with thick white pupils. Ecuador, Peru.

pheretias. **P. pheretias** *Hew.* (54 f) may be known by the elongate white costal spot on the underside of the hindwing. The red-yellow anal spot is rather small. The upper surface is unicolorous black-brown. The ♀ was found by FASSL at the Quindiu Pass, Colombia, in 2 different forms. One is similar to the ♂, only differing in the presence on the underside of both wings of a broad grey-brown submarginal band, on the hindwing reaching the white costal spot and the rust-red inner-marginal spot and marbled with dark brown.
griseola. The other female form (pl. 54 f), for which I propose the name **griseola** *form. nov.*, only differs in having the ground-colour of the entire underside of the hindwing yellowish grey-brown, finely striated all over with dark brown, so that the costal and anal spots have almost disappeared. From the Quindiu Pass (FASSL).

ferratilis. **P. ferratilis** *Btlr.* (= *morenoi* *Dogn.*) (54 f). Above dark brown, beneath lighter brown marbled with dark brown, the hindwing with broad ferruginous inner margin, from which arises a quadrate, light rust-red
uncus. anal spot. Peru, Ecuador, Bolivia, Colombia. — **uncus** *Thieme* is a form of *ferratilis* in which the rust-red colour on the underside of the hindwing is confined to a narrow distal border, and which bears 4 white dots on the underside of the forewing. From Tucuman in North Argentina.

zoippus. **P. zoippus** *Druce*. A small species of 46 mm. expanse, above brown with the inner margin and anal angle of the hindwing red-brown. Under surface the same, the hindwing with some indistinct white spots before the distal margin and a dark brown submarginal line. Peru.

polusca. **P. polusca** *Hew.* (54 f). Above dark brown with narrow red-brown border at the inner angle. On the under surface distinguished by the 2 subanal white dots beyond the red-brown submarginal band of the hindwing, which is more or less extended. The larger, typical *polusca* occurs both in Colombia
polla. (where FASSL took it on Mont Socorro at altitudes of 3500 m.) and in Peru and Bolivia. — **polla** *Thieme* (= *polusca* *Hew. pt.*) is a smaller form, in which the rust-red band on the underside of the hindwing runs up to beyond the cell. The inner angle is much lighter yellowish rust-red. The ♀ does not differ from the ♂.
syleus. From Colombia (Quindiu Pass, 3800 m., FASSL). — **syleus** *Thieme*, a further form of *polusca*, in which the rust-red colour on the underside is confined to the transverse band of the hindwing only, there being no rust-red colour present at the anal angle and in the rest of the distal part of both wings. From Limbani, Peru.

asconia. **P. asconia** *Thieme* is a species similar to *polusca*. The transverse band beyond the middle of the hindwing on the under surface consists only of a quadrate orange-yellow spot at the inner margin and 3 small honey-yellow spots beyond the middle of the wing. A white dot between median veins 1 and 2. The ♀ is pale brown above, bordered with rust-red at the anal angle. The under surface of the forewing shows a pale costal spot. From Baños in Ecuador (HAENSCH).

pausia. **P. pausia** *Hew.* (= *loca* *Stgr.*, *lora* *Sm.* & *Kirby*). Above dark brown, distally reddish brown. Beneath the same, forewing with 2 or 3 very small white dots before the apex, hindwing with a narrow, light rust-red
lucipara. half-band, which crosses a row of 4 white dots. Bolivia (Yungas de la Paz). — **lucipara** *form. nov.* (55 a) is a form of *pausia* in which the upper surface is not reddish distally, but only lighter brown. On the under surface the white dots of the forewing are absent and the hindwing shows only 2. From the Quindiu Pass,
baccara. 2500 m., Colombia (FASSL). — **baccara** *Thieme* is a form which has on the forewing beneath a broad light brown submarginal band, finely bordered with white distally. The transverse band of the hindwing is twice as broad as in *pausia* and only in its posterior part rust-red. From the Colombian province of Antioquia (KALBREYER).

P. coca *Stgr.* (55 a) is allied to *pausia*, but the row of dots consists of 6 and they are differently placed. From Cocapata in Bolivia (GARLEPP).

P. entella *Thieme.* The distal margin of the forewing is emarginate below the apex. Above unicolorous dark brown with grey fringes. Beneath: forewing light brown with rust-brown apex; hindwing dark red-brown, with light ferruginous marbling, a ferruginous band arising from the inner margin and spots of the same colour beyond it between the median veins; a row of small black, white-pupilled dots in the same position as in *coca*. Baños in Ecuador (HAENSCH).

P. proculeja *Thieme* has the distal margin of the forewing below the apex emarginate as in *entella*. Above unicolorous brown. Beneath lighter. Forewing with whitish costal spot and rust-brown apex. Hindwing brown with light rust-brown spots, yellowish towards the base, and an elongate-triangular, obscure, light yellow half-band between the inner margin and the middle of the wing. A row of blackish dots with white centres before the distal margin. From Urcos in Peru (GARLEPP). Tring Museum.

P. tucca *Thieme* (55 a). Above unicolorous dark brown with broad scale-spot. On the underside of both wings some confluent spots forming more or less distinctly a chestnut-red submarginal band; beside this band a row of white dots. The figure has been prepared from an example in coll. THIEME. From the neighbourhood of the Illimani in Bolivia. — **luperca** *Thieme* is a form of *tucca* in which the scale-spot on the upper surface is half as broad. The ground-colour of the underside of the forewing is not light brown but dark brown and the chestnut-red band is absent. Santa Inez in Ecuador.

Pactyes Group.

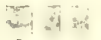
P. cledoina *Thieme* (55 b). Above glossy brown; the rust-red transverse band on the underside of the hindwing is anteriorly dusted with yellow and broken up into spots. A white dot is placed in cellule 2. From Yungas de la Paz and Cillatincara (Bolivia).

P. antonia *Stgr.* (55 a). The broad band on the upperside of the hindwing has a projecting branch and is present in the same shape on the under surface, but here light ochre-yellow. San Antonio and Cillatincara (Bolivia), Chiri-Mayo (South-East Peru). — **anina** *Stgr.* is a form of *antonia* in which the band of the hindwing is only represented on the upper surface by a short light grey spot at the costa and on the under surface the lateral branch of this band is much shorter. Loco Valley in Bolivia. — **quincedis** *Thieme* (55 b), the more copiously ornamented Peruvian form of *antonia*, differs from the latter in the large quadrate white spot on the forewing above and beneath. The band of the hindwing is bright sulphur-yellow above, with silky golden gloss, beneath as in *antonia*. Callanga in Peru. — **exsanguis** *Thieme* is a further form belonging here, and differs from *quincedis* in having the whole of the markings snow-white. Callanga, Peru.

P. pactyes *Hew.* Above brown. Forewing with the fringes chequered with brown and white, hindwing with an indistinct reddish wood-yellow median band which shows through here from the underside. Beneath it is orange and somewhat angled. A white dot in cellule 2. Bolivia. — **auristriga** *Thieme* is a form in which the upper surface is unicolorous dark brown and the underside of the forewing bears a distinct costal patch. The band of the hindwing is narrow and light saffron-yellow. Huancabamba in North Peru. **serra** *Thieme*, in which the yellow band forms a short point distad on vein 2, and **stilla** *Thieme*, in which this band is broken up into separate spots, are forms of *auristriga* from the same locality. — **spina** *form. nov.* (55 b) is a further form belonging here, unicolorous black-brown above and showing on the underside of the forewing a distinct whitish costal spot which is continued as a reddish brown band to the inner margin. Across the middle of the hindwing runs an anteriorly white, posteriorly ochre-yellow band, which in cellule 6 forms a sharp angle proximad, in cellule 4 an angle distad. In addition, opposite to the latter angle a white streak or tooth runs along the median as far as the cell. In the somewhat lighter distal area a row of 5 white, black-edged dots, in the (55 b) there is also a row of similar dots on the forewing. Found at the Quindiu Pass in Colombia (3800 m.) in September by FASSL.

P. chrysotaenia *Hpffr.* (55 b), a species similar to *pactyes*, may be recognized by the brown irroration on the under surface of the hindwing, across which runs a golden yellow band from the anal angle round the cell to the costa, broad posteriorly, but in the anterior half only quite narrow and forming several angles. From Peru (Chanchamayo and Huancabamba). — **fassli** *form. nov.* (55 b), a similar form to the preceding, has the distal margin of the forewing less undulate, and the ground-colour of the under surface is not marbled, but dark brown. The hindwing has a white, bipartite costal spot and a half-band running up from the inner angle, anteriorly narrowed and distally curved, also a few whitish dots between the end of this band and the costal spot. From Monte Socorro, 3400 m., Colombia, July (FASSL). Named in honour of the discoverer.

Peucestas Group.

- peucestas*. **P. peucestas** Hew. (55 c). Above dark brown; forewing with the same white band as beneath. The ♀ is quite like the ♂ except that the broad submarginal band on the underside of the hindwing is much lighter whitish grey. Colombia (Quindiu Pass, Salto de Tequentama), Peru, Ecuador (Baños), locally common.
- porina*. **P. porina** Hew. (= *Tisiphone lyssa* Burm.) (55 c). Differs from the preceding species in the shorter white band above and beneath and also in the absence of the white spots on the underside of the hindwing.
- palaeopolis*. Ecuador (Baños, Huamboya), Bolivia (Rio Pongo, Yungas de la Paz), North Argentina (Tucuman). — **palaeopolis** Hew. is a form of *porina* which on the underside of the forewing bears a small blackish, white-pupilled
- corderoi*. eye-spot at each side of the white band. From Bolivia and Limbani in Peru. — **corderoi** Dogn. (55 c) is a further form in which the light brownish grey submarginal band on the underside of the hindwing is broader and is also visible on the upper surface as a washed-out yellowish brown band. From Loja and Macas in Ecuador.
- porima*. **P. porima** Sm. (= *porrima* Stgr.) (55 c). The white band on the forewing extends into cellule 2, which is not the case in the 3 preceding forms. Further recognizable by the 3 to 5 whitish yellow dots on the underside of the hindwing, of which the middle one is somewhat larger. Bolivia.
- pallantis*. **P. pallantis** Hew. (55 c). The white band takes in the anterior part of the cell and extends nearly to the inner margin. The distal margin of the hindwing is obtusely angled. The ♀ is somewhat larger and has the forewing concave below the apex. Colombia (Monte Socorro, 3500 m.), North Peru (Huancabamba).
- pylas*.  **P. pylas** Hew. (= *pilas* Hew. in tabula) (55 c). The 2 white spots of the forewing are present also on the upper surface. The hindwing on the contrary is unicolorous dark brown above. Colombia (Bogotá). — In the form **uniplaga** Thieme the small white spot at the costal margin of the forewing is absent. Colombia. —
- uniplaga*. **parma** Thieme is a very similar form, in which the small spot is likewise absent, but the large spot is somewhat further removed from the distal and inner margins and placed nearer to the costa. On the under surface this spot is somewhat larger and takes in a part of the cell. From the coast Cordilleras in Colombia (KALBREYER).
- phaedra*. **P. phaedra** Hew. Above brown with a bright primrose-yellow band across the forewing and a large spot of the same colour in the middle of the hindwing. On the under surface the yellow band of the forewing is broader than above and the spot on the hindwing is prolonged anteriorly and posteriorly into a complete
- melaleuca*. band. **melaleuca** Weym. (= *Pronoph. palades* Hew.) (55 d) is a form of *phaedra* in which all the yellow markings are milk-white. Transitions occur between the two forms. The name *Pron. palades* Hew. cannot be retained for this form, as HEWITSON himself had previously described another species under the name *Pronophila palades* (the present *Lasiophila palades*).
- niphoessa*. **niphoessa** Thieme (55 d) is another form of *phaedra*, with the band of the forewing chalk-white and somewhat broader, occupying the distal part of the cell. The white spot on the underside of the hindwing is in both forms prolonged to the inner margin. From the Quindiu Pass in Colombia, 3500 m. (THIEME and FASSL).

Plotina Group.

- plotina*. **P. plotina** Hew. (55 d). May be known by the large red-yellow spot before the anal angle of the hindwing above. Beneath this spot is ochre-yellow, marbled with brown, and from it a straight ochre-yellow
- rapha*. stripe runs up to radial 2, where it is followed distally by a white dot. Venezuela. — **rapha** Btlr. (= *plotinella* Sm.) (55 d) is a form of *plotina* in which the red-yellow spot on the upperside of the hindwing is smaller and shorter. On the under surface of the hindwing the ochre-yellow stripe is broken up into crescent-shaped spots and from the end of the stripe a row of white dots runs to the costal margin. Venezuela. — In the
- pharnaspes*. form **pharnaspes** Hew. (55 d) the separate spots of the yellow band on the hindwing are not crescent-shaped, but elongate-quadrate, of the row of dots only one is present and before the distal margin on the underside of the forewing there is a broad, light reddish brown band. Venezuela, Ubalá (Colombia, East Cordilleras). FASSL.
- cocytia*. **P. cocytia** Fldr. (= *phaesana* Hew. [in tabula]) (55 d). Above unicolorous dark brown. On the underside of the hindwing is placed between the narrow, straight ochre-yellow band and the distal margin a curved row of grey-brown spots. The yellow band is often broken up into small, more or less widely separated spots. In a ♀ captured by FASSL (55 d) the separate spots are proximally pointed. The figure of the ♂ has been prepared from FELDER's type in the Tring Museum. — The egg is spherical, milk-white, somewhat transparent. The surface is smooth and glossy. From the plateau of Bogotá, 2600—3200 m.
- hopfferi*. **P. hopfferi** Stgr. (55 e). The broad red-yellow band of the hindwing is strongly sprinkled with dark
- tyrrheus*. brown on the under surface and extends to the apex. From Cuzco and Huancabamba in Peru. — **tyrrheus** Godm. & Salv. is probably only a form of *hopfferi* Stgr. The red-yellow submarginal band of the hindwing is shorter, only extending from the inner margin to one-half the wing. On the under surface it is ochre-yellow, somewhat longer than above and anteriorly pointed. Sierra Nevada of Santa Marta (Colombia). SIMONS.

Parepa Group.

P. parepa Hew. (55 e). Recognizable by the narrow red-yellow macular band on the upper surface *parepa*. of both wings. Beneath the forewing is exactly as above except that the apex is marbled with grey. The distal half of the hindwing is similarly marbled. The dark brown basal area forms a right angle in the middle. From Ecuador (Huigera, Guishapa, Loja). — **milvia** Thieme is probably the Peruvian form of *parepa*. The *milvia*. red-yellow band is confined to the anterior part of the forewing and is entirely absent on the hindwing. Distal half of the hindwing grey-brown beneath, with 2 black ocelli standing out distinctly. From Chosico in Peru (850 m.). There is only one female example, in the Tring Museum.

P. phaea Hew. Both wings traversed beyond the middle by a brownish red-yellow band, which on the *phaea*. forewing is divided into oval spots. In the ♀ the bands are broader and not divided on the forewing. The under surface is similar to that of the figured *ochrotaenia*, but the bands are narrower. Ocanna in Colombia. — **ochrotaenia** Fldr. (55 e) is a form of *phaea* in which the band on the upper surface is not divided; in the ♀ *ochrotaenia*. it is broader (6 mm.) and more ochre-yellow. From Bogotá (Colombia). — **fuscata** Fldr. (55 e), a further form *fuscata*. belonging here, has the broad band on the upper surface strongly suffused with smoke-brown, obliterating its edges. On the under surface, on the other hand, the band is not ochre-yellow but more red-yellow. From Bogotá (Muzo), Páramo de Guasco. — In **amafania** Thieme, another *phaea* form, the red-yellow band is placed *amafania*. nearer to the margin and runs parallel with it throughout. Its margins are smooth, nowhere interrupted and not angled, merely somewhat ventricose in the middle of the hindwing. Beneath the band is light ochre-yellow and there is a white spot at the costa of the hindwing and another at the anal angle. From Callanga (province of Cuzco) in Peru. Coll. STAUDINGER in the Berlin Museum.

P. alusana Hew. The red-yellow band is placed somewhat beyond the middle. It is broadest in the *alusana*. middle of the forewing, narrowest at the inner margin of this wing; at radial 1 on the hindwing it is interrupted on the upperside and forms a right angle on the underside. There are also here in the distal area of the hindwing some ochre-yellow spots and a row of white dots. From Alusana in Ecuador (Coll. HEWITSON, Brit. Mus.).

P. praxia Hew. Above brown with a red-brown band beyond the middle of the forewing, running parallel *praxia*. with the distal margin, and a red-brown costal spot on the hindwing. On the under surface of the forewing this band is much broader posteriorly and is white at its origin, on the costal margin. A red-brown spot is placed in the cell. From Jima in Ecuador.

P. thiemei Stgr. (55 f). The dark red-yellow band, which runs from the costal margin of the forewing *thiemei*. to the inner margin of the hindwing, is somewhat lighter on the underside of the forewing, but on the hindwing ochre-yellow, covered with brown speckling. In the ♀ the band is about a third broader beneath than in the ♂. From the Quindiu Pass in Colombia (3800 m.). THIEME, FASSL.

P. peruda Hew. Above brown with a broad, straight red-yellow band beyond the middle, which is *peruda*. pointed at the costal margin of the forewing and the inner margin of the hindwing. Beneath the band is even broader than above, on the forewing red-yellow, on the hindwing nearly white, somewhat marbled with brownish. The distal margin of both wings is dusted with grey. Amazon. Coll. Brit. Mus.

P. symmachus Godm. & Salv. Above dark brown with a dark red-yellow band 3 mm. in breadth *symmachus*. running across both wings near to and parallel with the distal margin. On the underside of the forewing the band is broader and lighter red-yellow. On the hindwing beneath 2 ochre-yellow stripes occupy the place of the band. Sierra Nevada of Santa Maria in Colombia.

P. ornata Sm. (= *phaeaca* Stgr.) (55 f). The red-yellow band of the forewing is as strongly curved *ornata*. proximally on the underside as on the upper. The hindwing beneath has an ochre-yellow transverse band, which forms a right angle on the lower radial. Beyond it is placed a row of white dots in brown rings. Merida (Venezuela).

P. phaeina Stgr. (= *Pronoph. phaea* var. Hew.) (51 b). On the forewing the band is only very weakly *phaeina*. indicated, but on the hindwing it is bright red-yellow and occupies almost half the breadth of the wing. On the under surface this band is light ochre-yellow on the hindwing, proximally straight-edged and distally dentate; finely sprinkled with brown, with a row of white, brown-bordered dots. Pacho (3000 m.) in the Colomb. East Cordilleras (FASSL); Central Cordilleras of Colombia (THIEME).

P. pelinna Hew. (55 e). May be known by the obliquely placed yet straight band of the forewing. The *pelinna*. band of the hindwing is anteriorly constricted, and forms in the middle 2 distally directed teeth. The colour of the bands is bright ochre-yellow. Beneath the bands are the same, only much lighter. Ecuador (Rosario, Villagomes, Macas).

P. parrhoebia Hew. Recognizable by the rose-red colour of the band, which forms two angles on the *parrhoebia*. forewing and one on the hindwing, and has its proximal edge quite irregularly dentate. On the under surface the forewing is as above, on the hindwing the band is broken up into several light brown spots. From Galgalan in Ecuador.

- phintia*. **P. phintia** Hew. The upperside is similar to that of the preceding species, as is also the underside of the forewing, except that it bears a small light brown spot in the cell and the apex is broadly light brown, marbled with black. The hindwing beneath has a straight white band before and a light brown band beyond the middle, proximally margined with white. A black spot with white centre is placed anteriorly in this band and 2 similar ones before the distal margin. From Jima in Ecuador.
- philotera*. **P. philotera** Hew. (55 e). The dark red-yellow band forms an acute angle on the hindwing. On the under surface the hindwing is brown, crossed by 2 ochre-yellow parallel stripes which arise from a costal margin of the same colour and divide off a dark pointed triangle proximally and a long quadrate patch in the middle of the wing. Colombia (Páramo de Guasco, 3000 m. [STÜBEL], Quindiu Pass, 3500 m. [FASSL]).
- phoenicusa*. **P. phoenicusa** Hew. One of the largest species of the genus, with an expanse of 70 mm. The forewing is pointed, the distal margin dentate. Brown. Forewing with a distally curved red-yellow transverse band beyond the middle. Hindwing only with a red-yellow spot at the costal margin. Beneath the forewing is as above, except that it bears in addition a red-yellow spot in the cell and a grey spot at the apex. Hindwing beneath grey, marbled with brown, with a broad, lighter, dentate submarginal band, on which is placed a row of white, black-edged dots. Ecuador. Very rare. Only in coll. HEWITSON (Brit. Mus.).

Physcoa Group.

- physcoa*. **P. physcoa** Hew. Above brown with a large, obliquely placed, oval red-yellow patch at the anal angle of the forewing. Beneath the distal half of both wings is marbled with grey and brown, the red-yellow spot as above. From Bolivia (Yungas de la Paz, Corvico). — **marulla** Thieme (56 a) is a form of *physcoa* in which the red-yellow spot does not rise obliquely but steeply, thus running nearly parallel with the distal margin. From Chanchamayo in Peru.
- ereiba*. **P. ereiba** Fldr. (= Pron. pasicrates Hew.) (55 f). May be known by the broad red-brown submarginal band on both surfaces of the forewing, which is dark brown. Figured from FELDER's type in the Tring Museum. Bogotá (LINDIG), La Vega, Colombian East Cordillera, 2200 m. (FASSL). — **cremera** Godm. & Salv. (erroneously called *cremona* on the plate in the "Biologia Centrali-Americana") is a form of *ereiba* Fldr. in which the band is more red-yellow and is curved basewards at the costal margin. On the under surface this band bears between the first and second median vein a small black, white-pupilled eye-spot. On the hindwing the last 2 eye-shaped dots in the submarginal row before the anal angle are larger and more distinct. From the Volcan Irazu in Costa Rica.
- praxithea*. **P. praxithea** Hew. (56 a). A large and beautiful species. The red-yellow band is present also on the underside of the forewing. The hindwing is brown beneath, striated with dark brown, with a transverse band irrorated with whitish beyond the middle. Bolivia, Ecuador (St. Rosario, Villagomes).
- triaria*. **P. triaria** Godm. & Salv. (56 a) is near to *praxithea* but is smaller and the red-yellow border of the hindwing extends to beyond the middle. Beneath the red-yellow band of the forewing is broader than above, and before the apex of the forewing, as well as before the distal margin of the hindwing, there is a row of white dots. From the Volcan Irazu in Costa Rica.
- phila*. **P. phila** Hew. (55 f). Somewhat smaller even than the preceding, but likewise similar to *praxithea*. The band on the hindwing only reaches median vein 3. The underside of the hindwing is uniformly marbled all over with light and dark brown, only with the apex ochre-yellowish. Bolivia (Yungas de la Paz), Peru (Calanga). — **philaenis** Thieme is a form of *phila* in which the band of the forewing runs straight and reaches the distal margin above the distal angle. Of the red-yellow spots at the apex of the hindwing only an obscure ochre-yellow submarginal line remains. On the under surface there is a white triangle at the apex of the forewing. From Baños in Ecuador.
- pandates*. **P. pandates** Hew. Above brown with a broad ochreous marginal band, which in the anterior half of the forewing is broken up into spots, in the posterior half of this wing and on the hindwing is placed quite near to the distal margin, only leaving a narrow brown border. On the under surface the band has the same position and colour as above, but both wings are densely striated with dark brown. In the ♀ the band is pale yellow and nearly twice as broad as in the ♂. Bolivia (Yungas de la Paz, Corvico, Rio Songo). — **pamphos** Thieme (56 a) should probably be regarded as only a form of *pandates* with the band entirely absent on the upperside of the forewing, but on the under surface scarcely differing appreciably. From Yungas de la Paz in Bolivia.
- napaea*. **P. napaea** Bates resembles on the upper surface the form *pamphos*, but is different beneath. Here both wings are traversed by a sharply defined submarginal band, on the forewing grey, on the hindwing yellowish with a pupilled eye-spot between the first and second median veins. Guatemala.

Juba Group.

- juba*. **P. juba** Stgr. (= *cyrene* Sm. & Kirby) (56 b). Above brown, beyond the middle of both wings with a

row of yellowish brown or dark chestnut-red spots, which stands out but little on the dark ground and on the hindwing is angled and abbreviated. The under surface is irrorated with yellow-brown. The band of the hindwing is here ochre-yellow and reaches the inner margin with a large spot. Ecuador. — **triquetra** *Thieme triquetra*, is a form of *juba* which has on the underside of the hindwing in the anterior part of the disc a dark brown triangle on a light ground. Ecuador.

43. Genus: **Eretris** *Thieme*.

The forewing is broader and shorter than in the genus *Pedaliodes*, its distal margin is more rounded, whilst that of the hindwing is weakly undulate. The principal character of the genus consists in the shape of the inner margin of the hindwing, which shows a distinct excision before the anal angle. Antenna brownish yellow, with the separate joints somewhat thickened at their upper end and hence forming distinct rings. Its shaft is short, the tip obtuse, black. The butterflies are mostly dark brown, below medium size, with eye-spots or leaden-hued lines on the underside of the hindwing. They occur in the mountains of tropical South and Central America.

E. decorata *Fldr.* (= *Pron. catargyrea* *Stgr.*, *phyllalia* *Stgr.*) (56 b). Above unicolorous dark brown, *decorata*, distally somewhat lighter. Beneath easy to recognize by the very complicated pattern, which the figure distinctly reproduces. From Bogotá and Antioquia in Colombia. — **mariona** *Weeks* (= *Pedal. m.*) is a form of *decorata* *mariona*, in which the dark brown submarginal line on the underside of the forewing is proximally finely bordered with brick-red and the markings of the hindwing are more suffused with yellowish. The red-yellow bordering of the eye-spots is only narrow, not broad. Bogotá.

E. porphyria *Fldr.* (56 b). Above unicolorous brown. Beneath the hindwing has a straight red-yellow *porphyria*, median line, proximally bordered with lilac. Beyond the row of small eye-spots 2 lilac undulate stripes at the margin. Figured from *FELDER*'s type in the Tring Museum. Venezuela.

E. ocellifera *Fldr.* (56 c). Above brown, the hindwing with a very small subanal ocellus, the anal *ocellifera*, angle grey, slightly dusted with rust-yellow. On the underside of the hindwing before the eye-spots there is a proximally red-yellow, distally ochre-yellow, anteriorly pointed stripe, running from the inner margin to the middle of the wing. Figured from one of the types in the Tring Museum. Colombia.

E. encycla *Fldr.* (56 c). Above unicolorous brown. Beneath the proximal part of the hindwing is *encycla*, tinged with ochreous fawn-colour, the eye-spots are larger than in *ocellifera*, the space beyond them as far as the submarginal lines is filled up with glossy lead-colour. Figured from *FELDER*'s type in the Tring Museum. Venezuela.

E. calisto *Fldr.* (56 b). Above dark brown, distally somewhat lighter. On the under surface of the hindwing the eye-spots are broadly bordered with glossy lead-colour both basally and distally and midway between the submarginal lines is placed a leaden line. Bogotá and Veja in the Colombian East Cordilleras.

E. oculata *Fldr.* (56 d). Hindwing above with small subanal eye-spot dusted with rust-yellow. Beneath *oculata*, the wings are as in *encycla*, but the marginal area of the hindwing is not glossy leaden but violet-grey; the proximal stripe red-yellow, proximally bordered with black-brown. The eye-spots are surrounded with pale yellow-brown. Figured from the type in the Tring Museum. Bogotá.

E. apuleja *Fldr.* (56 b). Above brown, at the anal angle of the hindwing red-yellow, which colour *apuleja*, occupies the posterior third of the distal and inner margins. On the underside of the hindwing an ochre-yellow band, anteriorly red-yellow, runs to the middle of the wing, becoming narrower anteriorly. The anal angle is red-brown. The eye-spots are very small. Venezuela. — **phyllalia** *Hew.* is a form of *apuleja* with two small, white-*phyllalia*, pupilled black spots in the red-yellow anal patch on the upper surface. Ecuador.

E. hulda *Btlr. & Druce* (56 c). Above brown, at the anal angle somewhat reddish, with dark submarginal *hulda*, line. Forewing beneath with 3 transverse lines between middle and distal margin. The anal third of the hindwing beneath is ferruginous, traversed by an interrupted yellow stripe and with 2 eye-spots before the anal angle. According to the "Biologia Centrali Americana" *BUTLER* described this species from a damaged specimen in coll. *DRUCE*. Hence *GODMAN* and *SALVIN*'s diagnosis and figure in the above work agree but little with the original description. Costa Rica. The species seems, however, to be more widely distributed, for the example from coll. *WEYMER* figured here, which agrees with the figure just mentioned, is from Ecuador.

E. subpunctata *Sm. & Kirby*. Brown. Forewing beneath with 2 dark transverse lines in the middle *subpunctata*, and 2 before the margin. Hindwing at the base dark brown, in the middle somewhat reddish, then a ferruginous dentate stripe, bordered with dark brown at both sides, and a grey-brown band with 6 small, black, white-pupilled eye-spots. At the distal margin 2 ferruginous marginal lines. From Bolivia. — **umbrina** *form. nov.* *umbrina*, (56 c) approaches *subpunctata*, but differs from it in the presence of 2 anal eye-spots on the upperside of the hindwing, one in cellule 1 c near the distal margin, the other in cellule 2 somewhat further from the margin, both black with light brown ring and white pupil. For the rest the upper surface is dark brown, at the margin

somewhat lighter with fine, dentate, darker submarginal line on both wings and 2 marginal lines, which are straight on the forewing, angled on the hindwing. On the under surface a yellowish grey band runs from the inner margin to the middle of the wing, where it is gradually lost in the ground-colour. The ferruginous dentate stripe with black bordering terminates close to the inner angle, whilst in *subpunctata* it runs into the inner margin 3 mm. from the angle. The dark grey band which follows, containing the eye-spots, shades off lighter distally. Of these eye-spots the first 4 are somewhat indistinct. Found by FASSL at Monte Tolima, Colombia, at 3200 m. in January.

subrufescens. **E. subrufescens** Sm. & Kirby (56 c). Above unicolorous brown. Beneath: hindwing in the distal half entirely reddish brown, with dark transverse bands beyond the middle and before the distal margin, and between them a row of small black ocelli with white pupils. Costa Rica. From Monte Socorro, 3600 m., Colombia (FASSL).

rubricaria. **E. rubricaria** Thieme. ♂ small. Above brown. Hindwing with thin honey-yellow marginal line and a small anal eye-spot. The ♀ upperside has on the forewing, in addition to a lighter, distinctly defined submarginal band (which is anteriorly broader, posteriorly narrower), an indistinct pale reddish line, on the hindwing two pale reddish lines, one discal, the other submarginal, and on each wing a honey-yellow marginal line. Beneath both sexes have on the forewing one, on the hindwing two glossy leaden lines before the distal margin and on the hindwing 6 eye-spots. Colombia. Berlin Museum.

ochrea. **E. ochrea** Thieme. Above dark brown with reddish gloss. Forewing beneath lighter with 3 dark transverse lines and a yellow marginal line. Hindwing beneath at the base and the costal margin darker, in the anal part brownish ochre-yellow with 4 red-brown transverse lines, one at the base, the second in the disc before the eye-spots, the third and fourth before the distal margin. The row of eye-spots consists of 5 or 6 small black ocelli with white pupils. A triangular ochre-yellow band runs from the inner margin to the disc, where it is broken up into 3 small spots. Ecuador. Berlin Museum (HAENSCH).

44. Genus: **Lasiophila** Fldr.

Head small, densely haired, with a tuft of hairs projecting forwards, eyes hairy, palpus porrect, three times as long as the head, the first joint short, the second long, the third with obtuse, densely haired tip; antenna short and thin. The costal of the forewing is inflated at the base, the median and submedian only somewhat thickened. Two subcostal veins arise before the end of the cell. The principal distinguishing character of the genus consists in its having the costal margin of the hindwing excised, the excision extending from the base to $\frac{2}{3}$, a character that only recurs in *Daedalma*, which genus, however, differs in other respects. The hindwing is dentate and has 2 small tails, the proximal one shorter than the other. The middle discocellular of both wings forms an angle proximad, from which arises a small recurrent vein. In the markings on the underside of the hindwing the species are all very similar. The area of distribution of the genus embraces the countries between Venezuela and North Argentina, where the butterflies are met with in the high mountains, sometimes gregariously.

cirta. **L. cirta** Fldr. (= *Pronoph. praeneste* Hew. pt.) (56 e). The largest and most beautiful species of the genus, recognizable by the large milk-white spot on the hindwing. The double row of rust-red spots before the distal margin on both wings stands out in many examples more distinctly than in the figure. The under surface is similar to that of the figured *persepolis* (56 c), except that the basal area of the forewing is brown to beyond the middle. From Peru (Rio Sonchi, 2300 m. [STÜBEL], Chanchamayo, Rioja, Huancabamba). — *diducta* Thieme is a form of *cirta* with the rust-red spots on the upperside of the forewing proximally extended to the cell, the last 2 even joined to the rust-reddish basal part. From Huancabamba in North Peru.

piscina. **L. piscina** Thieme (56 d). The under surface of the forewing entirely resembles the figured upper surface except that the red-brown ground-colour is somewhat lighter. The underside of the hindwing is like that of *phalaesia* (56 d), thus the white spot is not present. Cuzco (Peru).

prosymna. **L. prosymna** Hew. The white band of the forewing is present above and beneath and does not quite reach the 2nd median vein. Under surface marbled with grey or brown, and with a dentate row of small yellowish white spots. Colombia, eastern slopes of the Bogotá Cordillera, 2000 to 2500 m., Subida del Tesari, 2300 to 2500 m. (STÜBEL). Quindiu Pass, 2800 m. (FASSL). — *dirempta* Thieme (55 f) is a form which differs so little from *prosymna* as to be scarcely worth naming. The white band is somewhat narrower and is constricted in such a way as to separate off its last spot. Ecuador. — In the form *orbilia* Thieme the chestnut-red markings of the upper surface are replaced by a brown colour, which is somewhat lighter than the rest of the ground-colour. Colombia.

phalaesia. **L. phalaesia** Hew. (56 d) was first described by HEWITSON as the ♂ of *prosymna*, but he afterwards recognized it as a separate species. Above brown with the base broadly reddish brown. Forewing with broad red-yellow submarginal band, posteriorly rust-red, distally smooth-margined, but with its proximal margin somewhat uneven, and continued in 3 smaller spots on the apex of the hindwing. Ecuador. — *regia* Stgr. (56 d) may probably be regarded as a form of *phalaesia*. The submarginal band of the forewing

is on both surfaces distally somewhat dentate, proximally more strongly angled and more chestnut-brown. The spots at the apex of the hindwing are larger and continued to beyond the middle of the distal margin. From Bolivia and Peru. — **confusa** Stgr. (56 d), a further from belonging here, is smaller than the preceding two, *confusa*. The markings of the upper surface are different, especially on the hindwing, and the ground-colour in the basal half lighter brown. From Ecuador.

L. persepolis Hew. (56 e). May be recognized by the strongly dentate dark brown median band on *persepolis*. the upper and under surface, which interrupts the chestnut-red submarginal band on the 2nd median vein of the forewing. The basal part of both wings is chestnut-brown to the inner angle. Ecuador.

L. hewitsonia Btlr. Above chestnut-brown, the distal half of both wings dark brown with 2 rows *hewitsonia*. of chestnut-brown spots, the distal row on the forewing not reaching the apex. The under surface is like that of *phalaesia*. Bolivia. — **neda** Thieme is probably to be regarded as a form of *hewitsonia*, with the two *neda*. rows of spots golden chestnut-red and both reaching the costal margin of the forewing. The separate spots are also narrower and longer and the dark brown ground-colour extends somewhat further basad at the costal margin of the forewing. From Limbani in Peru.

L. circe Fldr. (= Pronoph. praeneste Hew.) (56 e) has the dark brown distal margin narrower than *circe*. in *hewitsonia* and only traversed by one row of chestnut-red spots. The under surface is nearly as in the allied species and has a row of white dots in the disc of the hindwing. The ♀ only differs from the ♂ in the lighter red-brown colouring above and beneath. Colombia (Bogotá and East Cordillera). — **cnephas** Thieme *cnephas*. is a form of *circe* in which the distal part of both wings is entirely darkened, so that all the red-brown spots are scarcely perceptible. From Salento (Colombian Central Cordillera).

L. palades Hew. (57 a) is a species similar to *circe*, which differs in the darker, but at the same time *palades*. brighter brown-red ground-colour and the smaller, lighter golden-brown and differently placed spots in the distal margin. The spot in cellule 2 of the forewing is long, bipartite, the inner part widely removed proximad, also the anterior spot is placed nearer the base. Beneath the forewing is brown-red with a row of red-yellow spots. From Ecuador. Rare.

L. zarathustra Thieme. Wings broad, forewing somewhat truncate at the apex. The outer tail of the *zarathustra*. hindwing broad and spatulate. All the markings very indistinct, the chestnut-red of the base and spots is scarcely distinguishable from the black-brown distal margin. The spots of the forewing are large and broad and proximally extend into the basal part. Somewhat more distinct is a triangular spot below the apex. The spots of the hindwing resemble those of *circe*. From Papallacta on the Chimborazo.

L. behemoth Thieme is the shape of *zarathustra*, but the inner tail of the hindwing is wanting. Mark- *behemoth*. ings and colouring on the other hand similar to those of *circe* Fldr. Before the distal margin only one row of spots, which do not extend into the basal part. Only the spot in cellule 2 of the forewing is larger and accompanied by a small brown spot. This spot and also the costal spot of the forewing and two in cellules 4 and 5 of the hindwing are brilliant light red. Colombia. Rare. Coll. MAASSEN in the Zoolog. Museum, Berlin.

L. parthyene Hew. Above dark brown with red-brown submarginal band, which on the forewing is *parthyene*. narrow and bears a black spot before the apex. Before the latter, close to the costa, a white spot. On the hindwing this band is broader and bears 5 black spots. Beneath the forewing is red-brown at the base, the band is red-yellow, the white spot somewhat larger. Hindwing beneath much as in the allied species. Galgalan in Ecuador.

L. zapatoza Westw. (56 e). The smallest and the first published species of the genus. The spots *zapatoza*. in the brown distal margin of the forewing are more yellowish than the red-brown basal part. On the under surface almost the whole of the apex is yellowish and the hindwing bears a straight row of 4 small white spots. Venezuela.

L. sombra Thieme (57 a) approaches *zapatoza*, but differs so much in the larger size and darker colour- *sombra*. ing that it may probably be regarded as a good species. Above dark chestnut-brown, apex of the forewing broadly, distal margin narrowly black-brown. The marginal spots but little lighter than the basal part. Beneath the forewing is somewhat lighter than above, the apex marbled with grey and brown. The base and inner margin of the hindwing are similarly marbled; the distal part is for the most part filled up with brown, with a row of 4 white spots. Cordillera of Bogotá, Colombia.

L. orbifera Btlr. (57 a). Above bright brown-red. Forewing with broad black-brown distal margin, *orbifera*. which reaches to the cell, with 5 rather large, bright brown-red spots in a curved row. The hindwing with narrow margin and 5 brown spots before it. Under surface as in *zapatoza*. Bolivia. — **intercepta** Thieme *intercepta*. is a form of *orbifera* in which the brown-red spot in cellule 2 of the forewing is absent and on the hindwing the 3 anterior black-brown spots are confluent with the distal margin. From Baños in Ecuador. In the form **munda** Thieme the ground-colour is brilliant chestnut-red, the dark distal margin is narrower and *munda*. the red spot in cellule 2 is absent as in *intercepta*. Huancabamba (Peru), 3000 m. — **pura** Thieme, a fur- *pura*.

ther form belonging here, is distinguished by the chestnut-colour appearing almost golden red. The markings are nearly black and sharply defined. The row of spots in the distal margin of the forewing is replaced by a continuous submarginal band of particularly brilliant colour. From Tucuman in North Argentina. — In *semipartita* *form. nov.* (57 a) the dark brown distal margin of both wings is so broad that the dividing-line from the light brown-red basal half runs through the middle of the wing and the butterfly is consequently very similar to *Megalura hermione*. On the margin there are on the forewing only 2 small light brown-red spots and anteriorly a short streak, on the hindwing a light brown-red line. The under surface is as in *orbifera*, but the light spots in the distal margin of the forewing very small. From Manaure.

ciris. **L. ciris** *Thieme* (56 e) is similar to *zapatoza*. The forewing rather short with the apex almost rectangular. The tail of the hindwing is short and obtuse. The chestnut-brown ground-colour is much darkened and shades into the colour of the broad distal margin. In the latter a row of chestnut-brown spots. The submarginal row of black-brown spots on the hindwing is partly connected with the distal margin. From Ecuador and Colombia.

45. Genus: **Daedalma** *Hew.*

Head and eyes hairy. Palpus long projecting. In the forewing 2 subcostal veins arise before the end of the cell. The apex of this wing is obliquely truncate, the distal margin forms a right angle on the upper radial and below this is somewhat excised. The first and second median veins of the hindwing terminate in 2 obtuse tails which project straight out and do not bear the shaggy hair of the following genus. The costa of the hindwing is strongly excised. The few species are very similar and inhabit the Cordilleras from Venezuela to Bolivia, where they fly singly at especially high altitudes, above the tree-limit, and are all rare.

dinias. **D. dinias** *Hew.* (= *boliviana* *Stgr.*) (56 f ♂ upper and under surface, 51 b ♀). The form described and figured by HEWITSON from Colombia is not entirely dark on the underside of the forewing, as STAUDINGER states (*Iris* X, p. 139), but has the same red-yellow spots as on the upperside, for HEWITSON says in the text to the *dinias* plate in vol. 2 of his *Exotic Butterflies* that the underside of the forewing is "as above" and only mentions differences as regards the apex of the forewing and the hindwing. Thus this is the same form which STAUDINGER received from Bolivia and calls *boliviana*, and the latter name must consequently sink. The original *dinias* form with the red-yellow spot on the underside of the forewing has been taken by FASSL in both sexes in the Colombian East Cordilleras at Pacho (2200 m.) and at Monte Tolima (3200 m.). It is distributed across Peru to Bolivia. As the form with the dark under surface of the forewing is now without a name, I propose for it the name **oenotria** *form. nov.* (56 f). On the upper surface the red-yellow spot is still present, but removed further from the costa than in typical *dinias*. *oenotria* occurs at Bogotá. In an intermediate form between *dinias* and *rhomboidea*, which I call **rhomboidea** *form. nov.* (56 f), the red-yellow spot is of an obliquely quadrate shape and only its short inner angle enters the cell. From Bolivia.

inconspicua. **D. inconspicua** *Btlr.* Size and shape of *dinias*, except that the tails of the hindwing are somewhat longer and thinner. Above brown with some clouding, otherwise without markings. Beneath the forewing is grey with a brown band beyond the middle. The underside of the hindwing agrees entirely with that of *dinias* in markings and colouring. The ♀ is still unknown. From Quito and Papallacta on the Chimborazo. Rare.

drusilla. **D. drusilla** *Hew.* Shape of *dinias*, but smaller. Above brown with the fringes chequered with white. At the costa of the forewing before the apex 4 fine white streaks. Beneath the forewing is brown with a yellow-grey spot in the cell and a yellow-grey band before the distal margin, in which are placed a row of black dots. Before the apex a blue-grey spot. Hindwing beneath similar to that of *dinias*. The ♀ is not yet known. Colombia.

dora. **D. dora** *Stgr.* (56 f). Above almost entirely dark brown, only the tips of the fringes white between the veins. Forewing beneath brown with the apex marbled, hindwing beneath similar to that of *dinias*. The ♀ occurs in 2 somewhat different forms, one with a brownish ochre-yellow submarginal band on the upperside of both wings, in which are placed dark brown spots, the other with this band much infuscated and standing out but little from the dark ground-colour. On the underside of the forewing, which somewhat recalls the Palearctic *Vanessa urticae*, this band is, however, distinct in both forms. From the Bogota district, 2800—3200 m. (FASSL).

palacio. **D. palacio** *Dogn.* Size of the preceding species. Above brown. Forewing with a white transverse band across the middle and small white spots before the apex, hindwing with a row of small white spots from the costal margin to the middle. Beneath the forewing is as above, but the ground-colour lighter and the apex more spotted with white, hindwing similar to that of *dinias*, but with sharper dentate line and chestnut-red spots at the margin. The ♀ is not known. Loja (Ecuador).

46. Genus: **Polymastus** *Thieme.*

Forewing elongate, with the costal margin rather straight, the anterior part of the distal margin

produced into 3 more or less sharp points, below the upper radial strongly excised. The tails and angles of the hindwing are differently shaped in the individual species. The principal distinctive character of the genus consists in the costa of the hindwing, which is as strongly excised as in *Daedalma*, forming at the base an anteriorly directed, rounded projection. The space between the first median vein and the inner margin on the underside of the hindwing is adorned with single long hairs which grow out of the veins and lie over the surface of the wings (at least in set specimens). The tips of the tails and the projecting angles of the hindwing also show shaggy ciliation. At the inner angle 2 points are placed side by side. The species occur in the Cordilleras of tropical South America from Colombia to Bolivia, but are among the greatest rarities. The ♀♀ of the majority of the species are not yet known. Most of the forms were described as *Daedalma*.

P. doraete *Hew.* (57 a). On the under surface the light spots of the forewing are larger than above *doraete*, and lilac-coloured, between them is placed a row of eye-spots and two lilac longitudinal stripes border the cell. The hindwing has the ground-colour olive-brown, with a large number of angled silver spots and between them a row of 8 eye-spots. Colombia (Quindiu Paß, 3500 m. Mont Serrate near Bogotá, 3200 m. FASSL). Peru (Huancabamba, 3000 m. THIEME).

P. gideon *Thieme* is the shape of *doraete*, but the upper surface is wood-coloured brown, with 2 rows of lighter (not white) long spots, between which is placed a row of round dark brown spots, continued also on the hindwing. The under surface is nearly as in *doraete*. From Cushi in Peru. — **antissa** *Thieme* is a form of *gideon* in which the long light brown spots of the forewing are broader and at the ends bordered with whitish. From Huancabamba in North Peru. — **enipeas** *Thieme*, described by him as a separate species, is perhaps only a smaller form of *gideon* with the middle teeth of the hindwing shorter and the entire upper surface of more dusky colouring. The long spots of the forewing are less conspicuous, but are marked with dull white dots placed beside the dark circular spots. Under surface as in *gideon* and *doraete*. From Cillutincara and Rio Songo in Bolivia.

P. dorinde *Fldr.* (57 b). This and the following species have only one row of spots on the forewing above and beneath. The hindwing, however, bears two rows. These are yellowish white. The ground-colour of the upper surface is light brown, in the ♀ figured from the Berlin Museum lighter and more yellowish than in the ♂. Rare. Colombia (Cauca), Ecuador.

P. emilia *Btlr.* (57 b) is rather like the preceding species, but is distinguished by having the distal half of the hindwing beneath light grey and the row of eye-spots indistinct. The basal half of this wing is not dark green, as in *dorinde*, but dark grey with large silver spots. Found by FASSL at the Quindiu Pass at an elevation of 2700 m.

P. whitelyi *Druce* (57 b ♂ and ♀). On the upper surface there is in the ♂ a second row of indistinct whitish yellow spots before the distal margin of the forewing. The ♀ has the ground-colour of the upperside yellowish brown, with rows of ochre-yellow spots. Peru, Bolivia (Chaco, San Antonio, Rio Songo), Ecuador (Baños).

47. Genus: **Thiemeia** *gen. nov.*

At the end of the following genus, *Catargynnis* *Röb.*, THIEME has placed 2 species, which differ very much in shape from the other species of the genus. They have on the first two median veins of the hindwing long straight tails, as in *Daedalma*, and the distal margin of the forewing is strongly excised in the middle. On the ground of these differences I propose erecting a new genus for them, and name it in honour of the late Prof. THIEME, whose too early death has deprived entomology of a good worker at the present family. These species cannot be referred to *Daedalma*, as they lack the concave excision at the costal margin of the hindwing, which is here more smoothly rounded. The first species was described as a *Pronophila*, the second as a *Catargynnis*.

T. phoronea *Dbl. & Hew.* The distal margin of the forewing projects in an obtuse angle on the upper radial. Above unicolorous dark brown, only the fringes broadly chequered with brown and white. The shape is quite similar to the figured *ortruda*, except that the two tails are not parallel as in this, but diverge somewhat distally. The ♀ is paler brown above with a blurred white costal spot on the forewing. Beneath the forewing is brown, at the apex marbled with white, reddish, yellowish and purple-grey, the fringes as above. Hindwing reddish chocolate-coloured, in the middle darker, basally with whitish band, distally with a row of 6 brown, white-ringed spots, which are surrounded with purple-grey. Venezuela. Very rare in collections, only in the Brit. Museum ♂ and ♀, and in the Berlin Museum 1 ♀ (coll. STAUDINGER).

T. ortruda *Thieme* (57 c ♀ upper and under surface). The ♂ is unicolorous brown above and resembles the ♂ of *phoronea* on the under surface also. But the ♀ is very different. It has on both surfaces of the forewing a broad ochre-yellow band, which above is also continued on the anterior part of the hindwing. From Bolivia (Rio Songo and Cillutincara, 3000 m.). Rare.

48. Genus: **Catargynnis** Rüb.

After the 2 tailed species which THIEME referred to this genus have been removed (cf. the preceding genus, *Thiemeia*) the rest may be characterized as follows. Eyes strongly hairy. Palpus long projecting, with appressed hairs, the terminal joint pointed. Antenna with long, thin club. Forewing elongate, the distal margin fairly straight or with shallow excision in the middle, hindwing undulate, rarely more strongly dentate, occasionally somewhat produced in the anal part. In the forewing 2 subcostal veins arise before the end of the cell. The middle discocellular forms in both wings an angle proximad, from which a small recurrent veins arises. Many species have on the underside rows of silvery spots, especially on the hindwing, or silvery bands. The species occur in the high mountains from Guatemala to Bolivia, only one in South Brazil. They are mostly very rare in collections. Several species have been described as *Oxeoschistus*, some also as *Pronophila* or *Daedalma*.

- gigas*. **C. gigas** Godm. & Salv. (57 c ♂ upper and ♀ under surface). The largest species of the genus, distinguished by the broad red-yellow marginal band of the hindwing and the rows of silvery spots on the underside of both wings, which in the figured ♀ are larger than in the ♂. From the high mountains of Guatemala (Accytuno, Purula, Pansamala). Very rare.
- rogersi*. **C. rogersi** Godm. & Salv. Above brown with a broad red-yellow submarginal macular band on the forewing, on which are placed several round brown spots. Hindwing above without markings. Beneath the forewing is as above, but the hindwing similar to that of the following *phaselis*, bearing several rows of silver spots and between them a row of black eye-spots with ochre-yellow pupils and rings. From Irazu in Costa Rica and Chiriqui in Panama.
- phaselis*. **C. phaselis** Hew. Above unicolorous dark brown, beneath like the form *argyritis*, figured on pl. 57 c, but with the ground-colour of the under surface of the hindwing not dark brown but red-brown. The apex of the forewing is also red-brown, with some white spots. The ♀ is somewhat larger. From Venezuela and Colombia. — **argyritis** Thieme (57 c) is the dark Bolivian form of *phaselis*, with the ground-colour of the hindwing beneath not rust-red but dark brown and the silvery spots larger and more distinct. From Bolivia and Peru.
- pholoe*. **C. pholoe** Stgr. (= *Oxeoschistus phalsi* Gr.-Sm.) (57 d upper and under surface). May be known by the submarginal row of red-yellow spots on the forewing. Beneath the silver spots are much smaller than in the preceding species. From Colombia (Cauca).
- mirabilis*. **C. mirabilis** Btlr. Shape of *Mygona prochyta*, but the forewing shorter. Above dark brown with green reflection, fringes black, chequered with sulphur-yellow. Forewing beneath dark brown with a black, white-bordered line before the distal margin, beside it 3 black blind eye-spots, a double white subcostal spot and some eye-shaped spots in the disc. Hindwing beneath olive-brown, with two obscure silver bands enclosing a dark dentate median band, beyond it a row of 8 black, white-pupilled eye-spots with yellow iris. Huasampilla (Peru). Rare. One ♂ in the Brit. Museum.
- loxo*. **C. loxo** Dogn. (= *Pronoph. sagartia* Gr.-Sm., *Daedalma bronza* Weeks) (47 d). The species is distinguished by having the anal part of the hindwing elongated. The upper surface is unicolorous glossy bronze-brown. On the under surface the silvery bands are not well expressed. From Colombia (Bogotá, Zipapura).
- ilsa*. **C. ilsa** Thieme (47 e) has the wings less elongate than in *loxo*, the markings of the under surface much more distinct and the silver stripes in the ♂ brighter. The ♂ is unicolorous dark brown above, the ♀ more olive-brown. The tooth on the first median vein of the hindwing projects less in the ♀ than in the ♂, which is figured here. Moreover, the ♀ has the silver band on the underside of the forewing interrupted in the middle and the silver markings of the hindwing somewhat infuscated. Rare. Colombia (Cauca [coll. STAUDINGER], Rio Vitaca, 2500 m. [coll. FASSL]).
- gerlinda*. **C. gerlinda** Thieme. Similar to the preceding, but with the wings shorter and rounder. Above unicolorous brown with slight gloss. Underside of the forewing dull brown with 3 small eye-spots before the apex and indistinct lighter marginal spots; that of the hindwing is light brown shot with silvery, with a strongly dentate median band, which is interrupted in the middle, the base dark brown, a distinct row of eye-spots and a dark marginal band, strongly dentate proximally. Bolivia (Yungas de la Paz, Loco Valley, San Jacinto, Cillutincara).
- helche*. **C. helche** Thieme (57 d upper and under surface). Distal margin of the forewing obtusely projecting at the upper radial. The scheme of markings of the under surface is very similar to that of *gerlinda*, but *helche* may be at once distinguished here by the chestnut-red basal area of the forewing. The habitat is likewise Bolivia (San Antonio, Cillutincara). Rare. 2 examples, ♂ and ♀, in coll. STAUDINGER (Berlin Museum).
- asuba*. **C. asuba** Thieme. Above brown with strong coppery gloss. The forewing shows a large dusky scale-spot, extending in rays along the veins. The hindwing is more feebly dentate. On the under surface there is

a chestnut-red spot between the median veins of the forewing, by which the species may be recognized. Of the 3 silvery transverse stripes on the underside of the hindwing the proximal one is quite straight. Bolivia (Yungas de la Paz). Rare, only one ♂ in THIEME's collection.

C. mena Gr.-Sm. (58 a). Above unicolorous brown, with bronzy gloss. Beneath the silver markings *mena*. at the apex of the forewing and the silver bands on the hindwing are much darkened by brown dusting. There is mostly here on the forewing a small orange spot between the 2nd and 3rd median veins, which was wanting in the example figured. Bolivia (Yungas de la Paz, San Jacinto, San Antonio, Cillutincara).

C. clethra Thieme. Similar to the preceding, but smaller. Above glossy bronze-brown. Forewing *clethra*. beneath without gloss, dark brown, only the apex somewhat silvery. A small chestnut-red spot between the 2nd and 3rd median veins. Hindwing beneath likewise dark brown, only the anterior half somewhat silvery. There is no trace of transverse bands, on the other hand all the veins are black and each cellule bisected longitudinally by a black line, forming a pattern similar to that of the *Actinote* species. At the base are placed some small red spots. From Peru (Villanota and Chanchamayo). 2 examples in coll. STAUDINGER (Berlin Museum).

C. schreineri Foetterle (= lemur Thieme) (58 a). Above pale yellowish brown with 2 rows of light *schreineri*. ochre-yellow spots and dark grey-brown base. The hindwing is margined with reddish in the anal part. The under surface is similarly marked to the upper, except that the spots on the hindwing have a dull silvery gloss and in the basal half of this wing is placed a silver band partly broken up into spots. The ground-colour of the hindwing beneath is yellowish brown, finely striated with dark brown. Petropolis (South Brazil).

49. Genus: **Mygona** Thieme.

The costal margin of the forewing is long, its anterior part produced distad, and the distal margin consequently excised below the upper radial. The hindwing is strongly dentate, the tooth on the 2nd median vein broader and stronger than the rest, but not produced into a tail. The costa of the hindwing is not emarginate, but smooth and rounded. In the scheme of markings of the under surface the species are all very similar. On the hindwing a white spectacle-shaped spot and 3 white dots forming a triangle are nearly always present and on the forewing mostly three chestnut-red or light brown dots. The species have been described as *Pronophila* or *Oxeoschistus*.

M. prochyta Hew. (= *Oxeoschistus erebus* Gr.-Sm.) (57 e). Above unicolorous dark brown, only the base *prochyta*. and apical part of the forewing somewhat lighter. The ♀ has an indistinct, somewhat lighter brown costal spot and sometimes 2 reddish grey spots between the median veins of the forewing. Bolivia (Yungas de la Paz). — **chyprota** Gr.-Sm. (57 e) may probably be regarded as the Peruvian form of *prochyta*. It is somewhat *chyprota*. smaller, on the under surface quite similarly marked, only more red-brown. On the upper surface the basal part of the wings is entirely red-brown, the distal part spotted with red-brown. From Peru (Cuzco, Callanga, Vilcanota).

M. thammi Stgr. (57 e upper and under surface). Similar to the preceding species, but the hindwing *thammi*. almost entirely chestnut-red above, with 3 black spots before the margin. The under surface very variegated. Peru (Chanchamayo, Cushi, Hunancabamba).

M. poecania Hew. Forewing above unicolorous brown, hindwing brown, the anal part occupied by *poecania*. a red-brown area, which reaches to the middle of the wing and is traversed by a brown submarginal line. The under surface is quite similar to the preceding species. From Ecuador. Rare.

M. irmina Dbl. (58 a). May be known by the large white spot of the hindwing on the upper surface, *irmina*. which is otherwise dark brown. The under surface is very similar to that of *prochyta*, except that the apex of both wings is marbled with lighter grey-brown. In the ♀ the distal margin on the upperside of the hindwing is narrowly brown-red, a brown-red spot is placed before the apex and 2 indistinct spots between the median veins of the forewing. Venezuela (Merida), Colombia (Bogotá, Rio Vitaco).

50. Genus: **Proboscis** Thieme.

This genus is distinguished by having the apex of the forewing falcate and strongly recurved posteriorly. The costa of the hindwing is concave. The distal margin of this wing is dentate and forms a short tail on the 2nd median vein. Only one Colombian species, which HEWITSON made known as a *Pronophila*.

P. propylea Hew. (58 b). Forewing beneath brown, with red-brown base and apex and 3 brownish *propylea*. yellow spots before the distal margin. Hindwing beneath yellowish brown with brown median band and brown margin, in which is placed a row of whitish yellow spots and dots. Colombia. The species is very rare and was unknown to THIEME in nature. FASSL took a specimen in the neighbourhood of Muzo at 2000 m.

51. Genus: **Drucina** Btlr.

Forewing narrow and elongate, its apex less recurved than in *Proboscis* and, with the exception of *orsedice*, rounded, the distal margin weakly excised, but even, that of the hindwing slightly undulate or smooth. Palpus long and porrect, the terminal joint almost half as long as the middle joint.

leonata. **D. leonata** Btlr. (58a, b). The ♀ is somewhat larger than the ♂, of which we figure both surfaces, the apical part of the forewing above is somewhat lighter and there are some milk-white spots in the disc. On the hindwing the ferruginous stripes extend further and between them are placed beyond the cell 3 obscure white rays. Costa Rica (Irazu and Rio Sucio), Panama (Volcan de Chiriqui).

championi. **D. championi** Godm. & Salv. Somewhat larger than the preceding species. Above black-brown. Forewing with a submarginal row of 5 or 6 small ochre-yellow spots, hindwing with 6 bright blue oval spots in a curved row, of which 5 are large (5—10 mm. in length) and the last, at the anal angle, small. Forewing beneath brown with the apex marbled with grey and with 4 white spots, the hindwing marbled with grey and brown, with brown spots and indistinct double row of eye-spots. A rare and beautiful species. Discovered by CHAMPION in Guatemala (Cerro Zunti), coll. GODMAN and SALVIN.

venerata. **D. venerata** Btlr. (58 b, c). BUTLER and STAUDINGER have referred this species to the genus *Pronophila*. Although the forewing is not so sharply pointed as in the other *Drucina* species, yet the narrow, elongate forewing with its oblique distal margin seems to me to point rather to the genus *Drucina*, to which THIEME has referred it. Hence I follow this arrangement. The ♀ is distinguished from the ♂, which we figure on both surfaces, by having the light spot on the underside of the hindwing not white but brownish grey, so that it stands out but little from the ground-colour, on the other hand the dentate line before the anal angle is distinctly white. Peru, Bolivia (San Antonio and Cillutincara).

orsedice. **D. orsedice** Hew. The forewing is pointed, but the apex is not recurved. Above red-brown. Both wings with a red spot in the cell and 2 rows of red spots beyond the middle, which are small on the forewing, large on the hindwing. Hindwing further with some red marginal spots. Forewing beneath reddish, with a pale brown spot before the apex and some red spots between the median veins, on which are placed a row of 4 black eye-spots, mostly with white pupils. Hindwing beneath pale brown, a red-brown band before the middle, then a row of 5 red-brown spots with white pupils. Expanse $2\frac{4}{5}$ in. (71 mm.). Ecuador, Peru (Huanca-bamba). — **astoreth** Thieme is a form of *orsedice* in which the forewing is unicolorous brown above and the red marginal spots of the hindwing are absent. Expanse 60 mm. Bolivia (Yungas de la Paz). — **violacea** form. nov. (on pl. 58 erroneously called *orsedice*) seems to be a form near to *orsedice* or a separate species. It is characterized by the brownish violet ground-colour of both wings. All the margins and all the veins are bordered with dark brown; the costal margin of the forewing and the distal margin of the hindwing are in addition narrowly bordered with violet-brown. The submarginal spots are light-pupilled on the under surface. From Macas in Ecuador. Coll. NIEPELT.

52. Genus: **Dioriste** Thieme.

The species of this genus, which on account of their similar shape were formerly referred to *Oxeoschistus* Btlr., THIEME has separated from it, as they all have a certain resemblance *inter se*. This consists in the presence on the upper surface of large white or light yellow spots and on the underside of the hindwing of a whitish yellow discal band with a submarginal row of eye-spots.

tauropolis. **D. tauropolis** Dbl. & Hew. (= *laetifica* Bates) (58 c). May be known by the large, sharply dentate, yellowish white spot on the hindwing, which on the underside is prolonged to the inner angle as a narrow stripe and encloses a row of eye-spots; there is further a white line at the base beneath. The spots of the forewing are alike above and beneath. Distributed from Mexico over Guatemala to Nicaragua. — **cothon** Salv. is a somewhat aberrant form of *tauropolis*. It has on the forewing 3 additional whitish yellow spots (2 before the apex, 1 in the disc), the spot on the hindwing is larger and on the underside the band which crosses the cell of the hindwing is much broader and occupies a larger area of the cell. From Costa Rica and Panama.

cothonides. **D. cothonides** Gr.-Sm. (58 d). Recognizable by the broad brick-coloured red-yellow median area of the hindwing, which changes into red-brown towards the inner margin. 3 small black eye-spots with white pupils near the anal angle. The under surface is not strikingly different from that of *cothon*. The ♀ is marked quite similarly to the ♂. Costa Rica (Carthago), Panama (Chiriqui).

leucospilos. **D. leucospilos** Stgr. (58 c). Forewing above almost unicolorous dark brown; the markings of the under surface (which we figure) only show through very indistinctly. Hindwing above with large irregular white spot in the cell. Peru, Ecuador. — **pugil** Thieme (58 c) is a form in which the white spot on the upperside of the hindwing is somewhat larger and bears a round dark brown spot, in place of which on the under surface there

is added a fifth eye-spot. In the ♀ the markings of the underside are also present above and on the hindwing the white spot is prolonged to the costa. Bolivia (Illimani and Yungas de la Paz).

53. Genus: **Cheimas** *Thieme*.

Apex of the forewing rectangular, margin of the hindwing slightly undulate. Above with large, slightly glossy, yellowish or bluish white spot on the hindwing. Beneath almost without markings, red-brown. Only one species, published as *Oxeoschistus*.

Ch. opalinus *Stgr.* (58 d). The large silver-grey spot of the hindwing with variously coloured reflections, *opalinus*. According to the angle of light it has a golden yellow or a light blue sheen. The under surface is entirely red-brown with the margin but little darker. Hindwing with dark brown transverse lines, a yellow median dot and a submarginal row of yellow dots. Venezuela. — **spoliatus** *Stgr.* (58 d) is a form of *opalinus* with the *spoliatus* yellow dots on the underside of the hindwing entirely absent and the spot on the upperside less white. Likewise from Venezuela.

54. Genus: **Oxeoschistus** *Btlr.*

After the species of the preceding genera *Mygona*, *Proboscis*, *Diorista* and *Cheimas*, which BUTLER had united with *Oxeoschistus*, have been removed, this genus only contains quite similar species, which agree in the following points: Palpus thinly haired, its terminal joint pointed and projecting for about the length of the head. Apex of the forewing rounded and not distally produced. Distal margin of the hindwing more or less strongly undulate. Most of the species have on the upperside a broad brick-coloured red-yellow submarginal band which bears a row of black spots. They occur in the high mountains from Guatemala to Bolivia.

O. pronax *Hew.* (58 d). On the upperside the band is curved basewards at the costal margin of the *pronax* forewing, by which the species may be known. Beneath the forewing is as above, but the band whitish at the costal margin, the hindwing red-brown with 2 rows of yellowish white spots before the margin, which are bisected by the black veins. Between them some very small eye-spots. Peru and Bolivia.

O. duplex *Godm.* (58 d). The band is distally sharply dentate on the hindwing and at the distal *duplex* margin there is a row of red-yellow crescents. The black-brown spots on the band are very large. On the under surface the apex of the forewing is ferruginous, the band anteriorly white. Hindwing red-brown, the band bordered with white at both sides, a white line is placed in the basal area and the black spots have white pupils. Bolivia, Peru.

O. simplex *Btlr.* (58 e). The band is anteriorly narrow and posteriorly broad and at the inner margin *simplex* of the hindwing extends to the distal margin. The dark spots are scarcely half as large as in *duplex*. The figure of the under surface (pl. 58 e) represents a ♀. In the ♂ the white median stripe of the hindwing is only half as broad. — According to FASSL the egg is the same size as that of *Satyrus briseis*, is spherical and has a mother-of-pearl gloss on the surface. The species is distributed in Colombia. FASSL found it already at 1200 m., but also at altitudes of 2500 m. According to GODMAN it also occurs in Ecuador.

O. puerta *Westw.* (58 d) differs from *simplex* in that the red-yellow band decreases less in breadth *puerta* anteriorly, but on the hindwing does not extend to the distal margin. On the other hand the brown distal border reaches the anal angle. The brown spots vary in number and size. HEWITSON gives the number of spots on the forewing as 4, on the hindwing as 7, in the example figured only a few are present. Beneath the brown spots on the forewing are very small, the hindwing similar to that of *simplex*. Colombia, Venezuela, Costa Rica. — **submaculatus** *Btlr.* (58 e) is a form of *puerta* in which the red-yellow band is especially *submaculatus* broad on the hindwing and as in *simplex* extends to the anal angle, but on the forewing becomes very narrow and is anteriorly broken up into small spots. Instead of the brown spots there are on the hindwing only a few dots at the anal angle, on the forewing they are entirely absent. Beneath the proximal part of the forewing is very dark. From Costa Rica. — **pervius** *Thieme* is a similar form to *submaculatus*, but considerably *pervius* larger, with the band on the forewing broader and not broken up into spots. From the province of Cauca in Colombia.

O. isolda *Thieme* may be recognized by the dark mahogany-red band, which is the same shape as in *isolda* *puerta*, thus not touching the distal margin of the hindwing. The spots placed on this band are very small or absent, especially on the forewing. The under surface is similar to that of *puerta*, but the markings are duller, the ocelli smaller and not bordered with yellow. In the ♀ the colouring of the upper surface is somewhat lighter. Ecuador (Mirador) (HAENSCH).

- protogenia*. **O. protogenia** Hew. (59 a). The bright red-yellow band of the upper surface is especially broad on the hindwing and the row of brown spots placed in it is complete. On the underside of the hindwing the basal transverse line is absent, by which the species may be known. Colombia, Ecuador, Peru, Bolivia.
- euryphile*. **O. euryphile** Btlr. (= euriophyle) (59 a. Upper surface. The U on the plate is incorrect). May be known by the light yellow colour of the band, which on the upperside only shades off somewhat into red-yellow in its distal part, but on the underside into white, and on the forewing is entirely broken up into spots. Beneath the forewing has 4 ocelli and before the apex several white spots, the hindwing in the proximal part some light markings and distally a row of eye-spots. From Costa Rica (Irazu), Panama (Chiriqui).
- hilarus*. **O. hilarus** Bates. Instead of the band there are here on the upper surface 2 rows of small, irregularly placed red-yellow spots on both wings. On the under surface of the forewing the spots are white and some of them joined together in pairs. Between them are placed black spots bordered with red-yellow. Hindwing brown, all the veins white, 2 sulphur-yellow transverse bands cross the middle, so that a latticed pattern is formed. In addition a white dentate line is placed at the margin. Guatemala (Volcan de Fuego, Cerro Zunil, Purula), Mexico (Xantipa and Omilteme in Guerrero).

55. Gattung: **Pronophila** Westw.

In consequence of the division proposed by BUTLER only a few out of the large number of *Pronophila* species figured and described by WESTWOOD, HEWITSON, FELDER and others are still regarded as belonging in this genus, and indeed only those which are similar in shape and markings to the first two species cited by WESTWOOD (*thelebe* and *cordillera*). The greater part of the others form the present genus *Pedaliodes* Btlr. (p. 250). The *Pronophila* species (in the restricted sense) have broad wings, the hindwing nearly round with the distal margin more or less undulate, the inner margin of the forewing comparatively long, its distal margin consequently vertical (not oblique) and nearly straight. On the underside of the forewing almost all bear a row of black eye-spots with blue pupils; the upper surface is black-brown, sometimes unicolorous, sometimes with white, brownish red or grey-brown spots before the apex of the forewing. They are mostly rather large butterflies, and inhabit the high Andes from Central America to Bolivia.

- timanthus*. **P. timanthus** Salv. (59 a upper and under surface). The black spots, which on the upperside are placed on the long brownish red oval patches, bear on the under surface blue pupils. Costa Rica (Irazu), Panama (Chiriqui). — **intercidona** Thieme (59 a) may perhaps be regarded as a form of *timanthus* in which the proximal halves of the oval patches are wanting with the exception of the anterior ones and which has these spots brilliant golden brown. Sometimes there is further a red spot between the 2nd and 3rd median veins. From Ecuador (Santa Inez).
- deverra*. **P. deverra** Thieme has before the distal margin of the forewing a row of light reddish spots, the anterior ones somewhat larger. The under surface resembles that of *Pron. thelebe* (59 b), especially the hindwing. On the forewing the macular band is continued further, to the inner margin, and is not white, but has the light reddish brown colour of the upper surface. From Ecuador.
- assarhaddon*. **P. assarhaddon** Thieme (= *rosenbergi* Lathy) (59 b). Above black-brown, at the base somewhat lighter, the forewing with the same white macular band as on the figured under surface. Hindwing only with the tips of the fringes between the veins white. Ecuador (Santa Lucia) (HAENSCH).
- thelebe*. **P. thelebe** Dbl. & Hew. (59 b) is the best known species of the genus. The white spots on the upper surface vary in number, size and shape. Examples from Peru and Bolivia are more copiously spotted with white than those from more northerly localities. The ♀ has the ground-colour of the upperside much paler brown and the hindwing is more strongly dentate. Venezuela, Colombia, Ecuador, Peru, Bolivia. — *obscura*. **obscura** Btlr. is probably a *thelebe* form. According to BUTLER's description the colouring of the upper surface is as in *thelebe*. Hence we must assume that the upperside has white spots on the forewing. But the under surface, which BUTLER figures, shows no such spots, only the apex is whitish. The 4 black eye-spots with light blue pupils are placed in the disc in a straight row on a dark ground. The underside of the hindwing is almost exactly like our figure of *thelebe*, pl. 59 b. Venezuela. 2 examples in the Brit. Museum.
- thelebina*. **thelebina** Thieme (59 b) is a further form of *thelebe*, somewhat smaller and with smaller white spots, only the first is the same length as in *thelebe* and bears above a black dot at its proximal end. The hindwing is smooth-margined. On the under surface the ocelli and the red dots are indistinct, as also are the markings on the hindwing. Colombia (Rio Dagua), Peru (Chanchamayo), Bolivia (Yungas de la Paz).
- brennus*. **P. brennus** Thieme (59 c upper and under surface). The row of pale brown spots on the upper surface is sometimes dirty white or reddish; sometimes there is also a further small red-yellow spot at the proximal side of the first of these spots. In the ♀ the ground-colour is not so deep black as in the ♂, hence the row of eye-spots on the under surface is sometimes visible in the ♀ on the upperside also, as was the case in one of the examples found by FASSL. Hitherto only found in western Colombia, in the Cauca Valley by HAHNEL, Popayan and Rio Dagua by KALBREYER, Rio Agna Valley by FASSL.

P. orchus Hew. (= *orcus* Btlr.) (59 c). Above dark brown with four small grey spots before the apex *orchus*. of the forewing. On the under surface the species may be known by having several white spots before the apex and a red-yellow one in the middle of the forewing and at the anal angle of the hindwing a fine black dentate line on a white ground. Colombia.

P. cordillera Westw. (59 c). Above brown, hindwing and apex of the forewing with slight reddish *cordillera*. brown gloss. This beautiful species may be recognized by the chestnut-red basal half of the forewing beneath. Bolivia.

P. orcus Latr. (= *orchamus* Godt., *porsenna* Hew.) (60 a). Above unicolorous dark brown, only the apex *orcus*. of the forewing somewhat lighter. The distal margin of the hindwing is weakly undulate. The ♀ is somewhat larger (expanse 78 mm.) and somewhat lighter brown and has on the upperside of the forewing 4 round black spots, corresponding in position to the eye-spots of the under surface. These spots are placed in a yellowish brown patch. Instead of the grey-brown colour of the ♂ the ♀ has the ground-colour of the underside of the hindwing light reddish brown, as also the distal margin of the forewing. The dark markings are all of a dark red-brown colour. Colombia. FASSL took both sexes at the Alto de los Anees at an altitude of 2200 m. and at the Quindiu Pass (2600 m.). — **locuples** Thieme is a form of *orcus* in which the under surface of the *locuples*. forewing bears a second small red-yellow spot near the costa. On the upper surface the lighter brown apical shade is separated by a brown border from the distal margin. Bolivia. — **nepete** Thieme is a further *nepete*. form which has on the upper surface a light yellow-brown macular band with slight golden gloss, extending from the costa to the 2nd median and also marked on the underside as a brownish white area. Otherwise the under surface does not differ from that of *orcus*. From Peru (Chanchamayo). — A third form is **parallela** Thieme. In it the 4 ocelli on the forewing beneath are placed in a straight line one below another, *parallela*. parallel with the distal margin, and all of uniform size, and the last but one is bordered with red at both sides. From Venezuela (Valencia).

P. variabilis Btlr. is allied to *orcus* Latr. (*porsenna* Hew.). Above with green and reddish bronzy *variabilis*. gloss, without white spots, but with 3 dark spots at the apex of the forewing and 2 or 3 at the anal angle of the hindwing. Beneath the red-yellow spot of the forewing is absent, the hindwing is more whitish, the bands at the base and in the middle darker, with 8 white-pupilled and light-bordered eye-spots and a broad brown margin, proximally bordered with lilac. Peru.

P. epidipnis Thieme (60 a). Above unicolorous brown. Beneath similar to *orchus* Hew., but the ground- *epidipnis*. colour of the hindwing is throughout light grey without white, only at certain angles a slight silvery gloss is visible. The median band is nearly straight. Merida, Venezuela.

P. lucomo Thieme. A large species. The costal margin of the forewing is somewhat longer, hence the *lucomo*. distal margin is more oblique than in the other species. Hindwing strongly dentate, its distal margin somewhat produced in the middle. Above dark brown, before the apex somewhat lighter. Beneath similar to *orchus* Hew., but without the red-yellow spot on the forewing. On the hindwing the dark median band is bordered with white on both sides at the costal margin; at the inner margin a large white spot is placed before it. From Vilcanota in Peru. Coll. STAUDINGER in the Berlin Museum.

P. colocasia Thieme is similar to the preceding species, unicolorous brown above, and differing from *colocasia*. it in having the median band of the hindwing beneath broader, sharply defined on a silvery ground, basally bent round and not reaching the inner margin. The anterior part of the distal margin of this wing is broadly bordered with ferruginous. From Rioja in Peru. Coll. STAUDINGER in the Berlin Museum.

56. Genus: **Corades** Dbl. & Hew.

The species of this genus may be known at a glance by the elongate form of the hindwing, the anal margin of which runs out in an almost straight line into a long tail, which is formed by the first median vein. Consequently the cellules at the inner margin are very narrow. Only in a few species the tail is shorter. The distal margin of the forewing is plain or rounded, that of the hindwing likewise plain or slightly undulate. The costal vein of the forewing is swollen at the base. Two subcostal veins arise before the end of the cell on the forewing. The middle discocellular forms on both wings an angle proximad, from which arises a small recurrent vein. The rather long palpi and the eyes are finely haired. The butterflies are of medium size, the upper surface unicolorous black-brown or partly red-brown or yellow-brown, sometimes with yellow or white spots. The under surface is often light and dark marbled, the hindwing then agreeing in colouring with the apex of the forewing. Sometimes silvery stripes are present. Their range of distribution embraces the Andes from Venezuela to Bolivia, only one species reaches North Argentina. Statements differ as to the vertical distribution. The altitude at which the *Corades* species fly is given by BÜRGER in his „Reisen eines Naturforschers“ as 500 m. to 2800 m., whilst according to THIEME they are confined to particularly high altitudes and FASSL gives the lowest elevation as 1400 m., the highest as over 3500 m. They always fly singly and are not common.

C. pannonia Hew. (= *ichthya* H.-Schäff., ♀ = *fluminalis* Btlr.). Above unicolorous brown. Forewing *pannonia*.

- beneath brown with silvery striation at the apex and 3 red spots in the disc. Hindwing beneath striated with silver throughout, with a broad yellow band across the middle. *fluminalis* Btlr. may probably be regarded as the ♀ of *pannonia*. Upper surface brown with 2 white spots at the costa and 3 red-yellow ones between or beside the median veins. Hindwing with 3 ferruginous streaks between the veins. Beneath the forewing has paler spots. Hindwing ochre-yellow striated with copper-brown and with copper-brown median and marginal bands. Venezuela. BUTLER does not give the locality of his *fluminalis*. — *ploas* Thieme (59 d) is the Colombian form of *pannonia*. In it the 3 red-brown spots on the underside of the forewing are much darkened and scarcely visible, the hindwing has instead of the broad yellow band a silvery grey one, which, however, is largely covered with brown striation. The ♀ was found by FASSL and differs from the ♂ in having 2 small brownish white spots on the brown upper surface, placed at the costal margin, one 9, the other 17 mm. from the apex, the latter bipartite. Apex and distal margin broadly lighter. The under surface is coloured like that of the ♂, except that the white colour is somewhat more extended. A second form of the ♀ (*domina* form. nov.) (59 d), in addition to the 2 somewhat more distinct white spots, has on the upperside of the forewing a row of 4 red-yellow spots and on the hindwing a row of red-brown ones, and below them a red-brown stripe which runs to before the tip of the tail. The distal margin is also narrowly bordered with red-brown. The under surface is as in the first female form. Colombia (Alto de las Cruces), 2400 m., West Cordillera. According to FASSL the egg of *ploas* is somewhat larger than that of *Pap. machaon*, bomb-shaped, bone-white, smooth at the base, otherwise much pitted.
- argentata*. **C. argentata** Btlr. (= *pannonia* Hew. part.) (59 d). Above brown, distally lighter. Forewing beneath with 3 golden brown spots. Hindwing beneath with dark basal and median areas, anteriorly separated by a short silver line and distally bordered by a somewhat curved one. Bolivia.
- melania*. **C. melania** Stgr. The tails are somewhat shorter, the upper surface unicolorous glossy bronze-brown. Under surface dark brown, forewing with a small whitish spot between the first and second median veins, which is sometimes absent. The hindwing is entirely covered with fine, short, silvery transverse streaks, so that the dark median band can scarcely be recognized. Bolivia.
- cybele*. **C. cybele** Btlr. (60 b). Above unicolorous black-brown. Beneath the species may be known by the golden brown hammer-shaped spot on the forewing. Colombia. — *semitiplena* Thieme is a form with the posterior half of the cell on the forewing beneath filled up with golden brown along the median. Peru. — *fusciplaga*. **C. fusciplaga** Btlr. is probably a further form of *cybele*; the underside of the forewing bears a very small light brown spot in place of the golden brown hammer-shaped spot. According to BUTLER the upper surface is similar to that of *sareba*. Peru.
- medeba*. **C. medeba** Hew. (60 a) has shorter tails and in the ♂ a unicolorous brown upper surface. On the under surface recognizable by the red-yellow longitudinal stripe in the cell of the forewing and some red-yellow spots behind it in the disc. The ♀ has on the upperside a row of small, obscure reddish spots on the forewing and also some similar spots in the disc of the hindwing. From Colombia to Bolivia. — *columbina*. **C. columbina** Stgr. (60 b) is a *medeba* form in which there is only a small spot in place of the red-yellow longitudinal stripe on the under surface. Occurs not only in Colombia but also in Bolivia among the type-form.
- sareba*. **C. sareba** Hew. (= *melusina* Stgr. i. l.) (60 b) may be known by the brownish yellow basal half of the forewing beneath. Upper surface dark brown, the forewing with an indistinct submarginal row of somewhat lighter spots. Bolivia.
- chirone*. **C. chirone** Hew. (♀ = *laminata* Btlr.) (♂ 60 a under surface, on the plate erroneously called *ulema*, ♀ 59 d upper surface). The ♂ is unicolorous brown above. Beneath differing from *ulema* in having in the posterior half of the forewing only 2 light yellow spots, not 3 as in *ulema*, and in the light band on the hindwing between the base and the middle only reaching the median, whilst in *ulema* it extends nearly to the base of the tail. The ♀ (*laminata* Btlr.) has on the upperside of the forewing a submarginal row of yellow-brown spots, which in the anterior part of the hindwing are united into a broader half-band. Beneath the markings are similar to those of the ♂, which we figure, but at the inner angle of the forewing there are 3 larger, ochre-yellow spots in place of the 2 in the ♂. The hindwing is marbled with lighter in the basal and median areas and instead of the ochre-yellow stripe in the middle of the silver-white band there is here a brown and white marbled stripe. Both sexes of this species, which is at present in but few collections, were found by FASSL in July on Monte Socorro (Colombia) at an altitude of 3500 m.
- ulema*. **C. ulema** Hew. (59 d under surface, erroneously called *chirone* ♂ on the plate). According to HEWITSON the upper surface is unicolorous brown, the example figured here is likewise brown, but has a red-brown gloss throughout, with no trace of a band. The examples with distinct light submarginal band, mentioned by THIEME, are thus transitional to the form *tripunctata*. Beneath similar to *chirone*, the differences have been given above under the latter. The ♀ has on the upperside a submarginal row of red-brown spots on the forewing, a narrow, continuous red-brown band on the hindwing. On the under surface 4 red-yellow spots are placed in the posterior part of the forewing, on the hindwing the first band is anteriorly white, posteriorly sprinkled with brown scales, hence indistinct, the outer band is light ochre-yellow, basally margined with white, and contains 3 fine black dots. From Bolivia and Peru (Huancabamba, Limbani). — *tripunctata* Weym.

is a form of *ulema* Hew. in the male of which a row of brownish red-yellow spots runs from the costal to the inner margin on the forewing above and is continued to the inner angle of the hindwing as a continuous band, anteriorly broad, posteriorly tapering to a point. 3 small round black spots are placed on this band in the anterior part of the hindwing. The under surface is similar to that of *ulema*, but the bands are broader and much purer white. Peru (Puente de Sigsi in the valley of the Rio Sonchi, 2500 m., June [STUBEL]).

C. albomaculata Stgr. (60 a). May be known by the dull white, bi- or tripartite apical spot on the upperside of the forewing. Beneath similar to *plous*. The ♀ is somewhat larger than the ♂ and has an additional small white spot on the costa. Beneath the apex and the distal margin of the forewing are more strongly marked with silver-white than in the ♂. Bolivia and North Peru. *albomaculata*.

C. cistene Hew. (60 b). Above brown with 6 small golden brown spots in a very sinuous row on the forewing and indistinct spots on the hindwing, which scarcely stand out from the ground-colour. Beneath the species may be recognized by the unusual shape of the brown median band on the hindwing (cf. fig.). Bolivia. — **dymantis** Thieme (= *callipolis* Stgr.) is a form of *cistene* in which 2 or 3 small golden brown spots are present also on the upperside of the hindwing. Venezuela, Colombia and Ecuador. — In the form **generosa** Thieme (= *peruviana* Stgr.) (60 b) the golden brown spots on the upperside of the forewing are larger and across the hindwing runs a half-band composed of contiguous golden brown spots. Peru. *cistene*, *dymantis*, *generosa*.

C. enyo Hew. (= *auriga* H.-Schäff.) (60 c) is characterized by having the upper surface of the hindwing almost entirely golden brown, which colour also extends to the base of the forewing. The under surface is similar in markings to that of *almo* (cf. figure, pl. 60 c), but the apex of the forewing and the entire hindwing are light whitish grey and the 2 median stripes of the hindwing quite narrowly brown and distally bordered with white. From the mountains of Caracas, Venezuela. This form is for the most part only represented in older collections. The Colombian form more recently incorrectly distributed in collections under the name *enyō* is much darker and should be called **almo** Thieme (60 c). The hindwing is dark brown above, distally chestnut-colour, beneath marbled with dark grey-brown. The ♀, which is likewise figured, has on the hindwing a golden brown submarginal band and on the under surface of both wings the greater part of the distal margin broadly golden brown. Colombia, Ecuador, Peru, Bolivia. *enyō*, *almo*.

C. chelonis Hew. (60 d). Similar to the preceding, but the forewing bears only 3 larger spots. Beneath the 2 apical spots are white. In the ♀ these apical spots are contiguous above and the posterior spot, between the median veins, is three times as large as in the ♂. Colombia (Quindiu Pass and Cañon del Tolima, 2500 m.) (FASSEL). — **rubeta** Thieme, a form of *chelonis*, has the hindwing more rounded and the tails shorter, forewing somewhat broader, sometimes with a small fourth golden brown spot at the inner margin. From Merida in Venezuela. — The form **lactefusa** Thieme has the under surface of the forewing entirely milk-white, only a thin brown line crosses the middle of the wing. Ecuador. *chelonis*, *rubeta*, *lactefusa*.

C. iduna Hew. (60 d, erroneously as *marginalis*). Resembles *chelonis* in the forewing, but the 3 spots are white, not golden brown. In the anterior part of the hindwing there is a large, bright red-yellow or golden brown spot, which does not reach the distal margin. Bolivia. — In the form **marginalis** Btlr. (= *marginata* Kirby) the golden brown discal spot reaches the distal margin. Peru (Huancabamba and Cushi). *iduna*, *marginalis*.

C. peruviana Btlr. (60 d) was formerly regarded as a variety of *iduna*. According to THIEME it is a separate species. The white spot between the median veins of the forewing is not bipartite as in *iduna*, but consists only of one spot between the first and second medians. The anal angle of the hindwing is more produced than in *iduna* and the disc almost entirely bright reddish golden brown. The distal margin is only narrowly, the inner margin broadly dark brown. From Ecuador and the coast Cordilleras of Colombia. *peruviana*.

C. procellaria Thieme is the smallest species of the genus and resembles *iduna*, but the forewing is shorter, the hindwing more rounded and the tail much shorter. The white spot between the median veins of the forewing is bipartite as in *iduna*. The 2 white apical spots as in that species. Hindwing dark brown with a ferruginous submarginal spot in the apex, which is posteriorly lost in the ground-colour. From the Aconquija Mountains near Tucuman, North Argentina. *procellaria*.

57. Genus: **Panarche** Thieme.

This genus may be regarded as a connecting link between *Corades* and *Polymastus*. As in *Corades*, the first median vein of the hindwing runs out into a long projecting point and the inner margin of this wing is as straight as in that genus. On the other hand it differs widely from *Corades* in the straight costal and angled distal margin of the forewing and the sharp, pointed teeth of the hindwing, in which respects it approximates more to *Polymastus*. It is, however, easily distinguished by the triangular hindwing, produced into a point at the inner angle, the species of *Polymastus* having the hindwing shorter and broader, with the inner margin rounded. The costal of the forewing is only slightly swollen. The 3 species are rare and are indigenous to the high mountains of Bolivia and Peru.

tricordatus.

P. tricordatus Hew. (Corades t.). Forewing with 2 fine points in the anterior part of the distal margin, its posterior part obtusely dentate; anterior part of the hindwing also obtusely dentate, only the 3 median veins having long points, that of the first median projecting furthest. Above brown, distally lighter, the margins dark brown, forewing with white costal spot, hindwing with a submarginal row of black spots. Forewing beneath red-brown, striated with light yellow, the forewing at apex and the hindwing dark brown with white striation. The latter with several white spots, black margin and black submarginal band. From Mapiri and the Illimani, Bolivia.

callipolis.

P. callipolis Hew. (Corades c.) (60 d). The teeth of the distal margin are not so pointed as in *tricordatus*. Above brown with dark margin. Forewing with a lighter brown submarginal band, proximally bordered by a dark brown dentate stripe, similar to that shown in the figure of the under surface in the middle of the forewing. From Bolivia (Illimani). For *callipolis* Stgr. cf. supra, p. 275, under *C. dymantis*.

anfortas.

P. anfortas Thieme is larger than *callipolis*, the teeth of the hindwing longer. The ground-colour of the upper surface is cedar-wood brown. Basal area and distal margin of both wings dark brown. Beyond the middle of the wing is placed a row of dark brown spots, on the forewing elongate, on the hindwing round. In addition on the forewing 2 elongate spots in the cell and 2 round ones before the apex. Forewing beneath brown with silvery brown submarginal macular band, its proximal edge dentate. Hindwing beneath with brown discal band, before this a silvery half-band and distally a partly silvery, partly brown-dusted submarginal band. From Cuzco in Peru. Rare.

58. Genus: **Bia** Hübner.

An isolated genus, possessing various peculiarities. Palpus moderately long, thinly haired, the terminal joint thin and pointed. Eyes naked. Forewing with the costal and distal margins rounded. Hindwing produced at the inner angle into a point which projects far posteriorly and is placed on the first median vein. In the forewing the costal vein is strongly inflated at the base, the median and submedian less swollen. The cell of the forewing is longer at its posterior than at its anterior margin. On the hindwing there are two hair-tufts (scent-organs) in the ♂♂. One is placed in the inner-marginal fold and is composed of ochre-yellow hairs about 3 mm. in length, which may be erect and diverging or again convergent. The other, at the anterior margin of the cell, consists of short, erect, dark brown scales, which are partly covered by long, smoothly appressed, lighter brown and yellowish grey hairs. Inhabits Surinam and the whole Amazon region as far as Peru.

actorion.

B. actorion L. (60 e). The bright iridescent blue spot at the inner margin of the forewing in the ♂♂ varies in size, in single examples from the Upper Amazon it occupies almost the whole distal margin, in others it is very small or entirely disappears. In the ♀ on the other hand the whole basal half of the forewing nearly to the costal margin is bright iridescent blue. Under surface red-brown, densely covered almost all over with fine light brown or yellowish brown undulate lines. Below the apex of the forewing close to the distal margin is placed a small black ocellus with blue pupil. From Cayenne, Para and the whole Amazon region. The form **decaerulea** Stgr. i. l. (60 e) shows no trace of blue reflection, on the other hand the brownish yellow band is somewhat broader. It occurs among the type-form. — **atalanta** Rebel (60 e), on the contrary, has on the hindwing a very bright dark blue reflection, occupying nearly all the posterior half of the wing. The forewing is without reflection and the brownish yellow band is very narrow. The under surface as in *actorion*. Peru.

decaerulea.*atalanta*.

Additions and Corrections

to the American *Satyridae*.

theodori.

P. 182. **Antirrhaea theodori** Fruhst. is a form of *philaretus* only described in the female, in which, instead of the 4 blue spots which *philaretus* ♀ has on the upperside of the hindwing, only 2 are present, and these are pale grey. The under surface is exactly as in *philaretus*. From the Upper Waupes (North Brazil). — **A.**

apoxyomenes.

apoxyomenes Fruhst. approaches *avernus* Hpffr., but is larger, with broader yellow-white bands on the forewing and more extended blue spotting on the hindwing. Bolivia.

P. 183. *Sinarista adoptiva* Weym. The ♀ of this species has been found by FASSL likewise in the Colombian West Cordilleras, in the Rio Aguaca Valley, at 2000 m. It is but little larger than the ♂, but, like the ♀♀ of *Ant. geryon* and *geryonides*, has broader wings, so that the apex of the hindwing is obtusely rectangular. The point of the tail directed more distally. The ground-colour is somewhat lighter brown, the eye-spots of the forewing are larger, have thicker white pupils and are bordered by obscure red-brown rings. At the costal margin there is further a fourth, small, pupilled ocellus. The under surface is red-brown with a broad band, striated with dark brown, across the middle of both wings. In the distal area 4 white dots on the forewing and one on the hindwing.

protonoë.

In *Caerois chorinaeus* F. the ♀ is about 3 cm. larger than the ♂. — **protonoë** Fruhst. is a form of

chorinaeus in which the male also is larger than the type-form and much darker both above and beneath. Peru.

P. 184. **Tisiphone hyrnethia** *Fruhst.* (Manataria hereina h.), a form of *hercyna*, has the whitish yellow *hyrnethia*. macular band of the forewing so much widened that it occupies nearly a third of the wing and covers the anterior half of the cell. The under surface is lighter than in the type-form and has the white spots more than twice as broad and only in part isolated. Peru and Bolivia.

P. 188. **Taygetis weymeri** *Draudt* should be inserted before *andromeda*, with which the shape of the *weymeri*. hindwing agrees, while the shorter forewing is shaped like that of *sosis* *Hpffr.* Above olive-brown. Forewing with an indistinct brown stripe beyond the middle and both wings with a dark brown distal border $2\frac{1}{2}$ mm. in breadth, before the distal margin a white line, the fringes long, whitish grey with brown dots at the extremities of the veins. The under surface resembles that of *keneza* and *uncinata*, but the dark band before the middle of both wings is scarcely indicated, and the band behind the middle has no sharp angles. The eye-spots are scarcely perceptible on the forewing, on the hindwing they are distinct but very small and mostly free, while in *keneza* they are all placed on brown spots. But the species is easy to recognize by the non-angled forewing. From Guerrero, West Mexico. Flies in August and September.

P. 192, line 17 from below, for	<i>reinoldsi spec. nov.</i>	read	<i>reynoldsi E. Sharpe.</i>
.. 206, .. 2 .. above, ..	<i>bonariensis</i>	..	<i>bonaërens.</i>
.. 208, .. 21 .. below ..	<i>spartaeus</i>	..	<i>spartacus.</i>
.. 219, .. 24 .. above, ..	<i>sericella</i>	..	<i>sericeella.</i>
.. 221, .. 1	<i>agaya</i>	..	<i>ayaya.</i>
.. 234, .. 6	<i>milesi</i>	..	<i>nilesi.</i>

Alphabetical List

with reference to the original descriptions of the forms of the American *Satyridae*.

*) signifies that the form is also figured at the place cited.

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- aemenis Eu. *Hbn. Zutr. Smg. Exot. Schm.* *
- aeracida Lym. *Bllr. Catal. Satyr. Br. Mus.*, p. 171. *
- actorion Bia. *L. Syst. Nat.* 1 (2), p. 794.
- acuta Tayg. *Weym. Seitz, Macrolep.* 5, p. 188. *
- adoptiva Sin. *Weym. Entom. Zeitschr. Frankf.* 23, p. 164.
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- aetherialis Eu. *Bllr. Journ. Linn. Soc. (Zool.)* 13, p. 126. *
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- affinis Eu. *Bllr. Proc. Zool. Soc. Lond.* 1866, p. 469. *
- agatha Eu. *Bllr. Proc. Zool. Soc. Lond.* 1866, p. 492. *
- agathina Eu. *Weym. Seitz, Macrolep.* 5, p. 219.
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- albocincta Lym. *Hew. Journ. Entom.* 1, p. 157. *
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- almo Cor. *Thieme, Berl. Ent. Zeitschr.* 51, p. 223.
- alope Cerc. *F. Ent. Syst.* (3) 1, p. 229.
- altis Lym. *Weym. Stübels Reise*, p. 109. *
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- amalia Pier. *Weym. Stett. Zg.* 1885, p. 285.
- ambigua Eu. *Bllr. Proc. Zool. Soc. Lond.* 1866, p. 472. *
- ambiorix Neos. *Wallgr. Wien. Ent. Mon.* 1, p. 36.
- ambra Eu. *Weym. Seitz, Macrolep.* 5, p. 198. *
- ampelos Coen. *Edw. Butt. N. Amer. pl.* 25.
- amussis Ped. *Thieme, Berl. Ent. Zeitschr.* 50, p. 78. *
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- andromeda Tayg. *Cr. Pap. Exot.* 1. *
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- angusta Arg. *Weym. Seitz, Macrolep.* 5, p. 233.
- anina Ped. *Stgr. Iris* 10, p. 128.
- antissa Pol. *Thieme, Berl. Ent. Zeitschr.* 51, p. 141.
- antonoe Eu. *Cr. Pap. Exot.* 1, pl. 60. *
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- assarhaddon Pron. *Thieme, Berl. Ent. Zeitschr.* 51, p. 196. *
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ziza Eu. *Bllr.* Lep. Exot. 1. pl. 4. *

5. Family: Brassolidæ.

The genera of this subdivision of the Nymphalids *sens. lat.* belong exclusively to the Neotropical faunistic region. Representatives of the family are entirely absent in the Ethiopian Region, on the other hand they stand in surprisingly close relationship to the Indo-Australian Amathusiids, which were formerly called "Morphids of the Old World", but would be more correctly regarded as "Brassolids of the Old World". Indeed Amathusiids and Brassolids have so much in common that it will probably be only a question of time to see them united, and like their Indian allies their extremes in one direction approach the Satyrids (*Opoptera*), while others form a transition to the Nymphalids (*Narope*). — In the anatomy of the clasping-organs they are much more closely allied to the Satyrids than to the Neotropical Morphids, with which they were formerly united. Especially suggestive of the Satyrids are the slender, dentate valve and the pointed uncus (*Opsiophanes*) with its delicate lateral clasps, though the uncus of one genus (*Dynastor*) rather recalls the Morphids. But whatever we adduce by way of comparison we find the characters fluctuating; thus also the strongly developed precostal, to which Dr. SCHATZ attached so much importance, the beginning of which we find again in the Morphids and which on the other hand in the Brassolid genus *Caligo* begins to disappear. At the same time the Brassolids can be definitely separated from the Morphids by having the cell of the hindwing closed, in which they also differ from the Amathusiids, where the discocellular is only exceptionally present or is only rudimentary.

The relations of the Brassolids to the neighbouring families are of different kinds. From the Nymphalids in the restricted sense, which the antennae and the neurulation of the forewing suggest, they are separated by the ocellated markings on the under surface, by the palpi, and before all by the quite different larvae, which bring them nearer to the Satyrids. From *Morpho*, with which they were formerly united, they differ especially in the elongate, naked larva, which lives on Monocotyledons, and bears no resemblance to the short, woolly, Dicotyledon-feeding larvae of *Morpho*. From the Satyrids, which they approach in the shape of the larvae, the Brassolids are separated chiefly by the gigantic size (*Caligo*), the thickness of the body (*Brassolis*) and the structure of REUTER's "basalfleck"; in addition the veins of the forewing are not inflated at the base.

All the Brassolids agree in the brilliant eye-spots on the finely striated under surface, which are most strongly developed in *Caligo*. Only in the genus *Narope* is this character indistinct, the eye-spots being entirely absent or reduced to dots.

With the exception of one genus (*Narope*) the Brassolids embrace almost exclusively species which are either above medium size or even furnish us with the giants among the South American butterflies.

The colouring is as a rule dull, uniform and blurred, not rarely with blue and blue-green iridescent gloss; only a few species are brightly and sharply marked, while none have a very elaborate pattern. Nevertheless some species of the genus *Caligo* are among the most sought-after show specimens in collections, and the sight of a wonderful blue-tinged *Caligo beltrao* or of the amethyst-coloured *Caligo atreus* with its yellow ornamental bands is one of the most beautiful memories of a tropical traveller. They form a characteristic of the landscape when the sun-loving *Morpho* have long ceased their flight and as harbingers of the night they leave their hiding-places and take up their posts like isolated sentries at the edge of the evergreen forest. Even more than the Amathusiids the Brassolids prefer the dusk of the moist, hot primeval forest; only a few *Opsiophanes* occasionally even in the middle of the day are attracted by the so-called "Waldschenken" in the dry underwood (Capoeira) where they enjoy themselves at the sap flowing out of the bushes.

One genus (*Dasyophthalma*) can best be compared with Indian *Elymnias* or *Zeuxidia*, as its members make their appearance in the early hours of the day, fly up and down unsteadily several times, turning their iridescent blue or greenish upper surface for a moment to the spectator, but then again disappear slowly and mysteriously in the forest-gloom. They have also in common with the *Zeuxidia* a preference for over-ripe bananas, with which they can be baited in large numbers. They then sit in a living mass in company with *Caligo beltrao* or *Eryphanis reevesi* round the suspended fruit, mostly underneath it, with the wings closed, turning the ocelli to the spectator. When anyone approaches they begin to flap their wings restlessly, before taking to flight. Even the *Caligo* species, in spite of their great size, are difficult to detect in their day hiding-places when, accidentally startled up, they settle quite near the ground, concealing themselves either on it or on tree-trunks, as the peculiarly irrorated and reticulated under surface, readily fitting in and harmonizing with the aspect of the trunk, affords them complete protection in spite of their large "owl-eyes".

Like all true forest species the Brassolids scarcely ascend above the actual zone of the densest vegetation. The species of *Caligo* and their nearest allies never exceed elevations of 1000 m. In their geographical range they agree entirely with the Morphids, not extending northwards beyond Mexico nor southwards beyond Rio Grande do Sul and Paraguay. Their headquarters are the eastern slopes of the Andes, especially the

region of the source of the Amazon and also Colombia, from whence alone 30 species are known, thus only four less than from the whole of Brazil. Ecuador again has 28, Guiana 16, Central America 17 species.

The egg of the Brassolids is spherical, more or less sharply ribbed, occasionally somewhat flattened above and beneath (*Eryphanis*). Round the greatest circumference runs sometimes a narrow red-brown stripe.

Larva so far as known gregarious when young, afterwards often solitary, sometimes in common nests on bananas, palms and other higher Monocotyledonae. Some occur in a brown and a green form (GOLLMAR), others differ in colour according to their age. In repose they mostly rest at full length between or under the gigantic leaves of the food-plant, concealed by day. The head is rather flat, broadest beneath, and is kept closely appressed to the support, the mouth being directed forward. The head bears at the upper margin of the face some spines which when at rest are inclined posteriorly and a dense covering of hairs ("poodle-head"). Along the dorsum run longitudinal lines recalling those of the Satyrids; sometimes there are very fine, quite short hairs, often small tubercles and in *Caligo* simple, spinous points and isolated setae. The pupa thick, stout, short, angular, anteriorly convex, cremaster very thick, fastened firmly and broadly to the food-plant, so that the pupa can only be detached with difficulty. Only one moveable segment. In *Narope* the abdominal part of the pupa is compressed on the ventral surface and the dorsum bears some protuberances. The colour of the pupa is at first green, afterwards earth-grey or brownish. The pupa of *Brassolis*, which remains in the nests, is Bombycid in form and differs considerably from the other genera.

The scent-organs of the ♂♂ consist of pads or mealy spots on the underside of the forewing, hair-pencils in the folded hindmargin, bristles or hair-tufts at various places on the upperside of the hindwing, often larger pencils in the cell; the latter are sometimes imbedded in pockets formed of the wing-membrane and are eversible and expansible in a stellate form. Head and body robust, the latter as in the Hestias and Morphids small in comparison to the wings. Eye large, convex, naked or hairy; the three-jointed palpus in most cases extends beyond the head, is densely scaled and varies in the degree of hairiness. Beneath the palpus frequently bears dense, shaggy hair, the 2nd joint sometimes with hair-tufts. The "Basalfleck" of REUTER covering $\frac{1}{2}$ — $\frac{2}{3}$ of the basal joint on the inner side, oval, at the distal end rounded, the swelling in *Opsiphanes* recalling that of *Discophora*, occupying almost the entire basal spot, sometimes with larger, sometimes with smaller rounder scales; these are densely placed, parallel and erect. At the distal end of the Basalfleck there are often grooves which are covered by the cones and scales.

Like the Indian Amathusiids and the Neotropical Morphids the Brassolids are also very susceptible to climatic and local influences; they show a series of gradations on the Amazon from its lower to its upper course and nearly every Brazilian province has its own *Opsiphanes* race, a circumstance to which the author of these lines first called attention. Seasonal forms, however, have not yet been detected with certainty; this is connected with the time of appearance of the butterflies, which in general have a short period, beginning with the spring of the southern hemisphere and ending in the middle of the summer. We have only certain knowledge as regards southern Brazil, but it is probable that in the true tropics some species produce a succession of generations. If VON BÖNNINGHAUSEN is correct the Brassolids split up into two unequal groups: namely those without a forked tail in the larva (only two genera, *Brassolis* and *Penetes*) and those with tailed larva (all the rest).

The originals of the figures, like those of the following family (the Morphids), are from the FRUHSTORFER collection at Geneva (Florissant). Some descriptions have been taken from the well-known work „Das Tierreich“ of the Academy of Sciences (Director, Prof. SEITZ) by kind permission of Herr STICHEL, who was the first to work out fully the family of the Brassolids.

I. Subfamily: **Brassolininae.**

Larva without tail-fork and without horns on the head.

1. Genus: **Brassolis** F.

This genus, from which the family is named, differs the most widely of any from the normal Brassolid habitus. This is seen chiefly in the compact, robust build, the thick body almost recalling the Heterocera, strong, broad head with quite short palpus, elongate, anteriorly truncate antennal club, such as otherwise occurs only in *Dynastor*, broad and hard thorax and very thick abdomen.

The few species which belong here are medium-sized, powerful butterflies with dark-coloured wings traversed by an orange band, the distal margin slightly concave in the ♂, convex in the ♀. The uncus according to GODMAN a simple hook, without lateral appendages; valve short, compact, at the distal, dorsal end slightly dentate. Egg spherical, with shallow, sometimes anastomosing longitudinal ribs of somewhat irregular course. Larva cylindrical, thickest in the middle, head without processes, beneath broad, strongly hairy. Anal points wanting, instead of them there are posteriorly 2 wart-like processes. They live gregariously, often in hundreds in large, bag-like nests on palms; the pupa is short and stout, without strong angles or protuberances, suspended by the cremaster.

B. sophorae, originally described from Guiana, from whence LINNÉ obtained his name-type, splits up into four known local forms, which are distributed on the Atlantic side to Rio Grande do Sul, on the Pacific certainly as far as Peru. All agree in bearing a broad, obliquely placed, ochreous longitudinal band on the forewing and a submarginal band on the hindwing, in the ♂ continuous, in the ♀ more indistinct and broken up into separate patches. Under surface lighter, the ferruginous spot in the basal part of the cell more distinct; cell-band in the ♀ breaking up into spots. Hindwing without distal-marginal band, dotted and striated with whitish, in the ♂ with ferruginous spot in the basal part of the cell; forewing with a subapical ocellus, hindwing with a larger ocellus below the costa and another between the lower median veins. — Larva thickest in the middle, head large and without thorns or spines, short dorsal hairs arranged in tufts, without tail-points, but with small excrescences. On palms, in nests of thick silk placed at the base of the fronds or right at the end of the stem under the covering of the palm, concealed by day. Pupa smooth, brown, suspended. — **sophorae** *sophorae*. *L.* (62 a) differs considerably in the male from the ♀, which we figure, in the peculiar shape of the wing, especially in having the costal margin of the forewing even more concave than in *astyra* (62 a). Hindwing anally narrowed, produced into an obtuse point. Rather common everywhere and in the evening from about 5 o'clock buzzing round the banana thickets near human settlements after the manner of the Sphingids. — In **lurida** *lurida* *Stich.*, from Colombia, the ground-colour is duller, the band of the forewing lighter, in the ♂ posteriorly narrowed, and ending in a point at the hindmargin. Band of the hindwing nearer to the end of the cell, running out along the lower median vein. On the underside of the hindwing there is a third eye-spot between the upper and middle median veins. — **vulpeculus** *Stich.* Body anteriorly and posteriorly fox-red. Wings paler than in *vulpeculus*. typical *sophorae*, the band of the hindwing tinged with reddish at the costal margin and posteriorly, in the cell somewhat broader, then of uniform breadth to the inner margin. The cell also tinged with fox-colour in its basal part, so that the dark median spot stands out sharply; the median also faintly dusted with reddish. In the apical part 3 small white spots. On the hindwing the ochreous band before the distal margin is considerably broader than in typical *sophorae*. Paraguay, Argentina. According to 2 examples in coll. FRUHSTORFER, the hitherto unknown ♀ has the cell of the forewing also basally somewhat more broadly and paler ochre-yellow, the band of the hindwing broader, but weaker. Underside of the forewing with the longitudinal band considerably reduced; hindwing more delicately irrorated and as is typical of Paraguay butterflies, pale earth-coloured, lighter than in examples from more northerly localities. — **ardens** *Stich.*, from Ecuador and southern Peru and probably also occurring in Bolivia, has the forewing in the ♂ 40—43, in the ♀ 49 mm in length. Band of the hindwing bright reddish ochreous, in the region of the hinder angle suffused with fiery red-brown. *ardens*.

B. astyra differs from *sophorae* in having the transverse band of the forewing anteriorly at the end of the cell broken into wedges, the part placed in the cell abbreviated or interrupted by the ground-colour. — Two geographical races: **astyra** *Godt.*, from central Brazil, distributed from Espiritu Santo to Santa Catharina. *astyra*. Hindwing near the distal margin without or with only quite faint traces of a band (name-type); occasionally (in examples from Santa Catharina), however, with a very distinct band (f. **dimidiata** *form. nov.*). Black-brown, forewing with ochreous yellow-brown oblique band, the costal part of which is forked and clouded or darkened. Whilst the distal arm nearly reaches the costa, the proximal is abbreviated or broken up into brown spots. Hindwing mostly unicolorous or with only faint traces of distal bands; ♀ with the ground-colour paler, the band of the forewing a little lighter. — Egg spherical with shallow longitudinal ribs, often running into one another; larvae in bag-shaped nests, a large number together, brown with light longitudinal lines. When they are somewhat grown one can hear the sound of their feeding and can track them by this means. The adult larva reaches 8 cm. in length, with reddish markings on the head; the pupa is smooth, slightly compressed ventrally, either dark brown with black, yellow-edged stripes or bright yellow with lighter stripes and patches. — **philocala** *Stich.* (62 a as *astyra*). Hindwing with distinct rust-red band near the distal margin. The hitherto undescribed ♀ (type in coll. FRUHSTORFER [Geneva]) much larger than the ♂, round-winged like that of *sophorae*, but of greater wing-expanse. Cell-spot on the lower part before the apex reduced. Band of the forewing much narrowed anally. Hindwing occasionally with the rust-red submarginal band entirely absent. Habitat-Rio Grande do Sul, where according to MABILDE the larva occurs from April to November on various palms and lives in an oval bag of 30—40 cm. in length and 10 cm. in breadth, which contains three or four inner divisions. In this the larvae remain for 7—8 months, packed one above another like sardines in a case, sometimes 5—600 specimens together. — **haenschi** *Stich.* shows the band of the forewing bright rust-yellow and has no undulate distal marginal line beneath. Ecuador. — **maritima** *Stich.* has the band of the forewing paler and distally less broken than in *haenschi*; under surface with undulate, in places obsolescent line before the distal margin; the ocelli on the under surface are also less bright, more pale and blind. Venezuela. *philocala*.

B. isthmia *Bates*, from Central America and Colombia, has the wings dark brown above, the forewing with a pale yellow-ochre oblique band, 9—10 mm. in breadth, with the proximal edge irregularly defined, somewhat dentate and bounded by the submedian. Beneath the oblique band is paler, only distinct beyond the cell, in the cell a rounded brown spot. Hindwing above brown, in the ♂ only a narrow ferruginous patch along the lower median vein, in the ♀ without markings. *isthmia*.

B. granadensis *Stich.* (62 a) closely approaches the preceding species, but is somewhat larger. Forewing with broad ochre-yellow oblique band, on the lower discocellular a black-brown spot. Hindwing with only *granadensis*.

quite indistinct traces of a reddish submarginal band, but with conspicuous dark grey mealy spot below the cell between the submedian and the first median vein. Beneath similar to *isthmia*, but the band of the forewing much broader and darker. ♀ differing from that of *isthmia* in the darker ground-colour and the more brilliantly coloured band of the forewing. Colombian specimens are somewhat larger than those from Ecuador. Colombia (Muzo?); Balzapamba in Ecuador to the west of the Andes (750 m.).

ornamen-
talis.

B. ornamentalis Stich. Forewing above with two angled yellow spots in the lower part of the cell, placed one above the other in the shape of a hammer. Beyond the cell a rather broad yellow transverse band, reaching the inner margin. Hindwing ochre-yellow as far as the distal margin, before the margin indications of a dark lunulate line. The colouring of the under surface shows through distinctly. Brazil (Pará?).

2. Genus: **Penetes** Westw.

Closely approximates to *Brassolis* in the style of its colouring and also somewhat in the concave shape of the distal margin of the forewing, so that it is not improbable, as VON BÖNNINGHAUSEN suspected, that the larva approaches that of *Brassolis* and is not forked at the tail. The genus is chiefly characterized by the shape of the forewing, which in both sexes has the apex strongly produced and the distal margin deeply hollowed in the middle. In the forewing the cell is obliquely closed by the three discocellulars, which run in the same direction and nearly straight, the anterior only a little shorter than the middle and posterior, which are of equal length. Precostal cell of the hindwing rather large. Precostal vein simple, only at the extremity proximally curved, the cell likewise obliquely closed by the feebly curved lower discocellular. The genus is monotypical and is confined to Brazil.

pamphanis.

P. pamphanis Westw. (67 b). ♂ above deep dark brown, with large, dull rust-brown spots, not sharply defined, in the disc of the forewing and more or less obscure rust-brown diffuse spots before the apex of both wings. Hindwing with darker veins, glossy grey at the hindmargin; a black-brown hair-pencil placed on the submedian in an extended, scaleless area of a shining, horny appearance. Type from Minas Geraes, in my collection from Espiritu Santo, São Paulo, Parana, Rio Grande do Sul, and a few examples which I myself captured in Sa. Catharina.

3. Genus: **Dynastor** Westw.

This genus is characterized even more than *Brassolis* by the robustness of the body, especially the thorax and abdomen, and the broad wings. From the nearly allied *Opsiphanes* it chiefly differs only in the short, appressed palpus, the short lower discocellular of the forewing, and in having the 3rd subcostal vein arise nearer to the 4th and the upper median vein further from the middle one. ♂ without distinct scent-organ; the eye-spots of the under surface reduced to dots or entirely absent. Both wings very broad, the forewing with strongly curved costa, the subcostal narrowly but distinctly separated from the costal, the distal margin somewhat ventricose, the inner margin nearly straight. Median and submedian slightly thickened at the base, but not strongly inflated as in the Satyrids. Hindwing with the distal margin uniformly rounded, the apex round and the costal margin fairly straight. Cell moderately broad, about half the length of the wing. — Valve basally thickened, in the middle narrowed, distally again widened, chitinized and sharply serrate. Penis relatively short. Saccus posteriorly arched. Uncus strikingly broad, recalling that of the Morphids, its lateral clasps shorter and more than twice as strong as in *Opsiphanes*, valve considerably narrowed posteriorly, distally with long, unequal points. — Of the 3 species belonging here the celebrated *D. napoleon* is unquestionably one of the most magnificent of all the butterflies. The range of distribution of the genus extends southwards to Paraguay, northwards to Mexico.

darius.

D. darius is the most widely distributed species of the genus, occurring everywhere from Guatemala to Bolivia and from Trinidad through the whole of Venezuela and Brazil to Rio Grande do Sul, which is probably explained by the wide distribution of the food-plant. Two directions of variation may be recognized, of which the Andean and purely tropical branch shows large, nearly quadrate apical patches on the underside of the hindwing, whilst the Brazilian subform bears rounder, ocellated costal patches. The hitherto unobserved Paraguay form belongs, strange to say, to the tropical Andean branch, not to the Brazilian. — **stygianus** Btlr., originally described from Costa Rica, is recorded by GODMAN and SALVIN also from Guatemala, Nicaragua, Panama, Colombia, Ecuador and Bolivia, as well as from the Lower Amazon, and in coll. FRUHSTORFER there are 2 ♂♂ from Honduras, which WITTKUGEL discovered in San Pedro Sula. Probably the Trinidad race is also identical. I have no ♀♀ from the purely tropical districts; but according to the material in my collection the ♂♂ show all the differences which STICHEL described as follows in the „Tierreich“: “Larger, with sharper contrasts in colouring. ♂: half-band of the forewing more complete, purer yellowish white, at the upper radial more strikingly diverted from its course, its posterior part being pushed further towards the distal margin. Spot in the apex larger, mostly connected with a small band, the other 3 isolated spots placed

stygianus.

beyond the half-band large, elongate, distally uncertainly defined. Zigzag band of the hindwing composed of larger pointed curves, anteriorly whitish, posteriorly grey-yellow with olivaceous tone; costal margin broadly whitish yellow; border at the distal margin narrow but distinctly defined, anteriorly coloured like the costal margin, from the middle onwards grey-yellow. Under surface of the forewing with small, sharply marked, elongate black costal spot immediately at the apex, the half-band very little noticeable, the three isolated spots more indefinite, the posterior one occasionally cleft longitudinally. Anterior eye-spot of the hindwing extraordinarily broad, flattened, rectangular with the short sides rounded. It occupies nearly or more than one third of the interneural space, anteriorly and posteriorly touches the costal and subcostal for its entire breadth, is at these long sides only distinguished from the ground-colour by the absence of the striation, but at the short sides shaded with dark brown; its central part is longitudinally somewhat darker and traversed by 2 lines of small white spots. Central eye-spot similarly developed, only somewhat shorter, behind it sometimes a white-centred ring-spot. Posterior eye-spot as in the typical subspecies, but mostly larger and more sharply marked. Distal margin of the hindwing strongly undulate." The ♂♂ from Surinam in my collection are not identical with *stygianus* Btlr. from Honduras, differing in the somewhat narrower whitish yellow band and the smaller patches on the forewing, also in the darker, deeper coloured under surface. But still less do they agree with the figure of *anaxarete* Cr. ♂ (*anaxarete* Stoll ♀), which has strikingly small spots on the forewing and relatively large triangular markings on the hindwing. In the ♀ which STOLL figures the oblique band of the forewing is even broken up into separate small spots hardly as large as lentils, and as HÜBNER also represents a ♂ similarly small-spotted it would seem that for some time only such peculiarly coloured, aberrant specimens were brought to Europe from some particular locality. — *mardonius* subsp. nov. (62 b) closely approaches *mardonius*. *anaxarete* Cr. in the narrower, almost uniformly broad band of the forewing, and also agrees with it in the shape of the nearly rectangular costal patch on the underside of the hindwing. On the other hand the zigzag band on the hindwing above is twice as broad and the under surface, in accordance with the general character of the Paraguay butterflies, is paler and without the purple dusting of *anaxarete*. Paraguay, from two ♀♀ in coll. FRUHSTORFER. — *darius* F., described from Brazil, is the commonest subspecies in collections; *darius*. both sexes bear a relatively large double patch of greenish white on the upperside of the hindwing, on which are placed regular series of undulated, greenish, pointed curves. ♀ sometimes enormously large. Espiritu Santo, Rio de Janeiro, distributed to Santa Catharina. — *icterica* Stich., from Rio de Janeiro, is smaller than the type-form, the band and the three isolated spots on the forewing yellow instead of whitish. Zigzag band of the hindwing and a narrow marginal stripe at the distal margin anteriorly yellow, posteriorly dirty green-yellow. Larva yellow-brown, later grey-brown or green, longitudinally striped, with brown head, which in the adult larva bears short hairs at the margin. Along the dorsum a series of round dark spots, enclosing light dots anteriorly; small, bristle-bearing tubercles are scattered over the surface and the anal end terminates in a forked tail. On Bromeliaceae; full fed in 2 months. Pupa light green with brownish longitudinal stripes and dark shades and speckling; yields the butterfly in 12 days (W. MÜLLER). — *faenius* subsp. nov. inhabits Rio Grande *faenius*. do Sul and is somewhat smaller than *darius* from Central Brazil, with somewhat smaller median spots on the upperside of the forewing, and the hindwing lacking the large yellowish white costal patches, in place of which there are greenish diffuse spots, which do not differ appreciably from the adjoining, irregularly shaped greenish pointed curves. The under surface agrees somewhat with that of *mardonius*; it shows the typical paler colouring of all the Rio Grande butterflies. ♀ dusted with almost pure white, particularly in the distal area. All the ocelli obsolescent, the median eye-spot in most examples entirely absent. Claspings-organs described in the generic diagnosis. From three ♂♂, two ♀♀ from Candelaria in coll. FRUHSTORFER. According to MABILDE there are two generations. The larva is green with two figure-shaped marks on the head and appears in January and February, and again July and August, on Ananas and bananas. It changes into a green pupa in March — April, and August—September, and after 30 to 60 days produces the common and widely distributed butterfly.

D. macrosiris, in contrast to the preceding species, is extremely rare; only a few examples are known, mostly of only one sex. — *macrosiris* Westw. comes from Cayenne; it is black above with a slight violet-brown tinge, the distal border lighter, costal margin striated with black and white. The oblique band of the forewing, placed distally to the cell, is narrow, whitish, terminating at the first median vein, but continued as two small, isolated whitish spots. Distally to the oblique band two black, lighter-margined spots showing through from beneath, anteriorly with two small, crescentic or obtusely sagittate white spots placed near the apex. Hindwing with lighter distal border, towards the apex widened into a whitish spot. — Of *strix* Bates (62 b) only ♀♀ are yet known. The name-type was from Guatemala, but it was afterwards found also at Cordoba, Mexico, by HÖGE. Our figure is from a Honduras specimen in the FRUHSTORFER collection. Deep dark brown, costal margin of the forewing striated with white as far as a whitish oblique band placed beyond the cell, continuing which there is an elongate white spot. In the apical area 3 small white spots. Hindwing with whitish apex, otherwise uniformly dark. Under surface very characteristic, particularly in the irregular shape of the ocelli between the apex of the forewing and the oblique band. — *hannibal* Oberth. came from Colombia and differs in having a more prominent white area on the forewing from *macrosiris* Westw., the type of which OBERTHÜR acquired

pharnaces. with BOISDUVAL's collection. — *pharnaces* *Stich.* is smaller than the preceding subspecies. The white oblique band on the upperside of the forewing somewhat broader, more sharply defined, although somewhat dusted at the proximal side, posteriorly terminating obtusely before the middle median vein and not running out towards the distal margin as in *macrosiris strix*. The single spot posterior to it much reduced. Hindwing with narrower white bordering. On the under surface the transverse striation throughout coarser, on the forewing red-brown; it disappears beyond the cell and in the distal area, in the submedian interspace there is only an indistinct shading. In the cell of the hindwing and beyond it the striation is widened into narrow stripes and in places reticulate, the ground-colour of the wing almost rust-red instead of yellowish. The elongate eye-spot in the costal area light red-brown, less sharply expressed, the other two ocellated spots in the radial and lower median cellules also only indistinct. Border at the distal margin narrowly greenish. Only 1 ♂ from Bolivia (Coroico, Yungas, at 2000 m.) known.

napoleon. **D. napoleon** *Westw.* (62 b) seems to be an archaic, nearly extinct species, exclusively confined to the state of Rio de Janeiro, and even there only recorded from Petropolis; from time to time the splendid butterfly has been successfully bred from the larva. The larva, although known for over 30 years, has not yet been described. According to VON BÖNNINGHAUSEN it lives on one of the Bromeliaceae, with non-dentate leaves. ♀ considerably larger than the ♂, which we figure, the underside of the hindwing with somewhat lighter orange marginal area, as in *darius* *F.* Forewing, however, with black median area, hindwing throughout ochre-yellow, dusted with lighter near the base. The black veins stand out very sharply against the ground-colour.

II. Subfamily: Caligoninae.

Larva with forked tail and with horns on the head.

4. Genus: **Dasyophthalma** *Westw.*

A small but interesting genus, which in general aspect and also in its habits recalls the Indian *Thaumantis*, particularly *lucipor* and *odana*. Only one species (*creusa*) has the colouring darker. In the densely haired eyes *Dasyophthalma* differs from all the other Brassolids. Structurally it approaches the genus *Caligo*, but the precostal cell is strikingly broader, especially considering the smaller size of the body. Head and body more slender than in the preceding genus. Antenna less than half the length of the wings. Forewing triangular with the inner angle rounded, hindwing in the ♂ with the apex pronounced and the distal margin undulate. Wings above black or quite dark brown, sometimes with a bright blue reflection, the under surface with pupilled ocelli. The ♂ bears on the upperside of the hindwing a scent-spot at the posterior margin of the cell. Like its Indian relative, *Thaumantis*, the species of *Dasyophthalma* exclusively inhabit dense forests, where they always keep near the ground, only leaving the damp cover when baited with hung up bananas. One species (*rusina*) I have never seen flying at all; all my examples I owe exclusively to this bait, which they visit together with *Eryphanis reevesi*, *Prepona* species and occasionally a *Morpho catenarius*. Probably they have all only one brood. According to my recollection they appear in Santa Catharina in February, only worn examples are still to be taken by the end of March and at the beginning of April they disappear completely. Concerning the early stages nothing further is known than that the larva lives on bamboo. Distribution: central and southern Brazil.

creusa. **D. creusa** splits up into two local races: **creusa** *Hbn.* (62 c), only known as yet from Santa Catharina and Rio Grande do Sul, appears to be very local, but to occur in abundance in suitable localities. My collector, JULIUS MICHAELIS, and I myself captured nearly 1000 examples in the course of 2 years at Theresopolis and in the valley of the Capivary River. At Blumenau it seems only to occur sparingly and in Rio Grande, at the extreme limit of its range, it is one of the greatest rarities. I possess no ♀♀ from Rio Grande. The upper surface is black, the forewing traversed from the apex to the middle of the inner margin by a bone-yellow gradually widening oblique band. The ♀, of which we figure the under surface, is considerably larger than the ♂, with broader bands, beneath paler grey-green. Upper surface: hindwing only with two or three yellowish splashes in the middle of the costal margin. The median band of the forewing more vertical, broader than in the ♂, less pure yellow, more greenish, connected with the costal border by a transcellular row of indistinct spots. Before the apex of the cell on the hindwing somewhat dusted with greenish. ♂ with long yellowish hair-tuft at the basal part of the cell of the hindwing. Flies February to April. *creusa* is par excellence a visitor to sweets and comes at any hour of the day to hung-up bananas; frequently it is even tempted at night by the sweet, rotting fruit and I found it repeatedly as a not particularly welcome addition in the killing bottles in which I was taking the baited Heterocera. — *baronesa* *Stich.* is a not sharply differentiated local form discovered by my collector J. MICHAELIS in Espiritu Santo, and apparently also occurring in Rio de Janeiro, where according to VON BÖNNINGHAUSEN it is not very rare at Petropolis. ♂ distinguishable from

creusa by the more complete yellowish median band on the upperside of both wings. ♀ scarcely differing above, beneath with smaller and more regular oval median ocelli.

D. rusina may be divided into two local races. The species is everywhere rare and is distinguished by the brilliant, intensive deep blue reflections on the basal part of the forewing and the median area of the hindwing. *rusina* Godt. (= *delanira* Hew. ♀) is only certainly known as yet from Santa Catharina. ♂ with black hair-pencil near the base of the hindwing. The light band on the forewing runs parallel with the distal margin and is continued in the same direction across the hindwing. — **principesa** Stich., discovered by MICHAELIS in Espiritu Santo, seems to occur also in Rio de Janeiro, where it was observed on the Corcovado and at Petropolis by VON BÖNNINGHAUSEN, who further states that the larva lives on bamboo. Quite resembles the typical *rusina*, except that the light band on the wings is somewhat less broad, on the forewing sometimes widened in the middle, and the blue reflection on the hindwing more extended. Under surface in both sexes lighter throughout than in *rusina*, the almost white median band without darker orange-coloured bordering, the distal area not grey-brown as in *rusina*, but distinctly divided into two parts, the submarginal part reddish brown, the distal predominantly striated with whitish grey.

D. vertebralis Bthr. (62 a) is a sharply differentiated species, and was captured together with *creusa* in Espiritu Santo by J. MICHAELIS, so that the locality "Para", erroneously given by its author, has been corrected. Under surface as in *creusa* with three large red-brown, black-ringed median ocelli, placed in a light yellowish patch. Band of the forewing narrow, oblique, composed of spots. Under surface of the hindwing with 3 ocelli: the 1st in the middle of the costa, the 2nd distally to the cell, the 3rd in the posterior median cellule. ♀ larger, with broader wings and duller colouring, so that the striae of the under surface show through. The band of the forewing runs more steeply.

5. Genus: **Opsiphanes** Westw.

Differs from *Caligo* in the more pointed and not so excessively large wings, the larger precostal cell and the relatively stronger body, from *Brassolis* in the longer palpi. Head large, with strongly rounded eyes, frons short, palpus on the underside densely clothed with bristly hairs, upcurved in front of the face, extending but little beyond the head. Antenna gradually thickened, nearly half the length of the costa. Thorax very broad and strong. Forewing mostly rather pointed, the distal margin usually somewhat concave; inner margin straight. Subcostal five-branched, branches 1 and 2 arising before, branch 3 considerably behind the end of the cell, the fourth running into the apex, short-stalked with the fifth. Cell of the forewing short and broad. Hindwing almost round, only a little elliptical, with the apex rounded. The scent-organs of the ♂♂ are hair-pencils on the upperside of the hindwing, which can be spread out in a stellate form. Abdomen powerful, in the ♂ with lateral protuberances. Clasp-organs Satyrid-like, extremely simple. Uncus slightly curved, with 2 lateral clasps, harpe similar to that of the European *Karanasa* (= *Satyrus* of the *huebneri* group, vol. I, p. 127), proximally somewhat widened, in the middle narrowed, distally with projecting ventral point. Egg according to W. MÜLLER spherical, finely ribbed. The larva appears after 10 days, and when young is brown, striped with yellow or red, with black head. When full-grown the head shows a crest of posteriorly directed horns and the face is striped with red-brown. Body thickened in the middle, with 12 longitudinal lines, terminating posteriorly in a forked tail. The larvae live on bananas and rest on the underside of the gigantic leaves, along their midrib. Pupa less compressed than those of the preceding genera, green-yellow, the wing-cases with brown margins and stripes and with a silvery spot. According to Dr. HAHNEL some species emit a scent of vanilla. They remain all day among the lower branches and round the trunks and are fond of congregating on fallen fruit. Some species can be baited with bananas. The species of the *batea* group prefer the light undergrowth, where they are found in the so-called "Waldschänken", i. e. on tree-trunks which exude sweet or fermenting sap. Dr. HAHNEL also met with them even at early dawn near human habitations on refuse, about which they flew restlessly.

Copulatory organs, judging from those of *O. invirae remoliatu*s Fruhst., remarkably Satyrid-like, scarcely differing from those of the Palearctic *Eumenis*. Uncus hook-shaped, slightly bent downwards, two lateral clasps extremely delicate; valve quite regularly of the simplest structure, basally somewhat thickened, but not so markedly as in the genus *Dynastor*, slightly incised in the middle, the ventral distal end projecting as in *Eumenis cordula*, the dorsal somewhat retracted, slightly chitinized, with two excrescences of unequal size. The whole ventral part of the valve long-haired. Penis very broad, saccus quite normal, rather long, its proximal end not appreciably widened.

Four groups, of which *Opoptera* is so nearly entitled to generic rank that it is only here treated as a sub-genus because its author so regarded it and in order to avoid splitting up a very natural genus. *Catoblepia* on the other hand is only maintained on account of the secondary sexual characters, as there are no constant structural differences at all.

Precostal cell of the hindwing longer than broad, **Opoptera**.

Precostal of the hindwing higher than broad, **Opsiphanes**.

Cell of the hindwing narrow, middle and lower discocellulars nearly straight, **Catoblepia**.

Cell of the hindwing narrow, middle and lower discocellulars quite weakly curved, **Selenophanes**.

Group *Opoptera* *Aur.*

The species of this interesting little group strongly recall Satyrids in their thin, delicate wings. The genus, or rather subgenus, as which its author introduced it, was formerly united with *Opsiphanes*, but is rightly separated on account of the broader precostal cell of the hindwing. Otherwise *Opoptera* differs from typical *Opsiphanes* also in having the cell of the forewing strikingly broad and that of the hindwing short, relatively narrow distally. The precostal cell of the latter is longer than broad. Head moderately small, with strongly rounded, naked eyes and hairy frons. Tongue strong. Palpus beneath with bristly hairs, extending little beyond the head. Antenna considerably longer than in the preceding, in the ♂ often more than half the length of the costa, little thickened at the end. Thorax not so robust as in *Opsiphanes*, the whole build sometimes strongly Satyrid; forewing with rounded apex and large, broad cell, reaching to the middle of the wing. Costal and subcostal separate throughout their whole course, the latter 5-branched, branches 1 and 2 arising before, 3 behind the end of the cell, 4 and 5 short-stalked. Hindwing ellipsoid, with slightly undulate distal margin, lower median vein with a scent-pouch. Abdomen slender and rather long.

Concerning the early stages nothing is known. The imagines with one exception (*bassus*) are true forest butterflies, which flutter about with a weak flight near the ground, lead a shy and sluggish existence in the bamboo thickets and by preference keep near the water-courses. Some of them are certain to be met with where fermenting sap exudes from holes bored by insects in the trees of lower growth. At such places they sometimes sit for hours with the wings closed and it is in this way that they are most easily caught. They are very local and three out of the six known species inhabit southern Brazil.

Sect. I.

Apex of the forewing angled or rounded, hindwing of the ♂ with a hair-pencil in the cell or a brush-shaped hair-tuft at the submedian.

- O. aorsa** recalls Indian *Lethe* and *Zophoëssa* in the tailed hindwing and the upper surface is distinguished by very narrow bands and by a purple gloss which covers these bands in their marginal part. Previously only known from Brazil, *aorsa* was recently discovered also at the sources of the upper Amazons, so that there are now four local races to record: **aorsa** *Godt.* (63 a), the type of which probably came from Rio de Janeiro, extends southwards to Rio Grande do Sul. It is everywhere rare, and I cannot remember to have found it on the banana-bait which was so commonly visited by *Dasyophthalma*, *Caligo*, *Eryphanis reevesi* and other species of *Opsiphanes*. It is a species of the larger forests, never leaving the shade of their tall trees. Moreover its period is very short (February and March) and in the course of a year one probably meets with scarcely more than half a dozen examples, and even those are mostly damaged on account of their delicate wings. Forewing in the ♂ with pale ochre-yellow oblique band, beginning beyond the middle of the inner margin and, sometimes slightly interrupted, running to the anal angle. In the apex small white spots. Hindwing with distinct marginal markings. Of the narrow bands crossing the cell of the forewing the proximal is as a rule dull whitish or brown, interrupted in the middle, the distal complete, of silver-white colour, reaching to the middle part of the median.
- litura*. In ab. **litura** *Fruhst.*, from Espiritu Santo, the marginal markings on the upperside of the hindwing have become brown-violet. — **fuscata** *Stich.* is the same shape as the typical subspecies but considerably smaller, hindwing with more rudimentary tails. ♂; above black-brown, the bands near the apex and distal margin of the forewing strongly shaded with brown, particularly in the posterior part quite blurred. Hindwing only showing quite indistinct light spots at the margin. Beneath the light angled band in the distal area has almost entirely disappeared, only a small yellowish white spot at the costal margin and another in the anterior angle of the lower median cellule persisting, together with a few whitish splashes in place of the anterior part of this band. Submarginal line at the distal margin, and correspondingly also the boundary of the dark part of the wing adjoining the distal area, strikingly dentate. Hindwing considerably darker than in typical *aorsa*, particularly in the basal and hindmarginal areas, the ground-colour there strongly tinged with violet. At the border of the distal margin a row of light, shallow lunular spots on the dark brown undulate line stands out conspicuously against the darker marginal dusting. In the ♀ the upper surface is vaguely rust-red, forewing with narrow light ochre-yellow band, similar to that of the typical subspecies, in which, however, the branch running anteriorly (towards the apex) from the top of the obtuse bend in the distal margin is lacking. Distal markings of the hindwing weak, faint, in the anal angle entirely disappearing. From the Upper Amazon (Manaos).
- hilara*. — In **hilara** *Stich.*, from Ecuador and Peru, the ground-colour is darker, above deep black-brown, the band of the forewing deep yellow, in the anal part notched proximally at the veins. Hindwing above unicolorous dark with white fringes, not distinctly spotted before the distal margin. Beneath the transverse band in the cell of the forewing is broken up into spots. Forewing and basal area of the hindwing striated with milk-white.
- arsippe*. **O. arsippe** has 2 geographical subspecies. **arsippe** *Hopff.* Oblique band of the forewing ochreous, almost as in *aorsa*, but darker, posteriorly strongly angled, otherwise smooth, distally somewhat broken. Of the anterior three small white spots in the apical area the middle one is placed somewhat distally; a fourth appears

as a small crescent or curved streak at the distal boundary of the eye-spot, which shows through from beneath. In the ♀ the distal border of the hindwing is of a somewhat lighter tone than in the ♂. Near the costal margin in the apical area there is in addition an isolated ochre-yellow spot; the tail-like point at the lower median vein darker brown. Length of the forewing ♂ 40—41, ♀ 42 mm. Under surface less variegated than in *aorsa*. Southern Peru. Very rare, only received from Chanchamayo. — **bracteolata** Stich. Darker than the preceding. White apical spots of the forewing very small, oblique band distally to the cell broken up into three small, isolated spots. Subapical spots at the distal margin very small, tail-like appendages of the hindwing shorter. Middle band in the cell of the forewing beneath continuous. The two small silky white spots between the medians lie like silver spangles on the dark ground. Before the distal margin of the forewing a lighter, whitish, narrow stripe, following the former. 1 ♂, from Bolivia.

O. syme replaces *sulcius* in Central Brazil and seems to be a rather rare species, of limited geographical distribution. Two local forms: **syme** Hbn., with the name-type from the state of Rio de Janeiro, where it is regularly found at Corcovado and in the Organ Mountains near Petropolis. Similar to the preceding species, but the yellow oblique band of the forewing much reduced and partially broken up into small spots; on the hindwing the row of yellow submarginal spots likewise smaller. In the cell of the forewing the markings of the under surface show through above. Of the eye-spots on the underside of the hindwing the first, placed in the middle below the costa, has a brown ground, which gives it a somewhat blind appearance, while the one placed between the median veins is more brightly coloured. The ♀ has before the distal margin of the hindwing somewhat more distinct yellow spotting and on the black colour of the disc a blue reflection. — **fumosa** Stich. (65 b, as *syme*) has the ground-colour somewhat darker than examples from Rio de Janeiro, the hindwing in particular is suffused with blackish and the submarginal row of yellow lunules nearly obsolete, merely indicated by a lighter tone of colour or only persisting in the anterior part. Espiritu Santo, first found by my collector, JULIUS MICHAELIS, rather rare.

O. sulcius Stgr. (63 a) comes from South Brazil, where it represents the Central Brazilian *syme*. It resembles the latter, but differs in the bright ochre-yellow band of the forewing, which is there narrow and dentate and terminates before the anal angle; in *sulcius* on the contrary it is broad and reaches the anal angle. — The form **sodalis** Rüb., from São Paulo, is strongly suffused with yellowish above and beneath, especially in the proximal area of the wings, and the marginal markings on the hindwing more extended.

SECT. II.

Forewing with the apex more pointed. ♂ without true hair-pencil. The lower median of the hindwing arises not far from the base and forms close behind the cell a deep pouch filled with mealy scales.

O. staudingeri Godm. & Salv. (63 b). Size of the preceding; upper surface bright dark brown, even the usually deep black apex brown. Before it a yellow-red oblique band, partially darkened with brownish, beginning before the last third of the costal margin, running obliquely towards the middle of the distal margin, then bent and running parallel with the distal margin towards the inner margin, terminating in almost a point at the submedian. Beneath the hindwing has a faint ring-shaped mark in the middle of the cell. The anterior ocellus, in the middle of the costa, is the larger, with brown ground, the one between the medians the smaller, with blackish ground and brighter markings. Panama; very rare, only a few examples known; the ♂ figured, from coll. FRUHSTORFER, came from Costa Rica. A ♀ from coll. STAUDINGER, from Chiriqui, was first described by STICHEL as follows: "Somewhat larger than the ♂, ground-colour of the upper surface lighter, light reddish brown. Band of the forewing broader, less sharply angled, running posteriorly in a slight curve. Border at the distal margin of the forewing ochre-yellow. Under surface as in the ♂. Length of the forewing 46 mm."

Group *Opsiphanes* Westw.

O. batea is one of the most interesting species of the genus; its range indeed is only a comparatively restricted one, being confined to subtropical Brazil and the adjacent countries, but it offers little resistance to climatic influences even at short distances, and the result is a series of geographical races concerning which a great deal has already been published, without, however, elucidating them satisfactorily. The centre of distribution for the collective species seems to be the province of Santa Catharina, from which we already know two representative species, probably on account of the more thorough exploration of this district. All that is certain is that *batea* occurs from Espiritu Santo to Rio Grande do Sul, changing gradually from north to south and becoming progressively more melanotic in colouring southwards. Together with quite dark forms, however, there occur in both the southern provinces of Brazil also retrogressions to the lighter name-type. We can hardly regard them as seasonal forms, as according to my experience the species of the *batea* group have only one generation, which occurs in the spring and disappears in April and May, when the cool nights begin. The clasping-organs have not yet been investigated, but according to STICHEL these lead to no result in this genus, as the organs themselves are not yet sufficiently differentiated. The early stages are not known,

and thus the separation or union of the several forms still remains more a matter of instinct or personal choice than of experimental knowledge. If here again I deviate from the previously frequented path, it is on the ground of a delightful accumulation of material, which I have been fortunate enough to get together. —

batea. **batea** Hbn. (62c), the name-type, probably came from the state of Rio de Janeiro; at any rate HÜBNER's figure, which is not so good as most in his works, shows the principal distinguishing mark of the Rio specimens, the almost vertical black distal border of the forewing, which is not expanded proximally (towards the cell) and has its inner edge almost straight. All the other forms, on the contrary, have an apical spot extending as far proximad as in our figure (61a 2, *subsericea*) or even further and similar or still finer and more numerous proximal incisions. Moreover all the representative forms bear a more or less distinct black spot at the apex of the cell of the forewing, which apparently is only absent in *batea* from Rio de Janeiro. Upper surface of the hindwing with less of the dull red-brown gloss. Under surface with parts of the cell of the forewing whitish

asphærus. and with longer, almost whitish yellow median band, posteriorly tapering to a point. — **asphærus** *subsp. nov.* is a larger race from Espiritu Santo, the most northerly locality known, in which the forewing has the three whitish yellow subapical patches already somewhat faint and the distal border more deeply indented. ♂ almost, ♀ entirely without black spot at the apex of the cell. Marginal area of the hindwing in the ♀ extending to the cell, without any trace of red-brown. The whitish parts of the under surface more extended than in *batea* Hbn. Very rare, while according to VON BÖNNIGHAUSEN *batea* is very common in the Organ Mountains

glaukias. near Petropolis. — **glaukias** *subsp. nov.* is a local form from the province of São Paulo, very nearly allied to the name-type; smaller than *asphærus* and *prægrandis* (61a), but appreciably larger than *batea*. Subapical patches darker than in the preceding races, ochre-yellow. Basal area of both wings of a deeper colour, more inclining to red-brown. Distal border proximally rather regularly but not very deeply incised. Cell-spot of the forewing rudimentary. Under surface hardly differing from *batea* in the shape of the ocelli and the

dubia. general coloration. From three ♂♂ in coll. FRUHSTORFER. ♀ unknown. — **dubia** Rüb. likewise came from São Paulo and according to STICHEL is a very small, somewhat abnormal form, with paler ground-colour and

panormus. strikingly lighter distal margin. — **panormus** Rüb. is apparently not rare at Blumenau and even somewhat further south, at Theresopolis in Santa Catharina, I myself took numerous examples in the "Waldschänken" already mentioned, which I searched twice daily. According to the material in my collection *panormus* chiefly differs from *batea* in the black distal border of the forewing extending to the apex of the cell and leaving either no yellow-brown spot at all or only a very reduced, narrow one which never reaches the costal margin, whilst in *batea* and its offshoots it always runs from the first median to the costal as a distinct, sharply defined transcellular band. On the under surface the striation is predominantly black instead of red-brown. RÖBER's type, which is in my collection, differs from all the examples of *batea* to which I have access in having a beautiful yellow submarginal punctiform spot on the underside of the forewing between the middle and lower medians.

beata. — **beata** Fruhst. (61a as *subsericea*) still possesses quite distinctly the *batea*-character and differs from *panormus* chiefly in possessing a broad yellow band-like transcellular spot, distally dusted with reddish, on the forewing, which is particularly well developed in the ♀. The black distal border of the hindwing somewhat narrower than in *panormus*. Santa Catharina, Theresopolis, up to about 1500'. Appears about January and flies until March, preferring the edge of the woods or the so-called Capoeira, the spare, dwarfed growth which springs up where the forests have been cut down. The butterflies are fond of the sweet sap of certain shrubs which exudes from holes bored by small beetles and besides Lepidoptera also attracts enormous numbers of *Melipotæ*

didymaon. *ponæ*, *Lucanidae*, *Elateridae* and sometimes also *Gymnetis* (*Cetoniidae*). — **didymaon** Fldr., the locality of which was incorrectly given by STICHEL as Sta. Catharina, almost certainly came from Rio Grande do Sul, judging by the type before me from the Tring Museum, which I have been able to compare with sufficient material from my collection. The subapical patches of the forewing about as in *batea*, small, duller yellow than in *panormus* and *beata*, but apparently very variable, in the ♀ again very large, nearly white. The black marginal area of the forewing much widened, bearing either no yellowish transcellular band or only an indistinct one, which in the ♀ is also darker and more reddish. Distal border of the forewing sometimes narrow (type) or again nearly reaching the cell. Hindwing above with rust-red tinge proximally to the black marginal area. Under surface contrary to the general character of the Rio Grande fauna predominantly blackened, the transcellular band of the forewing a mere thread, ocelli of the hindwing with delicate, scarcely appreciable yellow bordering, on the other hand the nearly black outer border much widened. São João da Reserva, Rio Grande do Sul, 3 ♂♂, 1 ♀ in coll. FRUHSTORFER. Appears at the end of the summer and prefers the edges of the woods or

subsericea. light thickets (MABILDE). — **subsericea** Fruhst., analogous to *beata* Fruhst., is the light form from Rio Grande do Sul and differs from *didymaon* in having a broad yellow transcellular zone on the forewing. Smaller than the other *batea* forms, wings more rounded, and in the ♀ scarcely undulate. Black distal border of both wings strikingly narrow, proximally inappreciably undulate, but especially on the hindwing broadly tinged with dark rust-red, as in *didymaon* Fruhst. Hindwing with slight silky gloss. Apex of the cell on the forewing in the ♂ only quite faintly red-brown, in the ♀ spotted with black. Under surface: darker than in *beata*, hindwing only with a short light band, which does not extend beyond the cell, otherwise uniformly striated with red-brown throughout. Ocelli oblong, relatively small. *subsericea* agrees with the type in the very small dull yellow subapical patches of the forewing, but differs beneath in the darker general colouring and in having the yellow

band at the apex of the cell of the forewing broad instead of filiform. — *praegrandis* *Fruhst.* (61 a) on the *praegrandis*. whole approaches *asphærus*, but is even larger. Above with the black distal border deeply incised proximally, but scarcely extending nearer to the cell than in *beata*. Apical spots of the forewing very large, light yellow. *praegrandis* differs further from its Brazilian allies in the following points: distal border of both wings proximally more deeply excised, much lighter towards the costa. Abdomen above lighter brown. Beneath: distal part of the forewing broader and lighter yellow-grey with larger black ocelli. The triangular subapical spot striated with white and more extended, the transverse bands of the cell light brown. Hindwing: the apical ocelli more elongate, the anal ones with broader light brown bordering. The yellowish discal band light yellow, more extended, broader than even in *beata beata* and running as far as the anal ocellus. The brown submarginal band of the forewing much narrowed towards the apex, anal ocelli of the hindwing with fuller light blue iris, filling almost half the ocellus instead of the small "lunula" of *batea*. Locality: Paraguay. *praegrandis* passed for a long time in collections under the name "*didymaon* *Fldr.*" But FELDER adds to his diagnosis: "Our examples are all smaller than *batea* *Hbn.*, among which they seem to occur", which contradicts this determination, and at the same time shows that forms analogous to *beata* were already known to FELDER, which he was observant enough to separate from his *didymaon*.

O. catharinae *Stich.* (= *wilhelminae* *Röb.*) exclusively inhabits Santa Catharina and is undoubtedly *catharinae*. far the rarest of the two or three species of the *batea* group. Its specific right is beyond all question; the principal distinguishing characters consist in the absence of the hair-pencil in the cell of the hindwing, the more rounded shape of the wings and in the basal area on the upperside of both wings being by far the lightest, nearly yellow, only reddish at the edges, and the veins red or black to the middle of the wings. Distal border of the hindwing very broadly grey-yellow. Transcellular spot and apical bordering of the forewing similar to that of *beata* *Fruhst.* (61 a). Apical patches of the forewing alike in both sexes, very light, almost pure white. Ground-colour of the ♂ ochre-yellow, both wings with broad black margins, bordered with lighter grey-black; the yellow colour shaded with rust-red where it touches the black distal part. The proximal boundary of the latter begins not far beyond the cell at the costa, runs parallel with the end of the cell to the upper median, then projects basewards again between the upper and middle medians, and beyond the latter once more recedes considerably towards the distal margin. The whole boundary-line is dentate but not sharply. Discocellular proximally brownish, distally blackish. In the black distal part a row of 5 whitish spots, running in a curve from the costa, the last is a mere dot. The row of spots terminates between the lower radial and the upper median, the spot being here replaced by the apical eye-spot, which shows through from beneath. Black distal part of the hindwing of the same extent as in *O. didymaon* *Fldr.* Proximal boundary uncertain, not far from the end of the cell running parallel with the distal margin. At the inner margin a bare friction-patch with a small hair-pencil at the submedian. Under surface nearly as in *O. didymaon*, on the whole with a somewhat lighter tone, a brownish, dark-edged band at the discocellular broader than in that species, the dark-shaded stripe placed proximally to the two marginal lines, corresponding to the black distal part of the upper surface, bent somewhat towards the distal margin behind the lower median. Type probably from Blumenau, from whence also came the examples described by RÖBER, which I have before me for comparison. I myself took *catharinae* at Theresopolis in company with *O. batea beata* *Fruhst.* and *O. didymaon* *Fldr.* at the same exudations of sweet or fermenting sap in the underwood of the river-valleys, but much more sparingly than the other two forms.

O. bassus commonly occurs in company with *O. batea* *Hbn.* and *didymaon* *Fldr.*, but in contrast to these it ventures even in the greatest heat of the day on to sunny grass-lands with scattered bushes, and once when chasing it I trod on a poisonous snake 2 m. in length, crawling in the grass, which perhaps was also hunting the butterflies. Two local forms: **bassus** *Fldr.*, described by its author without more exact locality as from *bassus*. "Brasilia meridionalis"; type probably from Blumenau in Santa Catharina; differs above only in the narrower transcellular band of the forewing and beneath in the considerably smaller ocelli from *luteipennis* *Btlr.* (61 a), *luteipennis*. which according to a ♂ before me from Rio Grande do Sul is still more strongly tinged with red-brown above than the *bassus* ♂♂ taken by me. The nomenclature is somewhat arbitrary, as BUTLER described his *luteipennis* without any locality. I have only applied the name to the Rio Grande form to prevent its sinking as a synonym and to avoid creating a new one. — **oculata** *Stich.* designates a poorly coloured aberration *oculata*. which happens to have the anal ocellus of the hindwing marked above also.

O. boisdualii *Westw.* (62 d) is a species of restricted range, noteworthy for its light yellow colouring and known to appear in the twilight and to have a swift and powerful flight. Originally described from Mexico, it extends southwards only to Guatemala and Honduras. Under surface with the same tone of colour as the figured upper surface, a costal stripe darkened, with whitish transverse striation, the rest of the wings irrorated and watered with brownish or rust-red almost throughout. Hindwing with two ocelli; the anterior one oval, distally somewhat flattened, finely margined with black, interiorly tinged with rust-brown and ornamented with a white curved streak. Posterior eye-spot round, the pupil yellowish with a small white curved streak, the border blackish-dusted, the whole margined with ochreous and finely surrounded with rust-brown. Between the two, arranged in a crescent, three round light spots or patches are noticeable in the striated surface, the posterior two sometimes white-pupilled. In the distal marginal area two rather distinct rust-brown

undulate bands are formed by the closer striation and shading. The distal margin itself is somewhat duller, especially anteriorly. Abdomen with lateral friction-pads. The ♀ larger, broader-winged, with a band-like light patch behind the cell. Distal margin of the forewing nearly straight.

- O. cassiae** inhabits tropical South America from Colombia to Bolivia and from Guiana to Rio de Janeiro and Santa Catharina. Common wherever its food-plant, the edible banana, has been planted, on the leaves of which the light green larva lives. The species probably flies all the year round, and examples are known from Surinam which perhaps belong to a dry-season form. The separated branch-races are not very sharply divided; in the Central Brazilian races it cannot be proved with certainty whether they are due to geographical or only climatic influences. — **cassiae** *L.* came from Surinam, but is apparently distributed as far as eastern Colombia. Forewing with a yellowish band, much more narrowed anally than in *lucullus* (61 a); hindwing with a short yellowish marginal band from the apex to about the upper median, thence onwards narrowed and mostly only continued as reddish shadows. Underside of the hindwing with a very large, nearly retort-shaped apical eye-spot, sometimes distally produced, and a small, rounded, yellow-ringed anal ocellus. Between the two occasionally some blind accessory eye-spots. **cassiculus** *Stich.* is a smaller form, perhaps belonging to the dry season. The ♂ has the band of the forewing somewhat narrowed, sharply cut posteriorly by the median veins and showing a tendency here to break up into spots, and with both its proximal and its distal edge deeply incised. Hindwing unicolorous dark brown, at most in the apex one or two quite blurred, scarcely perceptible small, narrow, diffuse spots. ♀ somewhat larger, band of the forewing but little outcurved proximally on the cell, posteriorly strongly notched at the median veins, the veins themselves there somewhat dusted with brown. Hindwing only with some small pale ochre-yellow apical spots or the short beginning of a dentate marginal band. — **pseudocassiae** *Fruhst.* ♂: length of the forewing 42 mm. This interesting, small race forms a transition from *cassiae* to *tamarindi*, as it bears on the forewing a compact, dark ochreous band as broad as in *cassiae decentius* *Fruhst.* and has the hindwing unicolorous, entirely without markings, like *tamarindi*. On the under surface *pseudocassiae* is about intermediate between *tamarindi* and *xiphos* in marking and colouring.
- pudicus**. *Manaos.* — **pudicus** *Fruhst.* inhabits Bahia. Transverse band of the forewing light yellowish, of about uniform breadth from the costa to the anal angle and considerably broader than in *cassiae L.* Hindwing with a short, narrow, light yellow admarginal band, terminating at the upper median. ♀ with scarcely appreciable red-brown tinge on the hindwing. Under surface: pale grey, the yellowish oblique band of almost uniform colour across the entire forewing. Ocelli of the hindwing, including the anal, very large. This subspecies, which manifests distinctly the dry-season characters, has probably sprung from what was originally a dry-season form, similarly to the East Javan forms which have already attained to fixity as subspecies. It is fairly certain that in the other northern provinces of Brazil, some of them with still more sterile conditions and even longer rainless periods than prevail in Bahia, still more specialized *cassiae* races occur. — **decentius** *Fruhst.* forms the transition from *pudicus* to the Central and South Brazilian local form *lucullus*. Bands as in *pudicus*, but dark orange-coloured. Under surface: ochreous band of the forewing short, broad, extending from the anal angle only to the middle median, at the lower median deeply notched by the black basal colouring.
- lucullus**. *Minas Geraes.* — **lucullus** *Fruhst.* (61 a) differs from all the northern races in having the under surface considerably darkened, with all the whitish and yellowish parts standing out more distinctly, especially on the hindwing. The striation is almost deep black and the purple tinge is increased in extent and intensity. ♂: band of the forewing dark ochreous, costally very broad, proximally very irregular, i.e. deeply incised, anally narrowing as in HÜBNER's fig. I, pl. 74. Admarginal band of the hindwing in contrast to *pudicus* and *decentius* little developed, only consisting of 2 or 3 diffuse patches. ♀: transverse band of the forewing much enlarged, broader and paler than in typical *cassiae*, proximally irregular. Admarginal band of the ♀ very broad and long, always distinct and remaining light yellow as far as the middle median. Anal area tinged with red-brown. Under surface; ♂ with the yellowish anal band of the forewing quite narrow, obsolete. ♀: band very broad, light yellow to the second median, then somewhat covered with reddish scales, running to the costal margin and becoming gradually paler. Ocelli of the hindwing very large. The butterfly is common at Rio among banana, on the leaves of which the light green larva lives. Espiritu Santo, Rio de Janeiro, São Paulo and especially common also at Blumenau, in Santa Catharina; also in Paraguay, but very rarely. — **castaneus** *Stich.* Upper surface very dark; oblique band continuous to the lower median vein, then broken up; hindwing unicolorous. Under surface very bright, with large eye-spots. ♀ larger, almost as in typical *cassiae*, but the markings at the distal margin of the hindwing indistinct. Specimens sometimes occur with the band of the forewing much lighter and abbreviated, recalling *tamarindi*. Central America and Colombia. — **rubigatus** *Stich.* Forewing of the ♂ somewhat broader, apex less pointed, the band generally as in the typical subspecies, occasionally somewhat widened, posteriorly complete to the extreme end, or here sometimes indistinct. Hindwing with some small apical spots, which are sometimes continued as washed-out rust-red crescentic spots at a short distance from the margin. Hinder angle behind the cell more or less tinged with dark rust-red. Otherwise like typical *cassiae*; the form shows all transitions to this. From Coca in Ecuador. — **strophios** *Fruhst.* Band of the hindwing mostly at some distance from the distal margin, prolonged nearly or quite to the anal angle, much as in the typical *cassiae* ♀. Likewise connected by transitions with the neighbouring forms. Coroico in Bolivia.
- zelotes**. **O. zelotes** is split up into 2 local races: **zelotes** *Hew.*, from Colombia. ♂ above dark brown, forewing

oblique band; this is of medium breadth, on the inner side rectangularly bent posteriorly, terminating in a point just before the median vein. In the apical area 3 small white spots. ♀ unknown. — *zelus* *Stich.* Shape *zelus.* of *O. cassiae*, but somewhat larger, the apex of the forewing pointed. Upper surface dark brown, beyond the cell of the forewing a sharply angled band placed as in the typical subspecies, but broader, fuller-margined, posteriorly tapering to a point not far from the distal margin directly before the submedian. In typical *zelotes* this band is rectangular on the inner side, here only obtusely curved, but its peculiar position affords a characteristic and unmistakable distinction from *O. cassiae*. Equally unmistakable are the differences on the under surface. It shows in the forewing a grey-brown basal and cellular area with simple, undulate transverse lines, arranged in peculiar figures, in the anterior part of the distal area a triangular patch with very fine transverse striation. The hindwing has a strong violet tone and is quite finely watered with blackish wavy lines and whitish shading. Scent-organs as in *O. cassiae*. Type: 1 ♂ in coll. STAUDINGER. Panama: Chiriqui.

O. tamarindi extends northwards to Mexico, otherwise its area of distribution coincides with that of *O. cassiae*, but the geographical branch-races differ more considerably, so that many forms from the Andean region are further removed from the name-type. The synonymy of the branch-races has not yet been satisfactorily cleared up, as neither the earlier authors nor STICHEL and myself observed that **tamarindi** *Fldr.* *tamarindi.* (= *xiphos* *Fruhst.*) (61 b) came from Venezuela, and so it comes about that a more northerly race differing considerably from *tamarindi*, and which I now call **sikyon** subsp. nov. (still figured, 61 b, under the old name *sikyon.* *tamarindi*) passes as *tamarindi* and was also figured as such by GODMAN and SALVIN in the celebrated *Biologia Centrali-Americana*. Our figure of the ♀ is defective as regards the hindmargin, and an extended red-brown tinge on the upperside of the hindwing is not brought out. In the ♂ the upper surface is dark brown, the distal margin anteriorly grey-brown. Band of the forewing dirty white, in its posterior part sometimes brownish, anteriorly of approximately uniform breadth as far as the middle median vein, on the veins somewhat incised on both sides, then constricted or narrowly interrupted by the middle median and the submedian, thus posteriorly broken up into two spots, the second placed at the margin of the wing close to the hinder angle, as an elongate, curved point. Hindwing with a lighter patch or spots at the apex, dirty white or brownish, and from there onwards with a dull rust-red posteriorly washed-out, narrow undulate or curved band near the margin. Anal area beyond the cell, about between the submedian and the upper median vein, more or less strongly tinged with rust-red. Anterior eye-spot on the under surface ovalobliquely placed, distally obliquely flattened, only narrowly margined with black-brown. ♀ larger, with broader wings, apex more obtuse. Band of the forewing whitish as far as the posterior point, broader and more complete. Light patch in the apex of the hindwing more distinct, becoming almost a band, the adjacent undulate line near the margin better developed. ♂ type from Tepic, West Mexico. Type of the ♀ from San Pedro Sula, Honduras, in coll. FRUHSTORFER. *sikyon* was also recorded by GODMAN from Orizaba and other places in Mexico and said to be distributed throughout the whole of Central America to Colombia. — **kleisthenes** *Fruhst.* is the brilliantly coloured continuation of *sikyon*, from which it is distinguished by the more intensive velvety brown tinge in the basal area of the forewing and the dark chestnut-brown discal part of the hindwing. The forewing bears further a more compact, lighter yellow transverse band of almost uniform breadth and the hindwing has a broad terminal border, anteriorly light gold-yellow, posteriorly reddish. Under surface paler, more washed-out than in *sikyon*, more brown-yellow instead of grey-black. The yellowish subanal band of the forewing more strongly marked, broader, more pronounced in colouring. Anal ocellus of the hindwing with light brown foreground. Collected in September on the road to the Quindiu Pass, West Colombia, at about 1500 m. — **cherocles** *Fruhst.* *cherocles.* closely approximates to typical *tamarindi* *Fldr.* from Venezuela, as we frequently observe in species from eastern Colombia, but *cherocles* is sharply distinguished from the name-type by the presence of a distinct, moderately broad and only short marginal band on the hindwing, of reddish ochre-yellow colour, extending from the upper radial to the upper median. The transverse band of the forewing is narrower, deeper ochre-yellow, strongly narrowed at the middle median, the adjacent but well isolated spot more wedge-shaped; under surface darker than in Venezuelan specimens, the anal band more ample, somewhat more vertical. Upper Rio-Negro, East Colombia, discovered by A. H. FASSL at 800 m. ♀ with light ochre-yellow transverse band on the forewing. Hindwing with broad ochreous distal border, running as a band to the upper median and from there to the anal angle as a subterminal undulate line. Hindwing beyond the cell with a dark rust-red area. — **corrosus** *Stich.*, in *corrosus.* my collection represented by three examples, has a somewhat narrower band on the forewing than in our figure of *xiphos*, of dirty white to pale brownish colour, commonly abbreviated and narrowed posteriorly. Hindwing unicolorous chestnut-brown. ♀ not differing materially from that of *sikyon*. Ecuador, not very rare. f. **spadix** *spadix.* *Stich.* has the band of the forewing narrow, partially broken up into spots, brownish instead of white-yellow. Singly among the normal form. Balzapamba, Ecuador, in July. — **incolumis** *Stich.* The wings broader. The *incolumis.* oblique band of the forewing narrowed in the cell by tooth-like indentations of the ground-colour, much as in *quiteria*, but in the ♂ chalk-white and towards the anal angle more strongly narrowed and terminating in a point at the submedian, in the ♀ light yellowish. Also on the under surface the band of the forewing is pure white; anterior eye-spot of the hindwing smaller than in *bogotanus*. In my collection from Pozuzo, Peru and from Bolivia. — **terenzius** subsp. nov. is based on the figure of a ♀ given by STAUDINGER in the *Exotic terenzius.* Butterflies 1888 pl. 72, which came from Santa Catharina, where Dr. FRITZ MÜLLER also found the larva men-

tioned in the description of the genus. The ♀ differs from that of *sikyon*, which it closely resembles, in the white median band of the forewing terminating at the lower median; under surface of the forewing costally less, anally more broadly tinged with white than in Mexican examples.

bogotanus.

O. bogotanus inhabits Colombia. Imago very large, above nearly black, velvety, with dull purple gloss. Transverse band narrower than in *sikyon*, composed of separate, nearly white spots, which in their turn are again dusted with purple. Hindwing with the hair-pencils which are also so characteristic of *tamarindi*: a very broad, bushy one beyond the praecostal cell, a somewhat smaller one before the apex of the cell and a third, of yellowish or blackish hairs, in the bare friction-patch of the inner margin. Under surface especially brilliant, the subapical part white, basal area sharply contrasting with it, dark cocoa-brown. Apical ocellus of the hindwing unusually large, almost suggesting those of the *Caligona*. Two local forms: **bogotanus** *Dist.* Type probably from Muzo, as the species scarcely seems to ascend above 1000 m.; very large with the distal margin of both wings boldly projecting. Forewing with a whitish, purple-edged oblique band, composed of irregular, isolated spots not placed in regular alignment. Under surface of the hindwing predominantly light brown. — **phrata-phernes** *Fruhst.* was recently discovered by FASSL, is smaller than the name-type and presents a melanotic extreme of the collective species; a phenomenon which is paralleled in *O. quiteria* from the same localities and which we also observe in *O. tamarindi*, of which the brightly coloured branch inhabits the West Cordilleras (*kleisthenes* *Fruhst.*), whilst the dark (*cherocles*) occurs together with *phrataphernes*. ♂ with the band of the forewing dull yellow, narrow and more uniform. Ground-colour deeper black than in Muzo examples. ♀ with relatively narrow white transverse band on the forewing and a distinct marginal border on the hindwing, but scarcely more than 1 mm. in breadth, which is anteriorly whitish, posteriorly yellowish, and terminates at the lower radial. Under surface of the ♂ with yellowish instead of white band on the hindwing; in the ♀ the band is broader and chalk-white. Apical ocellus of the hindwing somewhat smaller than in *bogotanus*, more quadrate instead of oval. The striation of the median part more delicate and placed on a darker ground than in *bogotanus*. Upper Rio Negro, from elevations of 800 m. *O. bogotanus* was treated by STICHEL as the Colombian branch of *O. tamarindi*. But the discovery of two actual local forms agreeing in habitus with *O. tamarindi*, one of which even flies together with *bogotanus phrataphernes* in the same localities, removed the last doubt as to the specific status of this *Opsiphanes*, which already differs from *tamarindi* in its size. The egg of this beautiful Brassolid is somewhat larger than that of *Sphinx ligustri*, elongate-rounded, cream-yellow with fine longitudinal grooves. The larva nearly approaches the long known *tamarindi* larva, is merely of a lighter green and with 2 (*tamarindi* 1) dorsal lines of a less glaring red. Food-plant: holly. The cremaster of the pupa is strongly curved proximad and the forewing-case has the inner margin projecting acutely, which gives the chrysalis a boat- or rather gondola-shaped appearance; it is of grey-green colour. As with most Brassolids the eggs are laid readily even in captivity, and in good numbers. I believe that in future attempts to breed South American butterflies in temperate climates the Brassolids will take the first place. For besides the circumstance just mentioned two other factors of importance have to be considered. The food-plants (species of banana and palm) thrive very well even in quite temperate climates if taken care of and protected from frost, and the plants are propagated not primarily by seeding, but most rapidly and abundantly by suckers. Moreover, the insects do not pair in the sunshine, as in most other families of Diurni, but during the flight of the butterflies in the evening and morning twilight (FASSL).

O. quiteria is one of the most widely distributed species of the genus and is met with from Central America to Bolivia and on the Atlantic side from Guiana to Paraguay and Santa Catharina. In the most northerly race the sexes are dimorphic and the Colombian subspecies differ strikingly from the name-type. Larva green sprinkled with white dots, lives on palms. — **quirinus** *Godm.*, described from Guatemala, in my collection from Honduras, extends as far as Panama, but is considered very rare. ♂ above with an ochreous band posteriorly lost in the ground-colour and two very large white subapical patches. Hindwing predominantly red-brown with traces of a yellow band between the radials. ♀ with white transverse band on the forewing, hindwing entirely chestnut-brown, before its terminal margin with three rounded yellow spots between the radials. — **quiteria** *Cr.* (61 b), originally described from Surinam but also known from the Lower Amazon, has the ochreous band on the forewing of the ♂ broader than in *quirinus*. The ♀ varies only inconsiderably in the extent of the short subcostal band on the hindwing. — **obidonus** *Fruhst.* (62 d), the form from the Middle Amazon, differs from *quiteria* from Surinam as follows: ♂ with the yellowish oblique band on the forewing narrower, submarginal band of the hindwing longer and narrower. ♀ with the half-band on the forewing more sharply incised proximally and distally; submarginal band of the hindwing narrower, and sharply expressed as far as the 1st median vein; the anal area broadly suffused with red-brown nearly to the cell. Obidos, August and September. Coll. FRUHSTORFER. — The race from the Upper Uaupes may be introduced as **mylasa** *Fruhst.* and is at once conspicuous by the much widened, orange band on the forewing. The yellowish ante-marginal band of the hindwing is entirely obsolete anteriorly and only marked by 3 obscure round dots of the size of a pin's head, but below the second median is continued to the anal angle as a slightly glossed, narrow,

sharply defined stripe. *mylasa* forms the transition from *quaestor* Stich., found on the eastern slopes of the Andes in Ecuador, to *obidonus* Fruhst., and from this to the name-type from Surinam. The hindwing in *mylasa* appears rounder, less dentate than in the other *quiteria* forms, and the yellowish band of the forewing is narrower than in *quaestor*. — **augeias** Fruhst. A strikingly light geographical subspecies without near allies. *augeias*. ♂ best compared with *O. badius* Stich. from Muzo, but the shape of the wings still more uneven, more undulate. Band of the forewing broader than in *badius*, yellowish, with a slight tendency to whitish. Basal area less rust-red than in *badius*. Hindwing nearly chestnut-brown, with the exception of a black undulate distal border and a black transcellular area. From the costal to the upper median vein runs a quite vertical, light ochre-yellow band of medium breadth, composed of three fragments. ♀ on the whole like the ♂, the transverse band of the forewing white, slightly inclining towards cream-colour, the subapical band of the hindwing continuous, broader and paler yellow than in the ♂. Hindwing lighter rust-brown, the black area somewhat washed-out and reduced. Under surface approaching that of *quirinus*, but distinguishable at once by having the band of the forewing broader and lighter yellow in the ♂♂ and posteriorly more diffuse in the ♀♀. From the Rio Aquaca Valley in the West Cordilleras, Colombia, at about 2000 m. — **phylas** Fruhst. In this *phylas*. pronounced local form the differentiation has proceeded further than in *augeias* and one might be tempted on account of the markings of the upper surface to regard it as a separate species were it not that the character of the underside demonstrates its identity. ♂ above black. The red-brown parts of *augeias* changed into an extremely characteristic grey-black colour, otherwise entirely unknown in the genus, but standing out little from the deep black ground-colour. Band of the forewing shorter than in *augeias*, only reaching to the lower median, narrower and of a dark straw-yellow slightly clouded with grey at the edges. Hindwing only with two remnants of an obsolete yellowish subapical band. ♀ recalling that of *O. badius*, the forewing bearing a very broad, nearly cream-yellow transverse band, which, however, is more regular and between the medians more extended. Hindwing with three isolated subapical patches, which are strongly marked, although less so than in *augeias* ♀. Ground-colour somewhat duller than in the ♂, uniformly black with dull brown reflection. *phylas* consequently forms the melanotic extreme of the collective species as it occurs in Colombia, but there is no connecting-link known with the Amazon races as, say, in the East Colombian *Eryphanis*. Under surface likewise darker than in *augeias*. ♂ with shorter, deeper yellow transverse band on the forewing, in the ♀ considerably broader, particularly between the medians, where it becomes cream-coloured with a slight purple gloss, but towards the costal margin changes into a chalk-white area delicately irrorated with black. Hindwing dark grey, not relieved with reddish discally and distally as in *augeias*. The darker under surface in conjunction with the broad bands will also at once separate *phylas* from *quirinus*. Upper Rio Negro, East Colombia, 800 m. Collected by A. H. FASSL. By the discovery of these two divergent and highly specialized *quiteria* races the interesting tendency of Colombia to produce parallel, representative, but nevertheless strikingly differentiated forms is again illustrated, and at the same time new light is shed on the unexampled richness of this country in species. The existence of these local races approaching the general *quiteria* type further renders it possible to separate *O. badius* Stich. as a distinct species, just as the discovery of two genuine Colombian local forms of *O. tamarindi* resulted in the specific rehabilitation of *O. bogotanus* Dist. — **quaestor** Stich. Above especially *quaestor*. deep black, only the apex of the forewing slightly lighter. Band of the forewing distally much widened. Hindwing only with traces of a faint submarginal band of reddish spots. Under surface more brightly shaded. 1 ♂ from Coca, Ecuador. — **bolivianus** Stich. has the ground-colour of the upper surface lighter, the band *bolivianus*. darker, reddish brown. Hindwing with distinct macular band before the distal margin. Nearest to *meridionalis*, but distinguished by the broader, darker band on the forewing. Bolivia. — **quirinalis** Stgr. Band of the *quirinalis*. forewing bone-yellow to ochre-yellow or nearly white, slightly dusted with brown; hindwing above with 2 or 3 whitish or yellowish spots at the apex, or sometimes with a reddish submarginal macular band. Peru, Ecuador, west of the Andes (?). — **philon** Fruhst. (61 c). The differences which *philon*. are shown in *obidonus* become still more pronounced in *quiteria* from Espiritu Santo, the most beautiful geographical form yet known. The deviation from the type from Surinam consists in: (♂) hindwing less undulate, upperside of abdomen and entire basal part of hindwing with long dark brown-red hairs, much as in *quirinia* Godm. from Central America. Submarginal band of the hindwing continued as far as the 3rd median vein, lighter yellow-brown, more sharply defined, in the anal angle broadly and diffusely dark red, confluent with the red basal colour. Under surface: much darker, more copiously shaded with black, especially in the cell of the forewing. Anal and distal areas of the hindwing commonly with a violet tinge. The white, slightly diffuse spot below the submedian of the forewing reduced. ♀: the yellowish band of the hindwing sometimes continuous to the anal angle, at least twice as broad as in the ♂, anally even wider, brilliant red-brown, the red shade reaching the cell. Espiritu Santo, Rio de Janeiro. As a sort of satellite of *philon* there occurs with it also what may be called an analogous, mimetic race of a second species, namely of *invirae* Hbn., which by the deeply incised and unusually broad yellowish bands on both wings forms at the same time the most strongly marked of all the *invirae* forms. — **meridionalis** Stgr. ♂ always smaller than *philon*, forewing *meridionalis*. with the apex less pointed and the distal margin more shallowly excised than in *quiteria*. Oblique band in this form somewhat variable, sometimes terminating in a very sharp, sometimes in an obtuse point. In the distal part of the cell occasionally a blurred yellowish patch. Hindwing with the distal margin less dentate,

although still strongly undulate (particularly at the median veins), near the distal margin with complete band, well developed to the hinder angle, its posterior part more or less shot with reddish, somewhat weakly coloured; there is also a faint rust-red tinge in the part of the wing which adjoins this anteriorly. ♀ of the same shape as the preceding subspecies, as a rule with the ground-colour somewhat paler, forewing not essentially different, the hindwing near the distal margin with a very broad band, which is anteriorly pale to red-yellow, from the middle onwards changes gradually into a bright rust-red and posteriorly is diffused into a large, vaguely defined rust-red area, gradually shading into the ground-colour. Forms transitions to the preceding race. Larva cylindrical, thickened in the middle, green, sprinkled with white dots, further with dark dorsal and lateral lines and stripes and yellow stigmata. Head yellowish, brown-striped, with reddish horns. Anal end with long tail-fork. Lives on palms. (According to BURMEISTER, *Pavonia quiteria*.) *meridionalis* differs from *philon*, apart from its smaller size, chiefly in having the band of the forewing in the ♂ broader and paler yellow, in the ♀ narrower and more sharply defined. The hindwing has the anterior part lighter and the anal area clearer red-brown than in *philon*, also the general colouring of the under surface is always paler, more washed out, with the submarginal area predominantly yellow, hence more gaily coloured than in more northerly forms. The yellow oblique band on the forewing beneath appreciably narrower than in *philon*, also in the ♀. Santa Catharina, probably also in Parana; not yet observed in Rio Grande do Sul. In São Paulo and Paraguay on the other hand transitions occur and the examples before me approximate to *philon* in the deep colour of the under surface, to *meridionalis* in the narrow band on the forewing beneath, and differ from both in the more extended and much darker chestnut-brown tinge of the anal area on the upperside of the hindwing. If this race is constant it might be called *oresbios subsp. nov.*

oresbios.
badius.

C. badius Stich. Hindwing strongly dentate. Band of the forewing contracted into a narrow yellowish white macular band. This is placed close to the cell, touching its posterior angle, but is anteriorly more or less indistinct as far as the subcostal and runs obliquely nearly to the distal margin at the lower median vein. Sometimes it is prolonged beyond this into a curved point at the hinder angle. Hindwing without spots and bands, but strongly tinged with rust-red in the anal and basal area. Under surface very brightly marked and differing from the preceding subspecies only in the narrower band of the forewing. The ♀ (hitherto unknown) is considerably larger than the ♂. Forewing predominantly black, only towards the base slightly tinged with rust-red — the pure white oblique band about three times as broad as in the ♂; hindwing deep rust-red with narrow black terminal border. ♂ very similar to *quirinus* Godm. ♀, however, larger. Band of the forewing more broken, hindwing above without the subapical rudiments of a yellowish band. The white transverse band on the underside of the forewing considerably broader even than above, also more extended than in *quirinus*. *badius* was united by STICHEL with *quiteria*. But the discovery of two further races more nearly allied to *quirinus* makes it seem advisable to raise this form, which is strikingly different in the ♂, to specific rank. Locality Muzo, 400—800 m., Colombia.

camena.

C. camena Stgr. Dark brown. Basal area paler brown, apical part black-brown. Distally to the cell runs a narrow ochre-yellow macular band, which is anteriorly closed and obliquely placed, sharply angled in posterior direction on the lower radial, and broken up into separate, irregular spots standing in the interneural spaces. It terminates in a double spot in the hinder angle, immediately before the submedian. Near the apex there is a small white double spot and behind it a somewhat larger white spot. Under surface pale brown with dentate and curved lines, which form irregular darker figures. Near the apex the three small white spots of the upper surface, between the radials a black, yellowish-ringed eye-spot finely bordered with black-brown. Distal area brown, posteriorly yellowish, near the margin two dentate lines, which disappear towards the hinder angle. Hindwing with the distal margin strongly undulate, with ochre-yellow lunular spots and a row of curved or lunular spots of the same colour near the distal margin, as well as the two hair-pencils, in the cell and at the submedian, characteristic of the group. Under surface pale brown. Anteriorly, somewhat beyond the middle of the costal margin, a large, oval, obliquely placed eye-spot, which is proximally clouded with brown, bears a white curved streak and is margined with black-brown. A second, rounded eye-spot beyond the cell near the hinder angle is black, dusted with yellowish, anteriorly edged with white, ringed with yellow-brown and finely margined with black-brown. Costal margin strigulated with white. Across the cell runs an irregular brown transverse band; base of the wing dark brown. The rest of the wings clouded, striated and marbled with black-brown. Not far from the distal margin there is a row of lunular spots composed of very dense striation, showing up lighter against the darkened distal border. ♀ larger than the ♂, apex of the forewing less produced, subapical patches purer white, all the ochre-yellow bands strikingly widened and lighter, particularly on the forewing, basal area and cell of the forewing as well as the whole upper surface of the hindwing rust-red. The black submarginal band of the hindwing bordered with ochre-yellow on both surfaces. Forewing beneath with broad whitish, purple-tinged transcellular area, the submedian area broadly ochre-yellow to the base. Hindwing lighter brown with lighter bordering to the ocelli than in the ♂. Colombia, West Cordillera, Rio Aguaca Valley, about 2000 m. According to FASSL the egg is similar in size and shape to that of *O. bogotanus* Dist.; it is merely more green-yellow and less transparent; the longitudinal grooves have sharper edges. He more than once observed the eggs laid on the underside of the leaves of a species of palm with non-feathery fronds of a metre in length, in groups of 4—12, arranged in 1 or 2 rows, regularly one beside another. Whilst *bogotanus* inhabits

the lower mountains regions together with *Caligo epimetheus*, *camena* shares its area of flight with *Caligo oberthueri* in the untrodden marshy primeval forests of the higher mountain districts. FASSL several times observed *camena* ♂♂ shortly after sunset at places where cattle were feeding; they would suddenly run for a short distance on the short turf, then rest on a piece of cow-dung for a moment with the antennae raised high, digging greedily into it with the proboscis, the next moment again running a short distance and repeating the same performance; at the same time they are extremely shy and fly away even when cautiously approached before one can get near them. The very rare and much larger ♀ has the ground-colour entirely chestnut-brown, possibly hitherto quite unknown and undescribed (FASSL).

O. sallei approaches *quirina* and splits up into four geographical races, all more or less rare. — **sallei** Westw. is dark brown; forewing at the base slightly tinged with reddish. Transverse band complete to the upper median vein, there strongly bent distad, afterwards broken up into spots; the last is small and pointed, following the curve of the hinder angle and terminating at the hindmargin. On the under surface the separate spot in the middle median cellule occupies the entire breadth of this and is slightly connected with the transverse band distally. Hindwing with rather broad distal band, notched on the veins and gradually displaced at the lower radial, anteriorly light ochre-yellow, darkened from about the upper median vein, towards the hinder angle becomes rust-red and is anteriorly widened but ill-defined. Venezuela, Colombia. — **mutatus** Stich. Band of the forewing broader, somewhat darker reddish ochre-yellow, smooth for its whole length or in the upper median cellule only obtusely indented proximally the connecting spot, however, anteriorly adjoining the anterior part of the band for its entire breadth, posteriorly completely connected with the following band-spot or only separated by the vein. In the distal part of the cell sometimes an obscure brownish spot. Hindwing near the distal margin with considerably narrowed band, which mostly terminates at the upper median; when longer it is gradually lost in the ground-colour as a vague reddish clouding and becomes narrower, instead of widening and becoming diffuse. The distal margin somewhat less dentate. Ecuador. — **farrago** Stich. ♂ with somewhat paler ground-colour, basal area of the forewing tinged with dull rust-red. Band of the forewing as in the preceding subspecies. Band of the hindwing much widened (as much as 4—5 mm.), less notched at the sides than in the typical subspecies and distinctly expressed as far as the lower median vein, but before that already somewhat clouded with reddish, at its termination in the hinder angle rust-red, ill-defined and anteriorly diffuse, so that the hinder angle and basal area of the wing appear predominantly pale rust-brown. Under surface weaker marked, the striation of the hindwing in particular less sharp, the ground-colour lighter, whitish-brown. The separate yellow spot in the middle median cellule of the forewing smaller, oval, quite isolated, a character which, however, must not be considered as distinctive. Southern Peru, Bolivia. — **nicandrus** subsp. nov. Distinguished from the preceding races by the considerably narrower red-brown band, which is broken between the median veins into separate crescentic spots. Upperside of the hindwing scarcely appreciably tinged with rust-red. Underside of the hindwing much darker brown, with purple, more dusky tinge. Coroico, 1200 m., Bolivia.

O. invirae occurs everywhere together with *quiteria* and must be regarded as a slightly differentiated species, which in its southern offshoots can scarcely be separated from the southern races of *quiteria* Cr. and in its northern forms, at least on the under surface, is not distinguishable from *cassina* Fldr. Yet the larvae probably differ decidedly; according to BÖNNINGHAUSEN they are more unicolorous than those of *quiteria*, which bear bright-coloured stripes. Feed on palms. — **relucens** Fruhst. ♂: similar to *remolius*, but smaller. Band of the forewing broad, light ochreous, strongly curved and extending to beyond the submedian in almost uniform breadth; its posterior spot sharply defined, rounded. Band of the hindwing anteriorly yellowish, from the upper median vein onwards rust-red and distinctly defined, reaching to the hinder angle, but narrow and uniformly deeply notched distally. Under surface in the type-specimen with broader yellow band on the forewing and larger eye-spots than the typical subspecies; between the eye-spots a chain of 4 whitish grey crescentic spots. Length of the forewing 36 mm. Honduras (San Pedro Sula). — **cuspidatus** Stich. ♂: forewing with very pointed apex. Distal margin very narrowly bordered with grey. Band of the forewing only complete to the lower median vein, beyond this sometimes a further small obsolete terminal spot. Basal area reddish grey. Band of the hindwing very narrow, darkening to rust-red at the radials and gradually disappearing. Anal area slightly tinged with reddish. From the Volcan de Chiriqui. — **invirae** Hbn. ♂ with narrow band on the forewing, the proximal margin of which is not at all or only very little produced into a tooth behind the cell; at the middle median vein it is somewhat displaced at both sides and at the lower median slightly constricted. For the rest it is rather sharply defined and smooth; the posterior part of the band bends in a curved, pointed hook in the hinder angle towards the hindmargin and mostly extends beyond the submedian, although less distinctly expressed. The eye-spot near the apex and the anterior part of the lines near the distal margin on the under surface showing through rather distinctly. The band near the distal margin of the hindwing narrow, sometimes almost broken up into spots and abbreviated, occasionally extending to the hindmargin, dull rust-red. ♀ larger, paler; forewing more elongate, distal margin less excised. Band of the forewing pale ochre-yellow, lighter anteriorly than posteriorly, broader than in the ♂, behind the angle of the cell distinctly produced into a tooth, at the median veins less displaced or constricted. Band of the hindwing broader, but mostly duller, in the posterior part suffused with reddish brown without distinct demarcation, much as in *O. quiteria meridionalis*.

Distinguishable from the latter, apart from its smaller size, chiefly by the undulate distal margin of the hindwing, the finer striation on the under surface and the more pointed apex of the forewing. Guiana, northern Brazil, Venezuela. — **ledon** *subsp. nov.* forms a transition from *invirae* Hbn. to *intermedius* Stich. from the Upper Amazon and differs from the name-type in its larger size and the darker oblique band of the forewing, which is narrowed towards the costa, and posteriorly runs out into quite a narrow point. Lower Amazon. — **intermedius** Stich. is larger, band of the forewing much widened, of a somewhat darker reddish ochre-brown colour, proximally with a strongly projecting tooth, at this point 8 mm. in breadth, at both sides without or only with very slight notches on the veins, towards the end rapidly narrowed, terminating in a sharp point. The band is thus nearly straight to beyond the submedian and only somewhat curved at the posterior end. Band of the hindwing narrow, anteriorly of an indefinite ochre-yellow, almost broken up into loosely connected spots, towards the hinder angle rust-red and more continuous, but ill-defined. Under surface more brightly coloured, but the striation fine and regular. Upper Amazon. — **sticheli** Rüb. has the band of the forewing in the ♂ light ochre-yellow, posteriorly pretty uniformly narrowed, between the upper and middle median veins incised; it terminates in a small elongate spot before the submedian. Band of the hindwing anteriorly marked by three separate small yellowish spots; it widens at the lower radial into dull rust-red, connected, crescentic spots and is diffused in the hinder angle. Somewhat variable in the composition of the band on the hindwing and the breadth of that on the forewing and in general very similar to the typical subspecies. The hitherto unknown ♀ approaches *amplificatus* Stich. from Paraguay; band of the forewing somewhat narrower, more strongly dentate proximally between the medians, of somewhat more reddish yellow colour. On the hindwing the three subapical anterior spots stand out more distinctly from the posterior bright rust-red part of the band, which is more broadly diffuse anally. Under surface darker than in *amplificatus*, approximating more to that of *remoliatus* Fruhst. in the deep ochre-yellow anal band on the forewing. Colombia, type probably from the Cauca Valley, both sexes also found by FASSL on the Upper Rio Negro at about 800 m. — **amplificatus** Stich. is a typical Paraguayan butterfly, of small size, smaller than *remoliatus*, with somewhat lighter ochre-yellow band on the forewing, and more closely and sharply dentate submarginal band on the hindwing, ♀ with predominantly yellow transverse band on the forewing and paler, posteriorly only inappreciably red-brown submarginal area. Under surface strikingly pale. Ocelli smaller than in *remoliatus*. Paraguay. — **remoliatus** Fruhst. (61a ♂; ♀ 61a as *meridionalis*). ♂: small apical spots yellow instead of white. ♀: apical spots larger and purer white. Transverse band of both wings darker ochreous, more sharply defined especially in the proximal part, and the band of the hindwing in the ♂ costally narrower, anally broader, darker rust-red. Distal border of the hindwing more broadly black, wings still less excised. Under surface with darker hatching, ocelli larger than in *amplificatus*. Larva on *Giriva* leaves, where it is difficult to find on account of its green colour. Pupates in November or December and again in June. The pupa is light green with a golden dot at each side. The butterfly emerges after 20—30 days; it is mostly common and hides among palms. ♂ type from Santa Catharina, ♀ type from Rio Grande do Sul. In the latter province *remoliatus* is by far the commonest species of *Opsiphanes*. According to 12 ♂♂ and 10 ♀♀ in coll. FRUHSTORFER it is very constant, varying only inconsiderably in size and not at all in colouring. — **agasthenes** Fruhst. differs from *amplificatus* Stich. in its larger size; much darker colouring; oblique band of the forewing in 2 examples deeply incised beyond the cell as in *quiteria*, band of the forewing behind the cell with unusually strong teeth; band of the hindwing rather narrow, sometimes almost like a string of pearls, but posteriorly widened and rust-red. Under surface much darker, all the ocelli larger and more broadly ringed with black. **rectifasciata** Fruhst. is an aberration in colour markings. Band of the forewing narrower, darker ochre-yellow, running almost rectilinearly, i. e. neither proximally nor distally considerably incised. Peru: Pozuzo. — **isagoras** Fruhst. In accordance with its geographical position *isagoras* approximates more to *amplificatus* Stich. than to *agasthenes*. It differs from both: in the more ample transverse bands of the forewing, deeply incised proximally, recalling *quiteria*, and the extended submarginal bands of the hindwing, which are especially strongly widened costally and are anally lighter red than in *androsthenes*. Beneath the forewing is lighter, the hindwing darker than in *amplificatus*; the anal ocellus of the hindwing larger, more oblong. Bolivia: Cochabamba. — **pseudophilon** Fruhst. (61d ♀). Habitus about as in *amplificatus* Stich. from Paraguay. Yellow band of the forewing strongly curved, particularly beyond the cell. Band of the hindwing light yellow to the upper median, then much widened, as a dark brown continuation, but sharply defined to the anal angle. Both the yellow and the red-brown section of the band distally much more deeply incised than in any other *invirae* form. In the cell of the forewing in the ♀ near the apex the beginning of a reddish yellow patch. Espiritu Santo.

O. cassina cannot be separated beneath from *O. invirae* by any very salient character, but may be easily known above by a mostly complete, nearly quadrate, ochre-yellow or rust-red spot before the apex of the cell of the forewing. *cassina* is at the same time confined more to the northern part of the range of *invirae*, it extends indeed on the Andean side parallel with *invirae* and *quiteria* as far as Bolivia, but on the Atlantic coast it probably does not reach beyond the Lower Amazon and so far as our present knowledge goes is already wanting in Central Brazil. It would appear that the dry climate of the provinces of Piahy, Ceara and Bahia, which, however, are practically unexplored, stands in the way of its spreading in this direction. — **fabricii** Bdv. (61d), previously known from Guatemala to Panama, was quite recently sent to me also from Tepic, West Mexico. The ♂♂ of this subspecies are mostly small with the apex of the forewing but little pointed,

the distal boundary of the distinctly forked band little or not at all constricted. In the ♀♀ the proximal forked part is mostly obsolete in the cell, the colour of the cell itself ferruginous. Hindwing only in the anterior part with ill-defined submarginal band, this fades out between the radials, changing into rust-brown and grey-red, and this colour spreads over almost the whole surface of the wing, starting from the anal part. The form recurs in Colombia and western Ecuador with trifling modifications, the ♂♂ are on an average somewhat larger and more brightly coloured, without, however, any specific distinguishing marks being recognizable. The distribution of *O. c. fabricii* may therefore be accepted as given above. — **chiriquensis** *Stich.* seems to occur *chiriquensis.* exclusively at the Volcan de Chiriqui, Costa Rica. Of considerable size, ♂ with the apex rather pointed and the distal margin of the forewing strongly convex posteriorly. Band of the latter very broad throughout, bright rust-yellow, distal boundary but little constricted, in this respect almost agreeing with *fabricii*. Fork distinct, proximal part broad in the cell, narrowly connected with the main band. Costal margin of the hindwing broadly reddish to the upper radial, particularly at the base and at the apex. Band of the hindwing very broad, broader than in any other form of the species, anteriorly red-yellow, in the middle changing into rust-red, towards the hinder angle widened, without becoming diffuse. Under surface especially bright. ♀ very dark brown, band of the forewing broadly yellowish, fork distinct. Hindwing near the distal margin with broad band, which is anteriorly yellowish, then widened and rust-red, in the anal area broadly diffuse, as in *invirae amplificatus*. — **numatius** *subsp. nov.*, from Colombia without more exact locality, approaches *chiriquensis* in size, but in the *numatius.* shape of the bands more resembles the more southerly *notandus*, differing, however, from both in having the proximal cell-spot of the forewing free and unusually elevated at its distal end. Band of the hindwing much as in the broad-banded *fabricii*, but posteriorly darker rust-red. The under surface also much deeper, darker brown; apical eye-spot of the hindwing more broadly and distinctly ringed with brown than in *fabricii*. — **periphetes** *subsp. nov.*, which may be distinguished from *numatius* by its small size, approaches *merianae* from *periphetes.* Surinam in this as well as in the strikingly narrowed submarginal band of the hindwing, which sometimes disappears altogether at the upper median. It also agrees with *merianae* in having the ochreous transverse band of the forewing considerably narrowed towards both the costal margin and the anal angle. Colombia; more exact locality unknown. — **cassina** *Fldr.*, type in the Tring Museum, was first brought to Europe from the Upper *cassina.* Rio Negro. ♂ comparatively large, length of the forewing 42 mm. Band of the forewing broad, about as in *O. quiteria meridionalis* *Stgr.*, also resembling this in the shape, i. e. distal border without constriction, regularly oblique, directed towards the inner angle. Proximal part of the fork formed by the discocellular obscure and present as an isolated spot. The band of the hindwing rather broad next to the apex, gradually narrowing and changing into a rust-red colour, vaguely diffused at the anal angle. — **merianae** *Stich.* is the form indigenous *merianae.* to Guiana, with distinctly forked band, the ♂ with very pointed apex and strongly convex distal margin to the forewing. This form may be easily and certainly distinguished from all others by the shape of the forked oblique band of the forewing. At the fork the band as a rule projects proximad as far as the angle at the origin of the middle median, its distal boundary is strongly constricted between the middle and upper medians, and it runs into the inner angle essentially narrowed, pointed and somewhat curved. The constriction at the distal boundary and the narrowing behind this constriction are quite characteristic. The submarginal band of the hindwing is moderately narrow, sometimes complete, sometimes reaching only to one-half or beyond it; as a rule it becomes darker brown towards the anal angle, but not rust-red. ♀ similar to that of the preceding form, but smaller, less intensively coloured, the submarginal band of the hindwing not widened in the anal part to the same extent as in that, and not much diffused. — **aequatorialis** *Stich.*, from eastern Ecuador. *aequatorialis.* Similar to the preceding. Forewing with the fork of the band incomplete, the spot placed in the cell, however, is connected posteriorly with the proximally projecting tooth of the main part of the band, only separated by the median. The distal boundary of the band is not essentially constricted, and is as in *cassina cassina*. The band of the hindwing starts close to the apex as a continuous row of ochre-yellow spots, terminates at the upper median vein, there changing to deep rust-red but not diffused; it remains in its whole course approximately uniformly narrow, its posterior part is occasionally blurred. ♀ with the oblique band of the forewing bone-yellow, in the anterior part quite white. The part of the fork placed in the cell is always incomplete and indistinct. Band of the hindwing anteriorly ochre-yellow near the distal margin, changing at the upper median vein into a deep rust-red or red-brown colour; in the hinder angle this spreads out anteriorly as far as the cell. — **notandus** *Stich.* Similar to the preceding subspecies, mostly still larger and more brightly *notandus.* coloured. ♂: main part of the band of the forewing somewhat narrowed distally to the cell, broken, with long teeth on the veins. Hindwing less relieved with reddish at the costal margin, a stripe before the entire length of the subcostal always brown. The band towards the distal margin rather broad, anteriorly paler, posteriorly bright red-brown. ♀: resembling that of *aequatorialis*, the fork in the band of the forewing somewhat narrower, the branch placed in the cell broader and more complete, the distal boundary of the main part more distinctly notched at the veins, the band on the whole somewhat broader, so that the angle at the origin of the upper median vein is entirely filled up (as far as available material indicates). Peru. For the sake of clearness I here recapitulate the range of these three difficult species, which occur together in the following forms:

	<i>O. quiteria</i> Cr.	<i>O. invirae</i> Hbn.	<i>O. cassina</i> Fldr.
in Honduras	quirinus	relucens	fabricii
„ Costa Rica	quirinus	cuspidatus	chiriquensis
„ Colombia	badius	sticheli	numatius
„ Amazons	obidonus mylasa	intermedius	merianae
„ Guiana	quiteria	invirae	merianae
„ Central Brazil	philon	pseudophilon	—
„ South Brazil	meridionalis	remoliatius	—
„ Paraguay	oresbios	amplificatus	—
„ Peru	quirinalis	agasthenes	notandus
„ Bolivia	bolivianus	isagoras	—

Group *Catoblepia* Stich.

Differs from *Opsiphanes* chiefly in the secondary sexual characters, the only important structural difference being the narrower cell of the hindwing. A few other details have no generic value, and the group is connected on the one hand with *Opsiphanes* by *O. versitincta* Stich. and on the other with the group *Selenophanes* Stgr. by *O. amphirhoë*. Submedian mostly with felted hairs proximally. Costal and subcostal distinctly though narrowly separated. Subcostal 5-branched, two branches arising shortly before the end of the cell, the first in one case (*O. amphirhoë*) somewhat further proximad, running into the costal margin, the third branch midway between the end of the cell and the apex, the fifth branch forked with the fourth and running into the distal margin. Cell broad, anterior angle rounded, upper discocellular moderately long, continued by the middle one in a gentle curve proximally, the lower oblique, elongate. Median shortly inflated at the base. Hindwing nearly oval, apex rounded. Costal close to and parallel with the costa. Precostal cell broader than long, rhomboid or transverse rhomboidal. Cell narrow, about half the length of the wing. Membrane at the side of the lower median in the ♂ more or less wrinkled close to the cell, the lower median in one case (*O. amphirhoë*) strongly inflated. Cell with a hair-pencil in the posterior part or a hair-tuft in the anterior part behind the subcostal. In all cases at the submedian on a smooth friction-area a smaller hair-pencil, sometimes a brush-like tuft of hairs in or on a fold between submedian and lower median, or with a stripe of long, smooth, distally directed hairs on a mealy area between these veins. Abdomen short and slender, in one case (*O. amphirhoë*) more robust, with a swollen friction-patch at each side.

a) Section *Diophthalmi*.

Underside of the hindwing with two ocelli.

a) ♂ with a hair-pencil before the apex of the cell on the hindwing.

versitincta.

***O. versitincta* Stich.** (66 a) stands in the closest relationship to the species of the group *Opsiphanes* on account of the broad cell of the hindwing. ♂: body above brown, collar and frons red-brown, palpus yellow-brown. Ground-colour of the wings dark brown. Forewing with a deep ochre-yellow postdiscal band, in the apex three small obscure white dots. Hindwing unicolorous. In the cell, close to the median, a long hair-pencil, a brush-like tuft of hairs projecting from a fold before the submedian, a small hair-pencil on a scaleless friction-patch behind it. Under surface brown, forewing in the distal half striated with whitish, the band of the upper surface vaguely indicated by a lighter tone of colour. Between the radials a black, yellow-ringed, apical eye-spot with white pupil. Near the distal margin and parallel with it two black, slightly dentate submarginal lines, somewhat incurved below the eye-spot, the proximal one slightly bordered with orange-yellow for its whole length. In the cell three ill-defined undulate transverse lines. Hindwing striated with white with the exception of the grey-brown distal margin. Length of the forewing 43 mm. ♀: larger, brown, shot with delicate violet except at the apex of the forewing, most strongly at the base. Band of the forewing broader, lighter, proximally running through the end of the cell, at the anal angle somewhat pointed. In the black-brown apex three small white spots. Under surface as in the ♂, but lighter and with a yellowish tone. Length of the forewing 49 mm. Only 1 ♂ and 2 ♀♀ from Surinam and 1 ♀ from Cayenne known.

b) ♂ with a hair-pencil in the cell of the hindwing.

O. xanthus bears especially conspicuous hair-brushes at the submedian and a tuft of very long hairs in the cell of the hindwing. Three well differentiated local races, of which the most southerly *xanthus*, in particular is characterized by its size and by steel-blue sheen on the hindwing. — ***xanthus* L.** (63 b).

♂. Dark brown, very slightly tinged with reddish. Band of the forewing anteriorly only cut by the veins, but mostly from the bend onwards partially broken up into loosely connected spots. A more marked interruption occurs in particular at the middle median vein, whilst the posterior part is again connected proximally. At the proximal side there is a sharp and distinct angle in the upper median cellule, distally the band projects somewhat towards the distal margin in a rounded curve and in this spot-like part is placed a small whitish dot; the band terminates in a point in the hinder angle. Hindwing at the distal margin narrowly edged with reddish ochre-yellow from the apex to about the upper median vein. ♀. On the whole paler. Band of the forewing as a rule interrupted at the lower radial, so that it is split up into a short oblique band running distally to the cell and a row of 3 or 4 spots near the distal margin. The first of these spots, in the upper median interspace, is indistinct and anteriorly partly replaced by a whitish brown patch behind the eye-spot, which shows through from beneath; a less distinct light shade is observable in the following spot in the band. Hindwing as a rule lighter and more distinctly margined with yellowish. French and Dutch Guiana. — *soranus* Westw., known from Pará and in my collection from Obidas on the Lower Amazon in 2 pairs found by *soranus*. J. MICHAELIS in August and September, differs from *xanthus* in the broader red-brown band of the forewing and the lighter grey under surface of both wings. — *dohrni* Stich. (63 b). ♂ similar to the preceding, somewhat *dohrni*. larger, apex of the forewing rounded, little produced, upper surface brown-violet, hindwing and subapical part of the forewing showing, when viewed obliquely, a beautiful violet gloss. Forewing with angled rust-yellow macular band, beginning at the costa, beyond the cell, running obliquely to the upper median, then near the distal margin in the direction of the inner angle, touching the latter. In the apex three obliquely placed white spots and between the radials, in continuation of the row of spots before the distal margin anteriorly, a black eye-spot showing through from beneath. Hindwing unicolorous, at the distal margin duller brown, without marginal band. Beneath likewise similar to *xanthus*, yellow-brown, striated with whitish. Forewing with unicolorous border, in which run 2 moderately undulate submarginal lines parallel with the distal margin. Between the radials a black, yellow-ringed apical eye-spot divided by a white streak, before this 3 small white apical spots as above. In the cell an irregular, black-margined, darker transverse band and similar contiguous spots in the distal part. Hindwing with two ocelli, one beyond the middle of the costa, extending across the subcostal, yellowish, black-edged, proximally with white curved streak; the other in the anal area between the lower and middle medians, likewise yellowish, bordered with black, proximally with a white curved streak, the whole ringed with yellow and reddish. Distally to the precostal cell, adjoining it, a semicircular dark stripe, an angled streak between this and the anterior ocellus. Before the unicolorous distal margin a row of crescents marked by weaker and stronger striation, tending to form two arcuate submarginal lines. Coca, Ecuador to the east of the Andes at about 260 m. (type). Pozuzo, Peru, in coll. FRUHSTORFER. The rare ♀ was found by FASSL also at Villa Vicencio, East Colombia, at about 400 m. above sea-level. It scarcely differs from the ♂, but has the wings somewhat more compact, the patches on the forewing more rounded and a narrow but distinct red-orange terminal border on the hindwing. The whole upper surface paler, yet appreciably blue-violet and in contrast to the ♂ glossy on the forewing also. Under surface paler, more extended grey-white.

O. orgetorix is a very distinct species, formerly only known from Central America, but recently discovered also in Ecuador in a distinct race, so that there are 2 geographical forms to describe: **orgetorix** *orgetorix*. **torix** Hew. (64 a ♂), chiefly found at the Volcan de Chiriqui. ♂. Band of the forewing broad and pure reddish ochre-yellow, at the costal margin whitish, starting narrowly there, behind the subcostal much widened, running obliquely to the upper median vein, there somewhat angled and more vertical posteriorly. In the lower median interspace there is sometimes further a small brown spot. Both margins of the band, but especially the distal, ill-defined, more or less broken or notched. Proximally the angulation is rather distinct, distally less noticeable. The band gradually narrows and in the hinder angle forms a sharp curved point placed close to the margin of the wing. The eye-spot near the apex shows through from beneath and is mostly more or less pupilled with white, the distal border of the wing only indistinctly and slightly lighter. Hindwing at the distal margin with a reddish ochre-yellow band 5—6 mm. in breadth, narrow and paler-coloured at its commencement at the costal margin and ill-defined proximally. In the hinder angle it becomes narrow and duller and is lost in the ground-colour. Fringes brown. ♀. Forewing tinged with violet excepting the duller brown basal area, and with whitish violet transverse band distally to the cell. This band starts at the costal margin not far from the end of the cell and is intersected by the brown veins; it is white in its anterior part, separated into spots, then running obliquely towards the upper median vein, touching the lower angle of the cell, where it is obtusely angled, runs somewhat in a proximal direction as far as the middle median, then obliquely towards the hinder angle and terminates broadly at the hindmargin. Its distal edge is rather sharply defined, its proximal on the contrary indefinite. Distal margin somewhat more distinctly edged with rust-brown than in the ♂. Hindwing with gold-yellow marginal band similar to that in the ♂, but much broader, up to 13 mm., likewise narrowed posteriorly, in the hinder angle vaguely dusted with rust-red. Panama, Nicaragua. — **magnalis** *magnalis*. Stich. inhabits Ecuador. The ♂ larger than in the preceding subspecies, forewing more rounded, apex less produced. Band of the forewing narrowed and darkened, sometimes dusted throughout with smoke-brown. The

reduction in width is from the proximal side, so that the band appears to be placed nearer to the apex and its angulation is more pronounced. Its general course anteriorly is oblique from the costal margin towards the subapical eye-spot, which shows through from beneath, and from there in an obtuse angle towards the hinder angle. The distal border itself is distinctly lighter, so that between it and the band only a narrow stripe of the ground-colour remains, and this quite ceases posteriorly, the light shade of the band and that of the border here running into one another. Distal border of the hindwing narrower and duller, sometimes very little lighter than the ground-colour. In single cases the marginal band stands out somewhat more distinctly, its bordering being then strongly dentate. ♀ with broader, dull violet transverse band, less angled at the cell, anteriorly indistinct and distally strongly notched at the veins in the vaguely dusted bordering. The eye-spot in the apical part standing out very distinctly on the pale blackish ground-colour, distal margin more broadly bordered with lighter smoke-brown. This border is strongly dentate and rather distinctly defined, on the hindwing narrower and paler, light bone-coloured.

rivalis. **O. rivalis** Niep. is said to be very similar to *xanthus* L., agreeing in habitus with *xanthus dohrni* Stich. Wings somewhat narrower than in *dohrni*. Apex of the forewing almost pointed (?), distal margin more sinuate. Upper surface velvety chocolate-brown. Forewing with three apical patches, after these a black ocellus showing through from beneath, then posteriorly between the lower radial and the upper median a whitish yellow spot. The submarginal macular band not obtusely angled but gently curved. It consists of 7 spots of unequal size and of dark rust-yellow colour, mostly pointed proximally. The hair-pencil in the cell light brown, that at the submedian velvety black. Under surface as in *dohrni*, the yellow-brown colour more intensive, the white striation more pronounced, the black markings stronger. The posterior ocellus is said to be pear-shaped. Length of the forewing 54—55 mm. Maccas, Ecuador.

xanthicles. **O. xanthicles**, as its name already suggests, bears a certain similarity to *O. xanthus* L., but the hair-brush at the submedian of the forewing is less broadly attached and more bushy, pencil-like. **xanthicles** Godm. ♂. Dark brown, the band of the forewing runs from the costal margin at some distance distally to the end of the cell and parallel with the discocellulars obliquely to the upper median vein, is behind this bent round posteriorly in an obtuse angle and gradually tapers to a point towards the hinder angle. The proximal boundary is rather sharp and in places only a little notched, the obtuse angle somewhat rounded, the distal boundary projecting at the lower radial, the angulation sharper, otherwise running in a fairly uniform direction. Hindwing with several small, dull ochre-yellow apical spots or the rudiments of a marginal band at the apex. ♀. Ground-colour of the upper surface pale grey-brown, the apical area darker. Band of the forewing broader, pale ochreous. The widening occurs chiefly at the proximal side, so that the band is placed nearer to the cell and the obtuse angle is lost. The boundary-line forms here only a slight curve, whilst distally it shows exactly the same characters as in the ♂. Hindwing with more distinct, pale ochre-yellow marginal band, which, however,

cyparissa. just behind the apex is somewhat removed from the distal margin and vaguely diffused. Panama. — **cyparissa** Fruhst. (66 a). Ground-colour black-brown, forewing with the usual 3 white apical dots and with a dark ochre-yellow band traversing the wing from the costal margin (at a distance of about 7—9 mm.) distally to the cell and about the upper median approaching the distal margin, which it nowhere quite reaches. Towards the submedian the band is narrowed. On the hindwing it is continued as a moderately broad distal border, extending from the subcostal to the middle median and gradually narrowed posteriorly. Before the upper wall of the cell a long black hair-pencil (in *xanthus* this pencil is light yellow, in *berecynthia* black and small, in *amphirhoë* and *orgetorix* it is entirely absent), a still longer, thicker hair-pencil, distally strongly wavy, arising from a fold before the submedian, and the usual small grey scent-tuft in the bare scent-cavity proximally to the submedian. Under surface: basal half of the forewing dark brown, the submarginal area striated with white, the distal border anteriorly brown, posteriorly yellowish. From the black-pupilled apical ocellus onwards a narrow, sharply pronounced violet-white submarginal band traverses the wing. Hindwing with a broad, oblique brown median band, crossing the lower part of the cell. Round the large brown-ringed anal ocellus a broad, somewhat coffee-brown patch; otherwise with dense, fine white striation throughout with the exception of the greenish brown distal border. Two black undulate antemarginal lines extend on the hindwing from subcostal to submedian, on the forewing they become indistinct before the middle median. ♀ uniformly black-brown, the white apical patches somewhat larger than in the ♂. Band of the forewing nearly twice as broad, only moderately narrowed costally and anally, between the lower radial and the upper median enclosing a white dot in the distal part. Marginal band of the forewing compact, ochre-yellow, proximally with reddish gloss, sharply defined as far as the inner marginal vein. Under surface more copiously striated with white than in the ♂. Terminal border with brighter yellow-brown edging. Muzo, Colombia, 4—800 m., ♀

belisar. discovered by FASSL. — **belisar** Stich. Larger than the typical subspecies, of a darker ground-colour. Band of the forewing somewhat broader, bright reddish brown; proximal boundary-line without distinct angulation, crenate, distal boundary as in the typical subspecies. Hindwing with a bright reddish ochre-yellow marginal band 5—7 mm. in breadth at the distal margin, starting in a point at the apex, soon developing into the cell band and remaining distinct nearly to the hinder angle, where it is lost in the ground-colour in a vague dusting; its proximal boundary is somewhat curved. Otherwise like the typical subspecies. Length of the forewing 54 mm. Bolivia (province of Yungas, La Paz).

O. singularis Weym. ♂ above dark brown, in the end of the cell and behind it somewhat reddish. *singularis*. Apical area black-brown. In the distal part of the cell an irregular, deep ochre-yellow spot. Beyond the cell runs an ochre-yellow transverse band, curved somewhat basewards in the anterior part; it consists of 6 spots, of which the first three are more closely, the posterior ones loosely connected; at the upper median vein a rounded wedge of the ground-colour projects from the cell into the band, making a deep excavation in it. Near the apex is placed a comparatively large, rounded, light ochre-yellow spot. Hindwing nearly oval, from the base onwards brown; beyond the cell this colour gradually changes into rust-red and finally into an undecided deep ochre-yellow marginal band; before the subcostal, distally to and near the precostal cell, is placed an anteriorly directed ochre-yellow hair-tuft, in the posterior part of the cell and between this and the submedian strong brown hair not arranged in pencils or tufts, and on a bare friction-patch at the hindmargin, about in the middle of the submedian, a very small hair-pencil. Under surface of the forewing brown, variously clouded and shaded with lighter and darker. In and at the end of the cell confused black lines, which enclose and cover two band-like brown areas; between these some whitish dusting. In the lower radial cellule there is a black eye-shaped spot. Distal margin grey-brown; near it run two black lines, both lost near the hinder angle in the ground-colour, which is there grey-yellow. The apex is somewhat ochre-yellow, the hindmarginal area smoke-brown. On the submedian, near the base of the wing and covered by the anterior part of the hindwing, is placed a small, oblong ochreous scent-scale spot. Hindwing light brown, the proximal costal area before the costal somewhat darker, with transverse white striation, the part of the wing behind this area as far as the median covered with irregular dark figures; distally hereto there is a large, roundish, eye-like spot of various shades of brown, ringed with black-brown. In the posterior part of the wing there is a second black eye-spot, placed in a light brown ring, its inner disc dusted with yellowish and bearing a white streak; the whole is ringed with black-brown and stands in a brown-violet area. The rest of the wing striated and marbled with black-brown, the distal area more uniform brown, while the central part has a slight violet sheen; the striation is sharpest in the hindmarginal area. Length of the forewing 44 mm. Guatemala, only 1 ♂ known.

O. amphirhoë represents the *Catoblepia* group in central and southern Brazil. The species may be easily known by its characteristic light grey marbled under surface, on which the apical eye-spots are displaced far towards the distal margin. Two well differentiated local forms: **amphirhoë** Hbn., name-type probably *amphirhoë*, from Rio de Janeiro, where according to BÖNNINGHAUSEN (who erroneously called it *xanthus*) the larva, which is of a sea-green colour, lives on prickly palms. Both sexes essentially larger than the figured *placita*, the ochreous band correspondingly broader. Not very rare in Espirito Santo. — **placita** Stich. (64 a) is always smaller, *placita*, the band of the forewing always continuous, not broken up in the anterior intramedian area, as in *amphirhoë*. Under surface much darker. Forewing only with grey patches in the cell. Hindwing with more pronounced black clusters of scales, which are condensed and developed into a kind of submarginal band. Apparently common at Blumenau in Santa Catharina (8 ♂♂, 2 ♀♀ in coll. FRUHSTORFER); very rare in Rio Grande do Sul, whence I only have 2 ♂♂ from Candelaria. According to STICHEL an intermediate form seems to occur in São Paulo, details of which are not yet known. There is still much to be desired as regards the exploration of Brazil, which will provide one of the most remunerative tasks for the future.

b. Section Polyophthalmi.

Under surface of the hindwing with a curved row of 5 or 6 ocelli. ♂ above always with a hair-pencil in the posterior part of the cell, a smaller one behind the submedian and a brush-like tuft between this and the lower median.

O. berecynthia somewhat resembles *O. xanthus* L., except that the wings are more rounded and the scent-hairs at the submedian are drawn out into a pencil instead of attached as a broad brush. Several geographical races, some of them very sharply differentiated. **berecynthia** Cr. Band of the forewing varying in *berecynthia*, breadth, in quite typical specimens only narrow. It runs obliquely, without touching the cell, from the costal margin to the upper median vein, is then angularly curved posteriorly, gradually approaches the distal margin, is narrowed and terminates in a sharp point not far from the anal angle. Its proximal boundary is fairly smooth, only at the middle median vein somewhat notched, its distal margin less sharply defined, more or less incised at the veins. Hindwing with complete but narrow, or partially indistinct, rust-red band at or near the distal margin, in the former case as a rule only posteriorly touching the margin, anteriorly somewhat removed from it. On the underside of the forewing the proximal of the submarginal lines only weakly curved, the distal one placed rather near the margin. ♀ paler, band of the forewing broader, its proximal boundary touching the discocellulars, at the posterior angle of the cell, between the middle and upper median veins, projecting basewards in a tooth, the angulation less sharp, but quite appreciable at the distal boundary. Hindwing at the distal margin with complete rust-red band, which in the anterior part is somewhat removed from the margin. Under surface less bright, the lines near the distal margin of the forewing more strongly curved. Two known aberrations in the form of the band: **latitaenia** Fruhst. (64 a). Band of the forewing widened and strongly *latitaenia*, angled, the yellowish distal margin of the hindwing dull. **velata** Stich. Band of the forewing narrowed and *velata*, darkened, partially, occasionally even entirely, blurred and indistinct. In the ♀ the difference is less striking,

but the band is paler in colour, occasionally likewise washed-out and somewhat darkened, always narrower than in the type-form; it remains as a rule somewhat removed from the end of the cell, more rarely slightly touching it at the origin of the lower radial. Hindwing in the ♂ unicolorous or only with indistinct or clouded remains of the marginal band; in the ♀ the posterior part of this band is present, but dull, anteriorly it is obsolete or transformed into small dull spots. Guiana and Lower Amazon. — *midas* Stich. Type from Coca in East Ecuador. ♂: ground-colour dark black-brown. Band of the forewing less sharply bent than in the typical subspecies, forming at the proximal boundary only a slight curve, at the distal an obtuse angle in the upper median cellule. Proximally it is but little incised at the veins, at the middle median occasionally somewhat more strongly, distally it is more broken and less sharply defined. In the hindwing there is a narrow rust-yellow distal band, which starts posteriorly in a point, in the hinder angle immediately adjoins the distal margin, and is there broadest, about 4—5 mm., is then removed to about the same distance from the margin, narrowed and broken up into spots. — *luxuriosa* Stich. ♂: differing from the preceding in having the band of the hindwing only present as a broad rust-yellow spot in the anal angle, about from the submedian to the upper median. The distal margin otherwise unicolorous. Band of the forewing broad, the distal boundary somewhat dentate and angled, the proximal likewise incised at the veins, filling the upper part of the cell. Ocelli on the underside of the hindwing large and brightly marked. Each surrounded by a broad rust-yellow patch, the patches connected so as to form a sinuous undulate band, in which the ocelli are placed. Length of the forewing 49—50 mm. ♀ larger than the ♂, ground-colour lighter. Band of the forewing extending considerably into the distal part of the cell, so much so indeed, that the latter is filled up with rust-yellow from the upper angle to the origin of the middle median. Length of the forewing 54 mm. Colombia (Muzo?). — *vicenciona* subsp. nov. somewhat resembles *unditaenia* above in the band of the hindwing, on the other hand that of the forewing, as in *luxuriosa* Stich., touches the apex of the cell, but is distally even somewhat more broken and anally narrowed. Before the cell-wall, just at the origin of the lower radial, stands a circular spot, which is not broadly diffuse as in *luxuriosa*. Subterminal band of the hindwing deeper reddish yellow than in *unditaenia*, anteriorly not broken up into separate spots and anally extending to the distal margin, thus somewhat widened. Under surface: cells red-brown, but the apical part and the whole submarginal area of the forewing grey-violet, hindwing with four green-pupilled posterior eye-spots and two anterior ones filled up with reddish. East Colombia, Villavicencio, 400 m. (FASSL leg.). — *adjecta* Stich. ♂ above deep black-brown. The band of the forewing proximally touches the discocellulars and is gently bent, not angled as in the typical subspecies, also somewhat broader on an average. Distal marginal band of the hindwing towards the hinder angle considerably widened, anteriorly narrower, at the apex tapering to a point and in the anterior half somewhat removed from the margin. The bands of both wings bright reddish ochreous. Under surface, as in the following subspecies, brightly coloured, the distal eye-spots occasionally developed into a complete chain across the entire breadth of the wing. Bolivia, Amazons (in transitions). — *berecynthina* Hopff. (= *vercingetorix* Stgr.). ♂: band of the forewing proximally widened in such a way that the angle is completely filled in and the boundary-line runs in a curve. The proximal boundary occasionally crosses the distal part of the cell, the discocellular, however, remaining brown. In this case its margin is incised at the median and anteriorly in the cell vaguely dusted. At the distal boundary the angle in the upper median cellule is, however, more distinct. The posterior part and the point at the extremity are much broader than in the typical subspecies. Hindwing at the distal margin with an entire-margined band, which starts in a point at the hindmargin, quite near the hinder angle, soon widens to a breadth of 8—9 mm., anteriorly is gradually narrowed again and somewhat removed from the margin, and terminates almost in a point in the apical area. In transitional specimens the band is narrower in the posterior part, the narrowing less gradual and the anterior part more or less broken up into spots. ♀: the band of the forewing crosses the distal part of the cell, at least its posterior angle; band of the hindwing similar to that of the ♂, but still broader, up to 12 mm. The bands of both wings paler in colour than in the ♂, the brown ground-colour also less deep, the eye-spot of the under surface between the radials of the forewing showing through strongly above as a filled-up black circle. Peru, Bolivia. — *unditaenia* Fruhst. (64a) was already known to HÜBNER and figured by him as *berecynthia*. But HÜBNER's and our figures differ considerably from CRAMER's name-type: 1) in having the band of the forewing not elbowed or angled, but forming a neat curve; 2) in the broader and more intensively red-yellow bands of both wings; 3) in the brighter red-brown under surface. These three differences at once characterize the new local form which has not hitherto been noticed and in which the bands are almost as much widened as in the typical *berecynthia* Cr. ♀♀, but brighter coloured and more sharply defined. I have seen no examples in which the black border occupies the entire distal margin, as in HÜBNER's figure. In my Rio ♂♂ this border only reaches to the upper median; this and some other variations are naturally unimportant and mostly individual. In respect of the tertiary sexual characters, *unditaenia* differs from the type in four modifications: 1) the much longer and denser hair-tuft at the inner margin of the forewing; 2) the scent-pencil at the upper cell-wall of the hindwing much stronger and completely covered by this hair-tuft; 3) the entirely black hair-pencil (in *berecynthia* basally yellow); 4) the longer hair-tuft in the shiny scent-cavity of the submedian. Coll. FRUHSTORFER, type 1 ♂ from Rio de Janeiro, according to STICHEL 1 example from São Paulo in coll. STAUDINGER.

O. generosa Stich. ♂. Nearest to *O. berecynthia* Cr. Larger, stumpier, forewing with rounder apex. *generosa.* Ground-colour black-brown. Forewing with three small white apical spots and a broad, elongate, oblique gold-yellow discal band, of which the distal boundary runs near the cell, outside it, and the proximal boundary crosses it, so that fully one-third of the cell is filled up with gold-yellow. The margins of the band, especially the distal, not appreciably dentate. Beneath the ground-colour beyond the cell is yellowish, strigulated and clouded with black-brown, gradually becoming duller, particularly in the anterior part. Near the apex there is some whitish striation and the three small white spots of the upperside. Between the radials is placed a round, black, yellow-ringed and blackish-bordered eye-spot, containing a white streak. Distal marginal area separated from the striated part of the wing by a concave ochre-yellow stripe, which is particularly brilliant posteriorly. Hindwing above unicolorous brown with the exception of the hinder angle, which is golden yellow, and from which the beginning of a band bordered with duller yellow can be traced near the margin almost to the upper median vein. Sexual characters as in the preceding species, but the tuft before the median and the small pencil on the bare friction-patch at the submedian are wanting. Under surface yellow-brown, with two blackish lines in a narrow distal marginal area. The rest of the wings striated and clouded with brown; adjoining the precostal cell a yellow-red, dark-margined spot, two similar, less distinct spots in the cell. Distally to these an undulated row of 6 more or less distinctly ocellated, round spots, the posterior 4 or 5 connected into a sort of chain by a light bordering. The first spot, placed behind the middle of the costal margin, red-yellow bordered with black, enclosing a white curved streak, the following two with indistinct pupils, the rest with large black pupils, which are almost entirely dusted over with greenish yellow and anteriorly also more or less distinctly edged by a white curved streak. Between this chain of spots and the distal marginal lines whitish striation, which stands out from the reddish ochre-yellow ground-colour in loosely connected lunules or pointed marks. Eastern Ecuador, Peru (Pebas).

Group *Selenophanes* Stgr.

Upper and middle discocellulars sharply right-angled. Costal and subcostal narrowly but distinctly separated. The latter 5-branched. Two branches before the end of the cell, the first at some distance proximally, the second just before the cell, the third branch arising midway between cell and apex, all three into the costal margin, the fourth arising shortly before the apex, running into it, followed by and forked with the fifth. Cell long, only moderately broad, distally rectangular at both sides. Anterior discocellular very short, middle arising at an acute angle from this, shortly curved and then continued without a break by the somewhat longer posterior discocellular. Median in the ♂ inflated near to the base. One species (*O. cassiope* Cr.) beneath before the submedian with a raised, mealy scent-spot, to which corresponds a mealy friction-patch between the costal and subcostal on the upperside of the hindwing. Hindwing with the apex rounded and the anal angle mostly rather pointed, only in one species (*O. josephus* Godm. & Salv.) rounded; ♂ without manifest hair-pencils or brushes, but between submedian and median with long hairs, in two species (*O. supremus* Stich. and *josephus* Godm. & Salv.) above the subcostal, close to the precostal cell, an anteriorly directed hair-tuft, covered by the hindmargin of the forewing, one species (*O. josephus*) with an almost triangular pilose black scent-spot between the posterior and middle medians. Precostal cell very narrow, precostal vein extending considerably beyond it. Costa proximally strongly lobed. Cell narrow and long, more than half the length of the wing. Abdomen without lateral friction-glands or protuberances.

a) Forewing of the ♂ beneath with pilose scent-spot before the submedian. Hindwing with mealy friction-patch before the subcostal or erect hair-tuft close to the precostal cell.

O. cassiope Cr. Dark brown, at the costal margin near the apex almost black. Oblique band of the fore- *cassiope.* wing anteriorly pale, then light reddish ochreous; it runs from the costal margin obliquely to the hinder angle, where it forms on the submedian a blunt point bent towards the hindmargin. Breadth of the band about 8—10 mm. Hindwing unicolorous, sometimes with a somewhat obscure yellowish brown band near the distal margin or immediately at it. Mealy spot in the costal area grey-black. ♀: larger; mostly duller, with the band of the forewing somewhat paler. The latter, however, considerably broader, up to 12 mm., posteriorly more obtuse, distally more dusted and broken, but, as in the ♂, running for its whole length outside the cell, although with its proximal boundary touching the discocellulars. Distal margin below the apex narrowly dusted with more or less bright yellowish, this dusting sometimes developed into a sharply defined band as far as the middle median and then gradually shading into the brown ground-colour. Hindwing usually unicolorous with dull brownish yellow distal-marginal dusting behind the apex. This dusting as in the forewing occasionally consolidated into a band, but before the hinder angle gradually becoming duller and more indefinite; sometimes there is also a more or less distinct undulate band near the distal margin, about from the subcostal to the upper or middle median vein (transitions to *amplior* and *cassiopeia*). Guiana, northern Brazil (Lower Amazon). — **cassiopeia** Stgr., from the Upper Amazon and Peru. ♂: band of the forewing as a rule not *cassiopeia.* so broad as in the preceding subspecies, proximally likewise filling up about one third of the cell, distally more regularly oblique. Its proximal bordering more strongly broken, especially deeply incised at the median and in the lower median cellule, the distal boundary also sometimes more broken up. ♀: band of the forewing of uniform breadth, a very large quadrate spot before the apex of the cell. Hindwing with distinct yellowish grey marginal band, deeply incised proximally, and a narrow reddish yellow submarginal band, which disappears at the middle median. Under surface darker than on STAUDINGER's figure of the ♂ in Exot. Tagf. pl. 71. Hind-

amplior. wing only towards the costa slightly lighter. Villavicencio, East Colombia, 400 m. — *amplior* *Stich*. An intermediate form between *cassiope* and *cassiopeia*. Smaller than the latter. Band of the forewing broader, bright orange-yellow, margins less dentate. Submarginal band of the hindwing narrower than in the preceding, but distinct, undulate (crescentic), present from the costa to the lower median, then obsolete, shading into the ground-colour. Length of the forewing 54 mm. 1 ♂, from Colombia. This form also occurs on the Lower

theognis. Amazon as an aberration together with the type-form. 1 ♂ in coll. FRUHSTORFER from Obidos. — *theognis* *Fruhst.*, from Matto Grosso, is a further intermediate form connecting *cassiope*, *cassiopeia* and *placentia* and differing from all three in having the band on the forewing brighter red-yellow but much narrower. The hindwing has a grey-brown distal border composed of crescentic patches filled in with deep black, and a distinct longitudinal line, anteriorly somewhat ochreous, anally red-brown. Under surface lightened as in *cassiopeia*.

placentia. — *placentia* *subsp. nov.* ♂: intermediate between *theognis* and *cassiopeia* *Stgr.*, but approximating more to the neighbouring race from Brazil. Band of the forewing more regular, broader and of lighter yellowish ground-colour. Hindwing with the markings more washed-out, the black submarginal band in particular more broken up, the yellowish postdiscal band anally lighter. Under surface with more extended dark shading in the distal area, with more prominent black lines. Coroico, Bolivia, 1200 m.

andromeda. *O. andromeda* *Stich*. Bolivia. A handsome species. Oblique band of the forewing broader than in *cassiope*, fiery rust-yellow, at both sides darker and with dashes projecting into the ground-colour. Distal margin of the hindwing broad, over $\frac{1}{2}$ of the latter fiery rust-yellow, proximally darker, gradually shading into the ground-colour. Next to the distal border a submarginal black undulate line. Ground-colour of the under surface reddish brown, less whitish than the Amazon form and *placentia* *Fruhst.*

O. supremus differs from *cassiope* in the straighter course of the band of the forewing. Two very rare subspecies: *supremus* *Stich*. Apex of the forewing moderately produced, distal margin correspondingly shallowly excised. The zigzag band of the forewing in the middle about 8 mm. in breadth, anteriorly smooth-margined, posteriorly rather sharply dentate; it forms in its general course two curved sections, an anterior one from the costal margin to the middle median vein and a somewhat shallower one from there to the hindmargin. On the middle median it projects in a long pointed tooth proximally towards the cell. Band of the hindwing present near the distal margin and in the middle part, from the upper radial to the upper median, as two connected, pointed curved spots. Before and behind this only some dull brownish dusting is visible, indicating the continuation of the band. The middle part of the band is likewise ill-defined and slightly darkened.

ditatus. Ecuador. — *ditatus* *Thieme* is somewhat larger, apex of the forewing a trifle more produced, distal margin somewhat more deeply concave. Band of the forewing a little narrower, on the other hand the bright rust-yellow band near the distal margin of the hindwing broader, more sharply expressed and completely formed almost to the hindmargin. It is likewise composed of pointed curved spots, its margin projecting distally in pointed curves in the interneural spaces, and being proximally hollowed out at the same places and on the veins produced into points. Distal margin of the hindwing tinged with yellowish brown, lighter and more decided than in the typical subspecies. Southern Peru and Central Peru (Huancabamba, 1500 m.).

O. josephus bears a nearly triangular black scent-spot between the lower and middle medians on the forewing above. The ocelli of the under surface, in contrast to those of *O. cassiope*, are oval or rounded instead of reniform or falcate. Only a few examples are known, which divide into two local forms: — *josephus* *Godm.* and *Salv.* Apex of the forewing in the ♂ pointed, almost falcate. Transverse band ochre-yellow, posteriorly more reddish, its inner margin jagged, especially in the anal part of the wing. Before the apex 3 small white spots. Beneath the lines before the distal margin are less undulate and diverge but little in the middle. Guatemala.

excultus. — *excultus* *Stich.* (66 a). Apex of the forewing somewhat more obtuse. Band broader, deeper reddish ochre-yellow, its proximal margin less incised and broken; it is of a whitish yellow tone at its commencement on the costal margin, and 7—8 mm. in breadth; runs obliquely to the anterior median vein, touching the discocellulars; is distally dentate before this vein, proximally somewhat retracted behind the cell, and from here directed somewhat more vertically towards the hindmargin. Its inner margin is somewhat sharply broken at the middle median vein, in the interneural spaces slightly incised, its outer margin notched at the two anterior median veins, afterwards entire. The band terminates in a basally directed point in the anal angle. Hindwing unicolorous, or with a narrow, curved, obscure rust-red band before the distal margin. The lines near the distal margin on the underside of the forewing in the middle somewhat more divergent and more strongly dentate, underside of the hindwing deeper brown. Colombia.

O. lutescentefasciatus *Kirby* is a doubtful species of the subgenus *Opsiophanes*, and is only mentioned here because KIRBY has given it in his "Catalogue". In shape and size similar to *O. cassina cassina* ♀; upper surface brown, above and beneath a broad yellowish median band running parallel with the distal margin. Under surface reddish, the band deep yellow.

6. Genus: *Eryphanis* *Bdv.*

The species united here were formerly referred to *Caligo*, until BOISDUVAL separated them in 1874 as a distinct genus, although the differences in neuration are of little importance, the divergence consisting rather in the different form of the ♂ sexual characters. *Eryphanis* differs superficially from *Caligo* in the weaker build of the body and mostly in the fiery colouring of its species. In the neuration of the forewing the middle

discocellular and the lower are not so long as in *Caligo*, not so transversely placed, but obliquely joining the median at its 3rd branch. This same is the case with the cell of the hindwing, but the precostal cell is quite as small as in *Caligo*. The ♂♂ possess at the inner margin of the hindwing a strikingly large elongate or rounded, yellowish pilose spot, consisting of long, spatulate scent-scales. In addition they have, like *Caligo*, a shiny area, of lackered appearance, at the submedian, corresponding with a gland on the abdomen; the hair-pencil is wanting. The clasping-organs show more analogy with *Opsiphanes* than with *Caligo*, to which the genus is otherwise apparently nearer. Tegumen as in *Opsiphanes* and the *Satyridae* with a hook-shaped uncus which bears two lateral, ventrally smooth points. The valves long, slender, dorsally sharply dentate. The range of this genus extends over northern South America and through Central America to Mexico. In the south, like the genus *Opsiphanes*, it does not extend beyond Rio Grande do Sul and Bolivia. — Egg the same size as those of the Morphids, spherical, somewhat flattened above and beneath and on these flattened parts dark brown, otherwise whitish grey. Round the greatest circumference runs a broad, deep dark brown stripe, which, however, at one side is not closed but remains open for about $1\frac{1}{2}$ mm. Larva on bamboo. It keeps the anal fork compressed, so that it looks not unlike a Sphingid horn. Pupa elongate and as pointed at the head as at the anal end. According to Dr. HAHNEL the butterflies present a magnificent show of colour when in the shade of the woods they suddenly let their wonderful deep dark blue flash out. According to my experience in Santa Catharina the *Eryphanis* are fond of feeding at the sap flowing out of trees in the undergrowth, on the stems of which they sit with the wings folded, and it is also occasionally possible to attract them with overripe bananas. They are, however, nowhere found in large numbers. — Only 6 species are yet known. They are divided into two unequal groups according to whether a brush of hairs is present on the friction-area of the hindwing.

a) ♂ without hair-pencil on the bare inner-marginal area of the hindwing.

E. polyxena, distributed in collections under the name *automedon* Cr., inhabits the whole of South America from Venezuela to Paraguay, also Central America and Colombia to Ecuador and Peru, and splits up into five known branch-races: **lycomedon** Fldr. Forewing in the ♂ blue-violet in the discal part, distal margin *lycomedon*. dirty ochre-yellow, band washed-out; hindwing dark brown with narrow yellow-brown distal margin and dull lilacine gloss; ♀ dull brown, the end of the cell darker, in the dark brown distal area a rather sharp, ochreous undulate band, anteriorly forked, but the outer branch washed-out. Disc of the forewing with a dull, grey-blue gloss; in the cell sometimes 2 diffuse spots. Disc of the hindwing with blue-green reflection. Central America and Colombia. — **polyxena** Meerb. (64 b ♂, c ♀ as *automedon*). Above black-brown; ♂ nearly black, *polyxena*. discal part of both wings with beautiful blue reflections; forewing before the distal margin often with narrow yellowish band, forked towards the costa. ♀ duller, costal and apical borders yellow-brown, basal half grey-brown, distally with slight blue-green reflection. Venezuela, Trinidad, Guiana, North and Central Brazil, about as far south as to Rio de Janeiro. — **wardi** Bdv., originally coming from Matto Grosso, but at first described *wardi*. by its author himself with the erroneous locality "Guatemala", was a lost form, of which I first received authentic examples last year, from the neighbourhood of Cuyaba, Matto Grosso. *wardi* is distinguishable above from *polyxena* by a slight violet shade, somewhat agreeing with that of *lycomedon*, and the more marked, pale yellowish, but still obsolescent submarginal band connects it with *novicia* from Ecuador and *lycomedon* from Colombia. The ♀ may readily be distinguished from the Brazilian *polyxena amphimedon* by an extended, nearly light yellow subapical (transcellular) area and two isolated yellow patches before the apex of the cell of the forewing. — **amphimedon** Fldr. has very extended indigo-blue gloss on the upper surface, encroaching on the obscure yellowish band before the distal margin and on the hindwing only leaving a narrow margin. Distal *amphimedon*. margin of the hindwing less strongly angled at the lower median vein; ♀ with the blue colour more extended and more brilliant. Hindwing purer blue-grey in the basal part, the latter more sharply defined. According to VON BÖNNINGHAUSEN very rare in shady places at Rio. Larva described in the generic diagnosis. From Blumenau, Santa Catharina, in my collection; according to STICHEL also in Paraguay. — **novicia** Stich. Some- *novicia*. what smaller than *lycomedon*. Above darker, predominantly brown, with only a slight violet tinge in the central area of the forewing. The band near the distal margin of the latter purer. Hindwing distinctly angled, narrowly but rather sharply margined with ochre-yellow. La China, province of Los Rios (Ecuador). — **tristis** Stgr. The ♂ differing from the preceding subspecies in having much less blue on the hindwing. This *tristis*. dusting is here only present near the apex as a small spot, which at an oblique angle of light occupies a larger space. Southern Peru. — **cheiremon** subsp. nov. closely approaches *wardi* Bdv. from Matto Grosso, as is so com- *cheiremon*. monly the case in Bolivian subspecies, but is larger and bears a much longer yellow mealy spot in the anal fold of the hindwing. The blue of the upper surface is brighter, on the hindwing more sharply defined. The under surface more resembles that of *lycomedon* Fldr. from Colombia, but the subbasal part of the forewing and the basal area of the hindwing are silver-white instead of yellowish resp. grey-brown. Ground-colour in general also lighter, rather to be called grey than brown. Coroico, Bolivia, 1200 m. — **spintharus** Fruhst. A conspicuous *spintharus*.

local form from eastern Colombia, which there replaces *lycomedon* Fldr. and is much nearer to the Bolivian *cheiremon* and *wardi* Bdv. from Matto Grosso. ♂ with the submarginal band of the forewing nearly twice as broad as in *lycomedon* and grey instead of yellowish, the refleteion on the upper surface brilliant blue, not violet; ♀ differing from that of *polyxena* Meerb. in having a broader, paler yellow-grey longitudinal band on the forewing, distally enclosing two large black spots (ocelli). Apex of the cell and the whole circumcellular region pale yellow-grey. Basal part of the cell black instead of dark blue as in *automedon*. Hindwing with only a restricted glossy blue discal area. Cell grey-black, the distal border extending nearly to the cell, deep black. Under surface lighter than in *automedon*. Apex of the cell and median part of the forewing, basal and median area of the hindwing nearly whitish grey, with slight purple tinge. Upper Rio Negro. East Colombia, 800 m., discovered by FASSL.

E. reevesi divides into three branch-races in central and southern Brazil. In habitus it approaches *E. polyxena amphimedon* Fldr., together with which it occurs. The ♂, however, is easy to distinguish from *amphimedon* by its smaller size and dark blue-violet ground-colour and the ♀ by its brighter yellow but narrower bands. *reevesi* is regarded as the commonest of the known species; it is not difficult to bait it with fruits spread out or hung up and it is found in Sta. Catharina, both in the elevated localities and in the hot valleys at the "Waldschänken", where it often drinks at one place for hours. But the scales are very loosely attached and it is difficult to obtain perfect specimens. — *hemichroa* Btlr., described from Minas Geraes, probably differs somewhat from exemplars from Rio de Janeiro and Espiritu Santo, and may be taken to include specimens from Bahia, which differ from more southern *reevesi* in their small size and also in the somewhat paler violet of the upper surface and the predominantly pale grey-brown under surface, which in Bahia ♂♂ appears washed-out as in the more southern ♀♀ of the collective species. — *reevesi* Westw. extends with little variation from Espiritu Santo to Santa Catharina, where I found it from January to March in dark forests. Forewing of the ♂ dark brown, distal margin grey-yellow; distal part tinged with deep violet; this colour is anteriorly broad, extends into the posterior, projecting angle of the cell, and is narrowed towards the hindmargin; the apex remains free. Hindwing similar, but with the violet shade darker and still more ill-defined. In an oblique light the blue shows here distally and behind the cell as a vaguely defined median area, brighter on the veins than in the interspaces. Scent-spot in the anal area spongy, surrounded by a narrow, light glossy ring, placed in a distinct hollow in the membrane of the wing, visible on the under surface as a raised swelling. Length of the forewing, ♂ 53, ♀ 55 mm. — Larva (according to G. W. MÜLLER) on *Olyra latifolia* L. and *Bambusa*; it sits close and broadly appressed on the underside of the leaves. Body when young yellowish with red dorsal and lateral stripes, slender, posteriorly narrowed, with long forked tail, which in the resting posture is horizontally pressed together or separated and erected. Afterwards green-red with dark dorsal line, red, white and brown longitudinal stripes; when full-grown the dorsal area pure green, posteriorly and anteriorly narrowed, terminating in a point on the 11th segment, finely edged with brown; lateral stripes brown and white, at the posterior margin of the middle segments black warts (false spines) of considerable size. Head large, broad, elongate, anteriorly steeply sloped, approximately quadrate, with 3 pairs of short horns; at first whitish with brown stripes, afterwards dark green in the middle with white, brown-edged stripes, which viewed from above, run in the same direction as the stripes of the body. — Pupa elongate, similar to the rolled-up leaf of a Monocotyledon, with very long horns placed close together, angles indistinct, ground-colour dirty brown-yellow.

E. zolvizora is a very rare species, which is distributed from Colombia to Bolivia and of which two branch-
zolvizora. es have been described. — *zolvizora* Hew., originally from Bolivia, perhaps distributed northwards as far as Peru. Upper surface dark red-brown with a band on the forewing composed of four or five crescentic ochre-yellow spots and yellowish brown terminal border on the hindwing. Under surface brown with a broad yellowish white subbasal and an angled, similarly coloured but much narrower median band. Otherwise very similar to *reevesi*, which it replaces in Bolivia and the Andean region. Known to me from Corsico, Bolivia, 1200 m. —
opimus. *opimus* Stgr. is the northern branch. In it the band of the forewing is more continuous, somewhat narrower, the longitudinal stripes on the underside somewhat extended, more yellowish, somewhat narrower. Type from Manizales, in the Cauca Valley, West Colombia, before me from the Rio Aquaca Valley, West Cordillera, Colombia, from 2000 m. In Ecuador and Peru occurs an allied race, which has not yet been sufficiently noticed, although STAUDINGER has already pointed out some slight differences. The egg is similar to that of *C. oberthueri* Deyr. in size and appearance, but with protuberances at both sides. The colour is bone-white, but in consequence of a fluid which is secreted by the ovipositor it looks as if irregularly plastered with rose-red. The rare ♀ mostly attains the size of a small *Caligo*.

E. seleucida Hew., another rare species, is above similar to *Caligo illioneus* Cr. Under surface remarkable for the strikingly large ocelli. ♂: above rust-brown, anteriorly in the median area somewhat lighter, distal area broadly dark brown, the margin itself narrowly dirty ochre-yellow. Near the distal margin with a narrow, undulate, ochre-yellow, slightly reddish transverse band, from which arises anteriorly, but indefinitely connected, a short, strongly curved and angled, somewhat duller coloured accessory band, which, however, like the main band, does not quite reach the costal margin. In the fork of the bands 2 black spots and at the end of the principal branch

of the band 2 small white dots. Beneath the median area forms a broad band, brown, distally tinged with lighter and darker ochreous, bordered on each side by a whitish stripe and distally in addition bounded by a twice broken black-brown line. Succeeding this the distal area is in its anterior, triangular part brown striated with white, posteriorly and distally with two black, yellow-ringed eye-spots, placed one behind the other, before these another black spot and two blind eye-spots near the apex. The area distally to the cell copiously dark-striated, bounded by a dark undulate line edged with ochre-yellow or whitish. Distal area rust-brown, likewise with dark, whitish-bordered line near the wing-margin. Hindwing with pale brown hindmarginal area, a bare friction-patch with pencil-like hairing between submedian and hindmarginal vein and a large mealy scent-scale spot in the region of the hinder angle. Ground-colour otherwise dark brown, in the middle of the wing tinged with reddish, distal margin narrowly bordered with rust-brown. Under surface in the basal and distal areas brown, profusely striated with black or black-brown. Median area broadly band-like, dark brown with white bordering. The area behind the eye-spots more or less striated with whitish. In the anterior part of the median area is also placed a large dark brown eye-spot with yellowish ring and white pupil. In the distal marginal area there is an undulate line bordered with light brown. ♀ unknown. Bolivia.

b) with brush-like hair-tuft close to the submedian of the hindwing.

E. aesacus comes from Central America, extending from Mexico to Colombia and dividing into two local forms: **aesacus** H.-Schäff. (64 b) is the smaller subspecies. ♂: Forewing near the distal margin with faint ochre-yellow transverse band, which is distinctly forked anteriorly as in the preceding species and almost to the same extent as in the ♀ of the present subspecies. The median area of indigo-blue tone, anteriorly only distinct as far as the upper median and the end of the cell, distally as far as the transverse band, which is itself faintly tinged with blue. Hindwing behind the apex near the distal margin with the blue tinge only in patches, in the middle of the wing becoming more or less of a band posteriorly. The distal margin is very nearly round, only at the middle median vein with an obtuse, scarcely appreciable angle. ♀ paler, the pale blue tinge on the forewing of a light violet tone, vaguely defined, leaving the end of the cell free, but rather distinctly developed into a broad band from the costal margin obliquely to the hindmargin. Hindwing at the base without blue dusting; indistinct traces of this first appear near the middle of the cell, whence it gradually increases in sharpness and forms in the middle of the wing a spot extending to just beyond the end of the cell and there somewhat more sharply defined. Mexico (from whence the type came), Guatemala and Nicaragua. Everywhere rare. From Honduras in coll. FRUHSTORFER. — **buboculus** Btlr., described from Costa Rica, extends southwards to Colombia. Larger than *aesacus*, darker coloured and beneath more sharply marked. According to FASSL is one of the highest flying Brassolids in the Colombian Andes. — **juruana** subsp. *juruana*. nov. has rounder wings, is above more blue instead of violet and the yellow submarginal band of the forewing is narrower. From the Rio Juruá, a southern tributary of the Amazon (type in coll. STAUDINGER).

E. gerhardi Weeks is a species of which only a few examples have yet been found and was placed by its author in the genus *Caligo*. Upper surface brown, tinged with dark blue except at the costal margin. Under surface reddish ochreous. Costal margin of the hindwing somewhat flattened, at the apex rounded and passing gradually into the strongly undulate distal margin, the latter slightly angled at the middle median vein, anal angle fully rounded, basal area strongly hairy to the middle of the cell. Upper surface brown, a broad, ill-defined stripe, about from the middle of the cell nearly to the distal margin, suffused with blue; the hindmarginal area vaguely yellow-grey, posteriorly with grey-blue gloss, with a large, oval mealy whitish-yellow scent-spot, proximally adjoining the hindmarginal vein. Under surface reddish ochre-yellow, basal area and the zone behind the cell as far as the distal margin rather uniformly and finely striated with blackish. A transverse band in the middle of the wing vaguely red-brown, distally not sharply defined, proximally distinctly bounded by a silver-white transverse stripe which forms a continuation of the white band on the forewing. The stripe fades out posteriorly at a raised spot which indicates the scent-scale spot of the upper surface. In the cell, touching the stripe, there is an irregular zigzag marking, two pointed oval figures follow at the end of the cell, and in its anterior angle is placed a white spot. ♀ still unknown. Bolivia, Ecuador (Sarayacu). — In **pusillus** Stich. the ♂ is smaller than in the preceding form; the violet-blue dusting lighter and somewhat more distinct, broader on both wings, especially posteriorly and towards the apex of the forewing and the distal margin of the hindwing. The latter more obtusely angled at the middle median vein, apex of the forewing likewise somewhat more obtuse and less produced. Paraguay, Rio Grande do Sul. MABILDE bred *pusillus* on one occasion. The ♀ laid in captivity on the 1st of November 10 eggs, from which after 8 days emerged larvae of dark green colour; these moulted within 15 days, repeating this four or five times down to the 14th January and for the last time on the 4th March. The pupal stage, however, lasts only 13 days, while the larvae feed sometimes for 2 months, occasionally even for 4. The pupa somewhat resembles that of *Caligo martia*, but is more delicate, more compressed, of lighter colour, with a slight rosy gloss and separated light patches. The butterfly flies in Rio Grande throughout the summer and autumn, inhabits the forests and bamboo district, but is nowhere common.

7. Genus: *Caligo* Hbn.

To this genus belong the most imposing forms of the whole family, which equally with the *Morphids* contribute to the character of the South American insect fauna, as some species are even among the commonest butterflies throughout the whole region. They are noteworthy not only for their gigantic size and the peculiar, mostly dull but nevertheless often very rich colouring of the wings, but also for their crepuscular habits, which do not fail to impress even the layman. Structurally *Caligo* nearly approaches the genus *Eryphanis*, with which it agrees in the small precostal cell of the hindwing, notwithstanding the gigantic size of the species. The *Caligonids* differ, however, from *Eryphanis* in the longer and more distinctly angled middle discocellular of the forewing, and the lower discocellular is steeper, not placed almost transversely. The oval androconial spot at the inner margin of the hindwing which is characteristic of *Eryphanis* is wanting in *Caligo*, but they have in common with the former a bare friction-area adjoining the submedian, either with or without hair-pencil, and anteriorly at the subcostal a more or less distinct mealy spot. The pattern of the under surface reaches in *Caligo* the highest development of all the *Brassolids* and consists of delicate, reticulate, waved figures and striation, arranged in alternately light and dark shades on and in contrast with the yellowish ground. On the hindwing two large, brilliantly marked ocelli stand out very effectively, the anterior often crescentic, placed between the costal and subcostal, the posterior larger and placed between the first two median veins, often extending across them. These ocelli bear in their designs the greatest resemblance to the eyes in a peacock's tail, except that the latter are of a shining blue, whilst in *Caligo* the ground-colour is a beautiful orange, gradually shading off through brown into the deepest velvety black. The brilliant markings of the under surface induced LATREILLE to give to the genus the much more characteristic name of *Pavonia*, which unfortunately has had to sink on the score of priority. — Eyes naked or hairy. Palpus rather large, projecting far beyond the head, anteriorly densely covered with long, appressed hairs, with a hair-tuft dorsally. Terminal joint pointed. Antenna thin and delicate, scarcely reaching $\frac{1}{2}$ the length of the wing, only gradually thickened towards the end. Forewing with strong costal vein and 5-branched subcostal, the first two veins arising before the end of the cell, but branches 3 and 4 placed near together almost in the apex of the wing. Cell broad and large, reaching almost to $\frac{2}{3}$ of the wing, all 3 discocellulars well developed. Upper discocellular nearly as long as the lower. Larva slender, slightly arched in the middle, head with two to eight horns, some of which bear bristles. Abdomen produced into two points. Dorsum with five or six false spines. Ground-colour whitish or brown, frequently also green, always with both lateral and dorsal stripes. Favourite food-plants bananas, also *Marantaceae*; larva as a rule on the underside of the leaves, feeding chiefly at night, in the later stages hiding between dry, hanging leaves. Pupa moderately broad, a little narrowed anteriorly and posteriorly. Dorsal edge mostly strongly projecting. Colour yellowish to brown or reddish, on the wing-cases sometimes silvery spots. Pupal stage 20—25 days, but in some species of shorter duration. The imagines inhabit exclusively the dense forests, where they keep near the ground and by preference at the foot of the old trees. They are crepuscular butterflies which are only rarely met with by day. But if one happens to start them up they hide themselves very cleverly in the thickets and on the tree-trunks with the wings folded, and thus find protection. On the Amazon Dr. HAHNEL once observed a bird chasing a *Caligo eurilochus*, but the butterfly eluded the beak of its pursuer again and again with incredible dexterity, as it flew from one thicket to another, until at last the hunted insect was concealed in the thickest confusion of branches and the tired bird had to desist from further pursuit. Profiting by the habit of the *Caligos* of frequenting those places where fallen fruit is lying, one can bait them with bananas, and I often succeeded in this way in capturing 20—25 examples of *C. beltrao* in one day. Some species, such as *C. martia*, visit bleeding trees, where they often sit for hours at the exudations. Occasionally on especially sultry days they even leave the wood and rest at its edge or on the road, and on the Capivary River in Santa Catharina I once found whole columns of *C. beltrao*, which, arranged like outposts, sat in long lines, one near to another, so that I did not know which to take first. In Colombia *C. oileus* Fldr. was met with on mule dung.

Like all large-winged species the *Caligos* nowhere ascend above the densest vegetation zone and it is probable that they never reach beyond 1000 m. above sea-level. Consequently they prefer the tropical zone, with a few offshoots into the subtropical region. Northwards some forms extend as far as Mexico, southwards to Paraguay and Bolivia. According to GODMAN and SALVIN two groups may be separated on the ground of the copulatory organs. 1) *C. oileus* and *eurilochus* group with the valve simply dentate dorsally. 2) *C. atreus* group, valve with a dorsal, medial process, which itself is again dentate.

I. Sect. *Anagraphii* Stich.

Hindwing of the ♂ without hair-pencil on the bare friction-area at the hindmargin.

C. oedipus, a very rare, insignificant-looking species, splits up into two local races: *oedipus* *Stich.* *oedipus*. ♂: forewing above whitish, costal margin slightly darkened with grey-brown, broadly in the cell, distally more narrowly and before the fork of the last subcostal veins running out into a point. The veins in the anterior median area finely dusted with brown. A slight bluish tinge below the cell. The light band behind the cell indistinctly defined proximally, anteriorly strengthened by a nearly saffron-yellow patch. The distal area fairly uniform black-brown, the band near the margin of the wing only quite faintly indicated. The basal area of the hindwing grey-blue to about the end of the cell, obliquely bordered posteriorly, this part as well as the hindmarginal area nearly to the anal angle with blue reflections. Distal margin strongly undulate. ♀ larger, costal area clouded with deeper brown, the bluish tinge below the cell somewhat increased, the light transverse band behind the cell broader and more distinct, the veins very strongly dusted with brown, the spots in the anterior part of the dark brown distal area distinct, the light band before the distal margin better expressed, undulate, slightly dentate. The blue basal area of the hindwing more truncate, with a silky grey-blue gloss, at an oblique angle of light iridescent, the iridescence, however, not extending so far towards the hinder angle as in the ♂. *nocturna* *Stich.* is a subordinate form, in the ♂ of which *nocturna*. the forewing is almost uniformly darkened with smoke-brown as far as a somewhat lighter transverse stripe beyond the cell, the blue gloss restricted to the proximal part of the terminal area. The blue basal area of the hindwing somewhat reduced. Forewing of the ♀ with stronger and more extended blue gloss and duller but more distinct dentate band near the distal margin. Ground-colour in general even darker brown. Transitions occur to the type-form. Colombia. — *fruhstorferi* *Stich.* (64 c) is in the ♂ somewhat smaller on an average than the preceeding; forewing somewhat more rounded, costal area lighter brownish, transparent, but broader and entirely filling up the end of the cell. The confused figures in the cell beneath distinctly visible above, the light transverse band behind the cell better defined, the bluish dusting below the cell somewhat more copious and extended to the inner boundary of the transverse band, which shows through from the underside. The band before the distal margin likewise somewhat better expressed. Hindwing uniformly rounded, distal margin only quite weakly undulate. The blue basal area viewed from above with a silky gloss, in an oblique light with blue reflections for about the same extent as in typical *oedipus*. Under surface with the posterior eye-spot relatively larger. Costal area of the forewing in the ♀ likewise darkened as far as the light median band, strongly transparent, the blue suffusion behind the cell more distinct, also extended on to the anterior part of the cell, but there weaker. The band behind the cell anteriorly strongly dentate, posteriorly feebly curved, the spots in the costal part of the distal area very distinct, the band before the distal margin almost whitish yellow, its boundary strongly dentate, the distal margin itself pale ochre-brown. The blue basal area of the hindwing reaches distally to beyond the end of the cell; viewed from above strongly glossy, in an oblique light with bright blue reflection. Distal margin of the hindwing likewise very little undulate and somewhat more copiously dusted with grey-white. Under surface as in the ♂, except that the dark-shaded band in the middle of the forewing is prolonged to the submedian and the two undulate or dentate bands in the distal area of the hindwing are very sharply expressed. Honduras, probably also in other parts of Central America.

C. oileus is a protean species which seems to be distributed from the Andes to Mexico, southwards reaching Bolivia, but on the Atlantic side apparently not extending beyond Venezuela. Six or seven known races, some of which are not very sharply differentiated. — *oileus* *Fldr.*, the name-type, came from *oileus*. Venezuela. Forewing in the ♂ almost brownish grey, posteriorly somewhat lighter, markings of the under surface showing through. The band before the distal margin washed-out, but always remaining visible. The rest of the marginal area distally pale black-brown, the dark spots in the apical area distinct, the light band basally more or less distinctly projecting along the veins; the blue gloss below the cell weak, often only perceptible in an oblique light. ♀ larger, wings smoke-brown to the narrow transverse band, basal part to near the costa and to the posterior part of the cell slightly suffused with bluish, rather strongly glossy, the rest as in the ♂, but with the band before the distal margin more distinct. Under surface with moderately widened whitish band behind the cell of the forewing. Hindwing with distinctly developed dentate band in the distal part. The submarginal lines on the underside of the forewing in both ♂ and ♀ shortly and regularly dentate. Venezuela. — *scamander* *Bdv.* has the apex somewhat produced. Costal area darkened as far as the median, the anal area relieved with whitish grey; only at the base a faint blue gloss. Transverse band as a rule rather broad, anteriorly narrower, bone-white, quite faintly tinged with yellow. Markings of the under surface showing through above. ♀ larger, wings more rounded, transverse band widened, especially beneath, its boundary-line curved distad. Anal area as far as the transverse band somewhat darker and more copiously shot with blue. Distal margin of the hindwing somewhat less undulate, the proximal area viewed from above somewhat more distinct but paler blue-grey. On the under surface the undulate band behind the cell of the hindwing especially sharply expressed, with metallic black-blue gloss. In both sexes the lines near the distal margin on the underside of the forewing less regular and more shallowly curved than in the typical subspecies. Central America (Costa Rica, Panama [?], Mexico [?], Guatemala [?]). — *philademos* *Stgr.*, from the *philademos*. province of Antioquia in Colombia, closely approximates to *scamander* and likewise to *oileus* *Fldr.* from Venezuela, but is darker, hindwing above more strongly shot with greenish blue. ♂ under surface with deep brown median area, ♀ scarcely lighter in the distal area. From the Cauca Valley, in coll. FRUHSTORFER. — *phorbas* *Röb.* is somewhat more brightly coloured than the typical *oileus*, the band behind the cell of the forewing *phorbas*.

consequently standing out more distinctly and in general somewhat less dentate; the basal and hindmarginal areas somewhat more strongly tinged with blue. ♀ without appreciable constant differences from that of the *umbratilis*, preceding subspecies. Ecuador. Type in coll. FRUHSTORFER. — In *umbratilis* *Stich.* the ♂ is darkened with smoke-brown above, the blue tinge behind the cell of the forewing only weak, rarely somewhat stronger. The transverse band distally to the cell washed-out, occasionally, however, distinctly expressed; in the latter case anteriorly narrow, whitish, posteriorly somewhat widened, yellowish and terminating at the posterior median vein. The band near the distal margin likewise more or less distinct, the dark spots at the costal margin near the apex well developed. Under surface very sharply marked and with much white in the ground-colour, particularly *philinos*, in the distal part of the hindwing. Peru. — *philinos* *Fruhst.* (65 a). ♂ somewhat smaller and less slender than *scamander*. Forewing grey-brown, copiously shaded with blue. The yellow area of the forewing reduced to a narrow but distinct band. Ground-colour darker, particularly on the forewing. The hindwing, however, more narrowly margined with black, on the other hand with broader distal border, grey in the ♂, yellowish grey in the ♀. Under surface: the brown discal band of the hindwing narrower, the yellow submarginal zone broader and lighter, the discal band of the forewing considerably narrower. Bolivia.

zeuxippus. **C. zeuxippus** *Druce* (65 b) inhabits Ecuador. Under surface somewhat resembling that of *oileus*. It is noteworthy for the strikingly light basal area, particularly on the hindwing, which is delicately striated with white. The ocelli are placed in a light coffee-brown median area, which again is surrounded by a zone of light striation.

placidianus. **C. placidianus** *Stgr.*, originally described from Sarayacu in Peru and from São Paulo de Olivença on the Upper Amazon, is a very large species with broad, unmarked, dark distal border on the forewing, before which an undecided yellowish band, distally rather sharply defined, runs to the posterior median. The ♀ has the basal half of the forewing blue-grey, bounded by a still more indefinite yellowish grey band. Under surface very similar to that of *C. oileus*, but at once distinguishable from this and indeed from all other known species by a deep brown area running from the posterior to the anterior median along the cell-wall and anteriorly narrowed; this occurs also on the hindwing, but there covers the entire middle of the wing, is sharply cut off proximally, but considerably widened distally about the anal ocellus. Cell of the forewing covered with elegant black markings looking like cumulus clouds. *micans* *Röb.* describes a slightly modified local form from Ecuador in which the basal half of the hindwing above has a somewhat more intensive gloss.

beltrao. **C. beltrao** *Ill.* (= *demosthenes* *Perry*, *inachus* *Godt.*) (65 b) is one of the most brilliantly coloured species of the genus and among the characteristic butterflies of central and southern Brazil. All day long they remain in the lower brushwood or round the trunks of the forest giants, where they hide near the ground. Only in the evening twilight or in the early morning, before the daylight has dispersed the last shadows of the night, they come out of their hiding-places for a short time. One can then sometimes see them sitting on the road in large numbers. In Santa Catharina in the valley of the Capivary River I observed that the butterflies were positively common on sultry days and one might with truth speak of whole regiments of *Caligo*, of which the outposts were arranged at the edge of the woods and at such short distances that one hardly knew which to take first. *beltrao* can also be attracted with bananas and it was a pretty sight to see the giant *Caligos* hanging on the bait in living clusters in company with *Dasyophthalma creusa*, *Eryphanis reevesi* and *Prepona meander*. ♂ beneath predominantly irrorated with a fine coffee-brown, with very broad median area of the same colour, which traverses both wings, changes into black beyond the cell and is distally bordered by a zone of whitish and purple dusting. Hindwing with the anal ocellus shaped like a hazel-nut with the point placed posteriorly, the ocellus margined with a beautiful light yellow. The ♀ larger, wings broader, more rounded, colouring duller. Apex of the forewing light ochre-yellow, only proximally somewhat tinged with orange, the dirty yellow marginal stripe broader, gradually narrowing to the anal angle. The white costal spot in the yellow area very conspicuous, the adjoining distal black dusting in the apex more distinct, condensed into a double spot with white sagittate or lunulate spots accompanying it. Under surface somewhat lighter, the band-like brown shading in the middle of the forewing behind the posterior median vein more distinctly prolonged; close to the distal margin run two blackish parallel lines, which are anteriorly somewhat more delicate brownish, have whitish and yellowish bordering and are gently curved, but behind the eye-spot project basewards near the apex and then run to the anal angle in large, sharp teeth, some of which are bidentate. On the hindwing the bands beyond the cell better expressed, the distal margin more broadly brown and with a second dentate band similar to the first-named, but less distinct. Abdomen with lighter grey-blue hairs. — Larva on bananas, like that of *C. eurilochus brasiliensis* green when young with elongate brown dorsal spots and a white and brown lateral stripe. The spots disappear later and the ground-colour becomes green; in the adult stage the caterpillar is dirty green to yellowish brown, irregularly shaded with black, laterally with a pure white stripe, edged with black at both sides, along the stigmata; the body tapering anteriorly, on the dorsum with soft warts (false thorns), the head with a crest of eight horns. Pupa in size and markings in general like that of *eurilochus*, but paler and without bristles (W. MÜLLER). The ♂ figured came from Rio Grande do Sul, where *beltrao* has become

very rare. Also in Rio de Janeiro the species is no longer very common, but it apparently occurs in larger numbers in Espiritu Santo. Examples from there are by far the largest, somewhat lighter blue, and both sexes have the apical spot on the forewing paler yellow and more extended than in my Santa Catharina specimens. Moreover the basal area on the underside of the hindwing is appreciably lighter and in the ♀ the distal border of the brown median area is much lighter, one might almost say pure white. According to BURMEISTER *beltrao* also occurs in Argentina, but I do not know any Argentine examples in nature.

II. Sect. *Graphiophori* Stich.

Hindwing with a small hair-pencil on the bare friction-area at the submedian.

C. teucer, one of the most inconspicuous species, is distributed over the entire region in which the *Caligos* occur with the exception only of Central America and Mexico. *teucer* is less susceptible to climatic influences than other species of the genus and consequently only splits up into a small number of not very sharply differentiated local forms. — In *insulanus* Stich. the costal area of the forewing in the ♂ is of an indefinite light grey, not or scarcely brownish, the yellowish white transverse band distally to the cell very narrow and dull, the triangular hindmarginal area grey-blue fully to its anterior limit, also the cell for about half its breadth with a vague grey-blue tinge. The distal marginal area blackish, the undulate lines near the margin only quite indistinctly showing through and only slight traces of a band present between them. Basal area of the hindwing grey-blue, in an oblique light with violet-blue reflection in its distal part, extending nearly to the end of the cell, distal half of the wing blackish with quite fine whitish border. The ♀ larger, the band of the forewing somewhat broader, anteriorly more or less dusted with dark, from the posterior angle of the cell onwards purer whitish yellow, posteriorly again blurred. The blue dusting of the hindmarginal area is continued anteriorly in the cell, only leaving a narrow costal stripe. The band near the distal margin of a very fine and distinct whitish yellow, the proximal boundary strongly curved and very sharp, the distal less strong, but distinctly defined by a dark-dusted stripe. Hindwing with the basal area widened, distally likewise with a beautiful iridescence. This extends to beyond the cell and to the hindmarginal vein. Distal margin of the hindwing somewhat more strongly dusted with whitish than in the ♂; abdomen with bluish gloss. Trinidad. — *suzanna* Deyr. *suzanna*. is a dark subspecies; forewing from the hindmargin nearly to the costal margin and the narrow whitish band tinged with blue. Marginal area almost black, the submarginal undulate line not conspicuous, the margin itself strongly undulate, quite finely edged with whitish. Hindwing velvety black, distal margin finely whitish. Basal area greenish to near the end of the cell or even somewhat further and nearly to the anal angle, at its extremity with clear blue reflections. Under surface strongly and copiously marbled with brown and black-brown. In the posterior median cellule of the forewing is placed a small, rather distinct eye-spot, a larger one near the apex. The ring round the posterior eye-spot of the hindwing is very light yellow, nearly white, laterally and posteriorly more yellow, at the outer margin changing into rust-yellow. The brown band-like colouring between the anterior and posterior eye-spots only persists as a narrow, sometimes quite indistinct stripe running through the cell, the smaller oval patch distally to the middle discocellular more or less distinct. The ♀ has broader wings, otherwise quite similar. In the forewing the light band running between the marginal lines near the distal margin and the black spots at the costal margin near the apex more distinctly expressed. The blue reflection on the hindwing extended somewhat beyond the end of the cell. On the under surface the hindmarginal area of the forewing to the submedian striated, like the rest of the wing, the small posterior eye-spot in the distal area absent. In the median area of the hindwing the brown band-like shading better developed, in the cell a distinct elongate light patch. In general the striation and marbling on the entire surface of both wings somewhat coarser and darker. In transitions to the typical subspecies, not locally constant. Colombia. — *phorkys* subsp. nov. differs from *phoroneus* Fruhst. in the narrower, washed-out yellowish grey longitudinal band of the forewing, which is broken up into separate spots and is also distinguished at once from *suzanna* Deyr. by the isolated patches. Under surface lighter than *phoroneus*, particularly the basal part and the distal area of the hindwing. Coroico, Bolivia, 1200 m. — In *teucer* L. *teucer*. the costal area of the forewing is broadly grey-brown, cell also grey-brown except a narrow stripe in the posterior half. The brown area is approximately spindle-shaped with the points placed at the base of the wing and at the costa before the fork of the 4th and 5th subcostal veins. The transverse band beyond the cell begins 3—4 mm. in width, is distinct to the angle of the cell, then only sharply defined distally, and terminates at the posterior median vein. In the middle and posterior median cellules it forms two shallow curves. The light grey median area is widened posteriorly and forms a long acute-angled triangle to the hindmargin. Posteriorly the colour becomes a trifle darker, particularly at the base of the wing, and is slightly tinged with bluish. The distal area, for an average breadth of 18—19 mm., is dark to pale smoke-brown, fringes and a quite fine marginal stripe dirty white, the submarginal lines of the under surface show through, and between them there is a very faint, somewhat lighter undulate band, which scarcely contrasts at all in colour with the extreme marginal area and is only separated from this by the distal line, but on the other hand is proximally more distinctly defined by the darker median area. Posteriorly the marginal markings become quite blurred and the colour assumes a uniformly dark tone for the whole breadth of the distal area. Hindwing black-brown, the fringes from the apex nearly to the hinder angle whitish, basal area behind the grey costal zone grey-blue, in an oblique light

greenish, distally with violet-blue reflection. This reaches in the cell about to its middle, below it to two-thirds of the hindmargin and is gradually lost in the ground-colour. In the costal area of the hindwing and on almost the whole of the forewing the dark markings of the under surface show through slightly. Under surface rather coarsely and profusely marbled, forewing with two eye-spots. The ♀ is larger, the bluish colour below the cell of the forewing weaker, the light band beyond the cell broader, the undulate band between the strongly dentate lines which show through from beneath near the distal margin standing out more distinctly. The blue on the hindwing further extended, deeper in tone, with less greenish reflection. In the Amazon region extending towards the west and north-west (Peru, Colombia), this race becomes transitional towards *C. teucer suzanna*, being more brightly coloured, with a somewhat darker costal area on the forewing and more copious blue dusting at the hindmargin, while the hindwing shows a more extended blue basal area. Guiana, northern

nubilus. Brazil, western Peru. — **nubilus** *Fruhst.* (63 c). Band distally to the cell of the forewing completely suppressed, ground-colour in the cell especially dark, a dull blue gloss spreads almost uniformly over the whole proximal

obidonus. half of both wings. British Guiana. — **obidonus** *Fruhst.* Paler than the type-form. The blue basal area of the hindwing extended to the end of the cell, hence the distal and anal area more narrowly black-brown. Under surface more marbled with white, in the cell of the forewing with brighter white bands. In the hindwing the posterior eye-spot with smaller black pupil and broader yellow ring, in the cell the white elongate patches standing out very brightly on a brown ground, the oval ring-spot before the middle discocellular on the other

japetus. hand more weakly coloured. Amazons (Obidos). — **japetus** *Stich.*, from Paraguay, has broader wings than typical *teucer*; the spindle-shaped brown costal area widened so as only to leave free the extreme distal angle of the cell, which assumes the colour of the adjoining transverse band. This is almost ochre-yellow, posteriorly somewhat paler. The triangular grey area behind the cell, which posteriorly to and in continuation of the transverse band is bounded by the dark brown distal area and anteriorly reaches to the origin of the middle median vein, is shot with bluish throughout, and a narrow posterior stripe in the cell is also slightly tinged with blue; in an oblique light this dusting shows a beautiful sky-blue sheen. The light transverse band between the curved lines which show through from beneath near the distal margin more distinct and proximally in particular standing out very sharply against the dark area. Blue basal area of the hindwing extended to the end of the cell and nearly to the hinder angle, in an oblique light with brilliant violet-blue reflection. The strongly undulate distal margin profusely dusted with whitish, particularly at the incisions. Under surface in general with somewhat lighter ground-colour, the distal half of the hindwing in particular with strong whitish admixture. In the forewing only one eye-spot, near the apex. ♀ larger; the bluish tinge on the forewing spreads over almost the entire cell, but is somewhat less pronounced. The band behind the cell broader, anteriorly, in the radial interspaces, with pointed, wedge-shaped teeth proximally. The band near the distal margin dirty ochre-yellow, more distinctly defined, distally in particular bordered by a stripe more strongly dusted with black-brown. Hindwing with the basal area considerably widened, in an oblique light with brilliant violet-blue and greenish reflections. It extends about 6—7 mm. beyond the end of the cell, nearly reaching the anal angle. Under surface somewhat less brightly and more coarsely marked. Thorax and abdomen strongly dusted with grey-blue.

phoroneus. — **phoroneus** *Fruhst.* This local race, with the upper surface strongly darkened, forms a transition from the light forms of the Lower Amazon region to the dark *suzanna Deyr.* from Colombia. The light yellowish area which in *teucer* and *obidonus* *Fruhst.* spreads over a third of the forewing is reduced to a rather sharply defined, narrow dark yellow band, which in the ♂ still covers the extreme apex of the cell on the forewing. In the ♀ this band is even more narrowed and runs beyond the cell, gradually becoming darker and terminating before the 3rd median vein. The cell of the ♂♂ is darkened with the exception of the apical and lower parts, that of the ♀♀ entirely darkened, and shot with deep blue. The hindwing except the black distal margin with as dark blue gloss as in *euphorbus* *Fldr.* The large ocelli on the underside of the hindwing characterized by having a brown border, which is much more extended than in *teucer* and *obidonus*. Jaupes.

C. illioneus occurs together with *teucer*, but its range extends somewhat further south on the Atlantic coast and it is still met with at Rio de Janeiro, where according to BÖNNINGHAUSEN it occurs on the north side of the bay at Piedade. Unlike *teucer*, its early stages are well known. Larva on bananas. Northwards *illioneus* extends as far as Panama. Such localities as Guatemala and Mexico are no doubt due to errors in determination, it having been confused with *memnon*, which is everywhere common in those countries. —

oberon. **oberon** *Btlr.* ♂, very dull-coloured, the blue of the forewing in the costal and posterior part of the cell very faint, the posterior angle of the latter entirely free, the reflection strong but darker. Transverse bands dull, sometimes even indistinct. The proximal one as a rule only somewhat more distinct anteriorly, from the radials onwards obsolescent, the distal sinuous, the costal curves more, the anal less strongly diffused on either side of the veins in such a way that the rays are as a rule united anteriorly with the smaller curves of the proximal band, forming elongate ring-spots in which are enclosed oval spots of the dark brown ground-colour, sometimes proximally truncate. This formation, although it occurs more rarely also in single individuals of other subspecies (particularly in *C. i. polyxenus*), is in general very characteristic of *oberon*. ♀ paler, with the same peculiarities, the transverse bands of the forewing somewhat lighter, the markings of the under surface showing through more strongly. Panama. — **praxsiodus** *subsp. nov.* is before me in four examples from different

parts of Peru. It approximates in its small size to the Trinidad race and differs from the type-form in the brighter, more brilliantly glossy reflection on the basal part of both wings, which are also traversed by very narrow inconspicuous longitudinal bands. By these *praxiodus* may also be at once separated from *pampeiro* *Fruhst.*, in which the bright ochre-yellow longitudinal bands are always conspicuous. Under surface very closely resembling *oberon* *Btlr.*, but with still darker striation, the anal eye-spots very much smaller, the whitish dusting in the median and submarginal areas nearly obsolete. — *pheidriades* *subsp. nov.* ♂ somewhat smaller than *pheidriades* *oberon* *Btlr.* from Colombia, but more brightly coloured, not only more glossy blue but also with a stronger yellow submarginal band on the forewing than that form and *pampeiro* *Fruhst.* from Paraguay. Under surface very characteristic on account of the sharply contrasting bands, alternately brown or whitish grey, which traverse the hindwing in particular. The arrangement of the band-like areas as in *oberon*, but the colouring more of the brown tone of *praxiodus*, all the light areas, however, more extended than in Peru ♂♂. Ocelli of the hindwing considerably larger than in *praxiodus*, with the bordering much lighter, nearly whitish yellow. Coroico, Bolivia, from 1200 m. — *saltus* *Kaye* is always smaller than *polyxenus*, the ♀ especially *saltus*. with the bands of the forewing more grey instead of brightly coloured. Egg (according to KAYE and GUPPY) spherical, whitish, with regular longitudinal ribbing. Young larva whitish, dorsal surface with 2 red double stripes at the sides, head large, brown, strongly hairy, a long, branched tail-fork; after the first moult the head more slender, reddish, with branched horns; upperside of the body green with a brown stripe and a white upper lateral longitudinal line, below the stigmatal line striped with white and reddish. Tail-fork simple, on the 6th segment a thorn-like point. After the second moult the body becomes brownish, with two dorsal points on the 6th and 8th segments, and shows an upper lateral stripe and on the separate segments brownish oblique stripes decreasing posteriorly; stigmatal lines as before. The full-grown caterpillar is cylindrical, tapering anteriorly and posteriorly; head broad, flat, obliquely sloping anteriorly, striped with black-brown, with 2 pairs of shorter and 1 pair of longer horns; the first segments of the body strongly grooved transversely, on the dorsum two short points; ground-colour of the body dirty white, dorsal stripe blackish, anteriorly cleft, at both sides an upper lateral dark double line, below this a greenish lateral stripe, from which on the separate segments oblique stripes ascend anteriorly, below it a reddish brown stigmatal stripe, bordered with white on both sides. Ventral surface and legs dirty green, fork shortened. Entire length 115 mm., length of the fork 9 mm. Trinidad; St. Vincent (British Museum). — *polyxenus* *Stich.* Transverse bands of the forewing somewhat widened and particularly bright ochre-yellow, more rarely somewhat darker. The band at the cell anteriorly somewhat dentate, then nearly straight, proximally but little incised at the veins. The band near the distal margin strongly zigzag, anteriorly the separate teeth more or less diffused proximally on the veins. Distal margin of the hindwing anteriorly more broadly, posteriorly narrowly dusted with whitish. On the underside of the hindwing the posterior eye-spot is as a rule especially large and broadly ringed with whitish yellow. — In *ilioneus* *Cr.* (64 c) the ground-colour of the ♂ is in general more dusky, but the wings have a strong blue gloss. Cell of the forewing mostly shot with blue throughout, costally and basally paler, almost grey-blue. Transverse bands ochre-yellow, the tone of colour inconstant, mostly not quite pure, sometimes even strongly darkened, both on the whole narrow, the one adjoining the cell somewhat dentate anteriorly, from the lower radial onwards nearly straight; it terminates at the lower median vein and its posterior part is obsolescent. The submarginal band anteriorly somewhat sinuous, then at most slightly undulate and in its general course but little curved. This also is somewhat more indistinct posteriorly, likewise terminating at the lower median vein or somewhat before it. The blue basal area of the hindwing extended to beyond the end of the cell and nearly reaching the hinder angle, strongly iridescent, but paler anteriorly. On the subcostal, close to the precostal cell, is placed a flattened, blackish scent-scale spot, with somewhat bluish reflection in a side light, which extends on to the cell. Fringes of both wings whitish yellow, distal margin of the hindwing not at all or only quite narrowly dusted with whitish. ♀. Considerably paler in colour. Forewing less dusted with blue, the transverse bands lighter, broader, sometimes more strongly dentate and undulate. Hindwing with broad grey-brown or dirty whitish costal area, in which the striation of the under surface shows through more distinctly. Hence the blue basal area is somewhat restricted anteriorly. Distal margin of the hindwing somewhat more, but still only slightly dusted with whitish. Larva very similar to that of *C. eurilochus*, but smaller and proportionately thicker. Body with fine transverse grooves, on the dorsum with 6 weak, spine-like points, otherwise covered with short, stiff hairs. Ground-colour yellow-brown with black dorsal line, which is forked anteriorly. The body laterally striped with alternate light and dark brown and on the upper half with short brown oblique stripes. Ventral surface dark brown. Head of the colour of the body, with five broad dark stripes. Pupa compact, suspended, at the vertex with narrow helmet-like comb, of yellowish ground-colour, marked with brown, with two very conspicuous silver spots on the wing-cases. Guiana, Brazil, Amazons, Pará, Rio de Janeiro. Examples from Rio de Janeiro are wanting in my collection; there are some from Pernambuco in the British Museum. — *pampeiro* *Fruhst.* is smaller, lighter, the blue reflection stronger, but the blue dusting on the forewing somewhat reduced, the distal part of the cell mostly remaining brown. Transverse bands pure orange-yellow, the proximal but little sinuous or dentate, posteriorly somewhat duller, the submarginal more strongly sinuous and dentate. Distal margin more strongly excised, border of the hindwing very broadly dusted with yellowish white in curves. The large ocellus on the underside of the hindwing shows a tendency to posterior elongation. ♀ paler, the bands on the forewing lighter, the submarginal broader. Distal margin of the hindwing bordered with white, in the interspaces between the veins broad yellow-white crescentic spots. Paraguay.

C. prometheus somewhat resembles *C. memnon* (65 a) above, but is considerably larger, the basal part of the forewing more extended pale yellowish, that of the hindwing more richly suffused with blue. Range, so far as is at present known, confined to Colombia and Ecuador. **prometheus** Koll. On the forewing the grey dusting in the costal area at and behind the end of the cell is reduced to a narrow stripe, which is only towards the end, before the fork of the fourth and fifth subcostal venis, a trifle widened. Hindwing in an oblique light with intensive blue reflection, at the base greenish, from the end of the cell to the distal margin a beautiful azure blue; the sheen decreases somewhat in strength anteriorly, but leaves only the apical area and a costal stripe free. Under surface of the forewing copiously striated; behind and distally to the cell, starting from its posterior angle, are placed two connected blackish arcuate spots, mostly very distinct and sharply expressed, bordering the light transverse band proximally. Colombia; Nicaragua (?). — **epimetheus** Fldr. is a lowland form from eastern Colombia. Somewhat smaller than the type-form, the grey dusting at the costal margin of the forewing broader, on the other hand the blue colour on the hindwing confined to the proximal half, in an oblique light less iridescent, but viewed from above more distinctly defined. Colombia: Rio Aquara Valley, West Cordilleras, 2000 m. The egg is almost as large as that of *Saturnia pyri*, round, somewhat flattened at both poles, the sides with longitudinal grooves, which again are divided into cells by horizontal belts. Towards the base these are broken up into smaller and smaller dots and finally terminate in a smooth surface. The apex of the egg forms a wart-like elevation of brown colour, the micropyle is placed somewhat at the side. The larva is of the shape of the typical *Caligo* larva figured in SCHATZ. It is brown-grey, on the dorsum with three lighter angular markings, the vertices of which run back into the mediodorsal line. Many specimens attain 13 cm., these mostly yielding females. I found the larvae always in small companies of up to 8 specimens on the lower end of the stalks of Platanillos (wild bananas), or hidden in dry leaves; they only feed at night and always return to their old place, where they mostly sit closely packed together. The pupa is very similar to that of *Cal. eurylochus*, ornamented with a silvery shoulder-spot. The pupal stage lasts 4 weeks. In breeding the number of specimens of the two sexes was about equal. — **anaximandrus** Fruhst. Replaces the small lowland form *epimetheus* Fldr. of eastern Colombia in the transandean region, and is also of small habitus. The ♂ approaches *atlas* Rüb. from Ecuador, with which it entirely agrees above except that the black marginal band of the forewing is somewhat more sharply defined proximally. The under surface, however, differs considerably in the more lively, brightly contrasted colouring. The submarginal black hatching on the forewing is almost absent, the bordering of the ocelli is light red-brown instead of nearly black. Hindwing with brown instead of nearly black foreground to the anal ocellus, the eye-spots themselves scarcely half as broadly margined with black. The distinct black-striated submarginal band of *atlas* is wanting; in general the entire distal area of the hindwing is whitish watered with yellowish. Basal part likewise predominantly whitish instead of black. The ♀, unlike the ♂, is distinctly modified above also and especially characterized by the yellowish area extending as a sharply defined band to the costal margin. Compared with *atlas* Rüb. from Ecuador this light part of the wing is altogether more pronounced and contrasts sharply with the black terminal area, which is proximally very neatly undulate, with distinct but not deep incisions. Hindwing somewhat more richly coloured, distally of a finer whitish yellow than in *atlas*. Under surface: coloration gayer, the distal area in particular striated with yellow rather than brown-black. The brown bordering of the anal ocellus, which touches the black ring, scarcely half as broad as in Ecuador ♀♀. This handsome new West Colombian form was discovered by A. H. FASSL on the upper Rio Negro at an elevation of 800 m. — **atlas** Rüb. Forewing of the ♂ rather narrow, apex more pointed, distal margin of both wings more strongly undulate than in the preceding, otherwise similar on the upper surface to *epimetheus*. Costal area of the forewing broadly grey-brown, towards the end of the cell but little narrowed and distally to this again widened as far as the middle discocellular, the blue-grey basal dusting behind the cell on the contrary somewhat reduced. Beneath the striation and other markings more sparse, the dark curved transverse line behind the cell being absent or only weakly indicated and the space immediately behind the distal half of the cell and part of the cell itself only quite finely watered with gold-yellow. Consequently the upper surface, on which the dark markings show through in the whitish areas, is purer white beyond the cell as far as the posterior median vein. On the hindwing the blue reflection weaker and only extending to towards the end of the cell and towards the hinder angle. At the distal margin occasionally a further quite faint bluish gloss perceptible in places. On the under surface the ground-colour more white or bluish white, but the striation coarser and darker, the curved bands near the distal margin as a rule only indistinct or not developed at all, the posterior eye-spot mostly somewhat smaller than in the preceding. Ecuador.

C. memnon may be regarded as the most northerly *Caligo* form, is at home exclusively in the Central American and Colombian-Venezuelan subregions of the *Caligo* area and southwards apparently does not occur even in Ecuador. *memnon* is considered one of the commonest butterflies of Mexico and Guatemala and is represented in every consignment from the tropical parts of those countries. Notwithstanding this we have no information concerning the early stages. **memnon** Fldr. Under surface of the forewing mostly only sparsely striated in the cell. In addition to some irregular dark brown zigzag and undulate lines and some brownish clouding the surface of the wing is finely watered with reddish yellow, sparingly beyond the cell. The dark nebulous band

distally to the cell always distinct, but from the end of the cell onwards becoming weaker or entirely absent. Hindwing in the basal area striated coarsely with white and dark brown, in the distal area finely and uniformly with bluish white-grey and brown. The median area with the 3 eye-spots strongly brown in ground-colour, the elongate light cell-patch, however, not very conspicuous. The ♀ is larger, with exactly the same markings, but the band near the distal margin of the forewing considerably more sharply expressed. It consists of a row of whitish lunules or crescentic spots, deeply incised proximally at the veins, distally less sharply defined, but still distinctly contrasted with the grey-brown distal margin. In the costal part of the dark brown distal area there are mostly 4 rather distinct round black spots in the interneural spaces near the apex. Costal area of the hindwing relieved with grey-white and the distal margin more strongly dusted with whitish. Under surface lighter, the brown zigzag stripes and striation on the forewing reduced; the dark band beyond the cell as a rule narrow but distinct, the darker area behind the transverse band but little striated; in it are placed wedge-shaped, loosely connected dark teeth. Hindwing more coarsely striated, the brown median area less conspicuous, in the outer part a curved band, mostly standing out very sharply. Mexico, Honduras, Nicaragua, Costa Rica (?). — **menes** *Fruhst.* ♂ differing from *memnon* *Fldr.* from Mexico in the darker ground-colour of the wings (particularly in the costal area of the forewing), which is caused by the increase of brown scaling on the under surface. The hindwing with more of the blue reflection, but less intensive than in *telamonius* *Fldr.* The under surface strongly suggests *teucer* in the black discal band of the forewing; the forewing bears, however, larger ocelli than in *memnon* or in *teucer*, and the middle eye-spot, between the radials, is more strongly developed. The ♀ differs from *memnon* and *teucer* in the much narrower, but more sharply defined, black distal border of the hindwing. Chiriqui. — **diluta** *Stich.* Commoner form of the subspecies *menes*. In the ♂ the forewing is almost as in *C. m. memnon*, costal area occasionally even narrower and but little darker than the light, pure white-yellow ground-colour, but the band near the distal margin as in the type-form quite blurred. On the hindwing the blue reflection somewhat more extended, but not reaching the distal margin. It usually disappears at the end of the cell and shortly before the hinder angle, but in all cases a faint bluish violet tinge is perceptible at the distal margin when viewed obliquely, much as in *C. idomeneus*, only not so strong. Under surface variable, usually as in *menes*, but even less marked, the distal half of the cell of the forewing and the adjoining area behind it only delicately watered with reddish yellow and white; only in the posterior projecting angle of the cell some brownish striation is present. The dark transverse band behind the cell then only persists in the anterior part and from the posterior angle of the cell is entirely absent or represented by two slightly shaded lunules. The proximal of the two curved bands near the distal margin again more sharply dentate than in the type-form. Hindwing mostly remaining rather dark, the posterior eye-spot as a rule somewhat reduced. Otherwise without essential differences. ♀: costal area more broadly grey-brown, in the distal half of the cell somewhat constricted, thus better developed than in *memnon* ♀; the band near the distal margin more distinctly defined than in the ♂, but less sharp and not so clear as in *memnon*. Blue reflection on the hindwing about as in the ♀ of this subspecies, even somewhat more restricted. Under surface of the forewing in the distal half of the cell pretty uniformly striated with brownish, the area behind the cell to the lower median vein almost without markings, the dark transverse band distally to the cell here only weakly indicated. Under surface of the hindwing with very close transverse striation, predominantly brown, the median area in particular also broadly pure brown, the light cell-patch very distinctly defined. The eye-spots large and distinct, the middle one rather full and almost round; behind it, in the angle of the lower radial and discocellular, sometimes a small round accessory ocellus. Panama (Chiriqui). — **peleus** *Stich.* ♂: forewing pale ochre-yellow, basal and costal areas rather broadly shaded with light grey-brown, the markings of the under surface showing through rather distinctly. Distally to the cell a narrow transverse band of the ground-colour, distinct as far as the posterior median vein. Distal area nearly black, the margin itself smoke-brown; between the dentate lines showing through from beneath a washed-out curved band, which is only anteriorly somewhat lighter. Hindwing with the distal margin very slightly undulate and quite narrowly dusted with whitish. Blue reflection a beautiful indigo, but only extending to the end of the cell and to shortly before the anal angle. The reflection shades gradually into the deep velvet-black colour of the distal half, which in places still shows some bluish gloss. Under surface sharply and densely striated and marbled. Forewing below the strongly developed anterior eye-spot sometimes with 3 further dark spots placed one behind another. Ground-colour in the cell yellowish white, the light transverse band behind the cell sharply defined basally. Hindwing as in the following form; in the type specimen there is before the middle ringed eye-spot a smaller, brownish accessory ocellus, with white pupil and black border, separated from the former by the anterior radial. Venezuela (Merida). — **telamonius** *Fldr.* ♂: forewing light ochre-yellow. Costal area rather broadly, but only slightly, darkened with grey-brown, markings of the under surface showing through, the light band beyond the cell well distinguishable as far as the posterior median vein. Marginal area brown, the striation of the under surface still traceable. Submarginal band very indistinct. Hindwing with strong blue reflection, but when viewed from above only appearing shot with grey-blue from the base to the end of the cell and nearly to the anal angle. In an oblique light almost the whole wing except the costal area and a spot in the apex shows deep indigo-blue reflections, at the base slightly greenish. Distal margin undulate, slightly dusted with whitish. Under surface very profusely striated and marbled, as in the form *menes*, the distal part of the cell in particular strongly clouded and striated

as far as a light terminal patch, the light transverse band behind it sharply defined proximally by the dark lunulate markings. In the distal area sometimes only a single eye-spot near the apex, the posterior one faintly indicated or likewise distinctly developed. The dark band-like median area of the hindwing, in which the eye-spots are placed, as a rule distinctly defined at both sides. In the distal area at least one sharply curved band composed of dense striation. Occasionally there is a small, light-pupilled accessory eye-spot or a brownish spot before the middle ocellus. A pronounced highland form from Pacho, East Cordillera, 2200 m.,

pavo. Colombia, western Venezuela. — *pavo* Rüb. is a valley form; larger than *telamonius*. Ground-colour deep saffron to gold-yellow, the grey-brown costal area of the forewing somewhat deeper in tone; blue reflection of the hindwing somewhat more restricted than in *telamonius*. Colombia, Venezuela. — *pavonides* subsp. nov. replaces *pavo* Rüb. in eastern Colombia, is likewise a valley form and differs from RÖBER's cotypes in my collection in having the light area of the forewing pale yellow above, more suggesting *memnon memnon*, and in the distinct light blue reflection in the submarginal area. Under surface with the yellowish and whitish parts much more extended and the anal ocelli smaller than in West Colombian *pavo*. Taken by FASSL on the Upper Rio Negro at 800 m.

bellerophon. **C. bellerophon** Stich. (63 c) replaces *memnon* in Ecuador. The under surface apparently does not differ materially from *memnon*, but on the upperside *bellerophon* is distinguished at once from its northern representative by the deeper yellow, slightly greenish-tinged basal area of both wings and by having the distal part of the marginal region brown instead of black. Hitherto only known from Ecuador.

C. eurilochus is probably the best known species of the genus and the most widely distributed in collections. We are also fully acquainted with its habits and transformations. Larva on bananas and other Musaceae. Occurs from Honduras to Santa Catharina and from Colombia to Bolivia. — *sulanus* Fruhst. (63 c), the most northerly branch, is extraordinarily rare in Guatemala and Honduras, but according to GODMAN and SALVIN seems to occur in somewhat larger numbers in Nicaragua. ♂ grey, the basal half of the hindmarginal part of the forewing dusted with blue-grey, somewhat iridescent. Before the marginal area a yellowish band, which is anteriorly distinct and straight, towards the hindmargin washed-out. Distal margin of the forewing dull, dirty earth-brown. Spots near the apex present, but weakly or hardly dotted with white. Hindwing velvety black, finely margined with white, the basal half to $\frac{2}{3}$ of the cell and of the inner margin with blue-green reflection. Beneath almost as *brasiliensis*, somewhat lighter grey than this and the striation finer; in the forewing mostly only one eye-spot, near the apex. The posterior ocellus on the hindwing very sharply expressed, the bordering almost saffron-yellow. ♀ dark grey, copiously tinged with blue, the markings of the under surface showing through strongly, the whole of the distal markings sometimes washed out and indistinctly clouded, in any case not so distinctly expressed as in *brasiliensis*. Central America. — In northern Colombia *sulanus* is replaced by *galba* Deyr. The ♂ is similar but paler, the transverse band at the cell only quite weakly indicated by the pattern showing through from beneath, more weakly than in *sulanus*. The band near the distal margin is likewise dull and washed-out, only in the anterior part somewhat more distinct, never yellowish in tone, but pale grey-brown like the distal margin. Hindwing with stronger whitish dusting at the distal margin, the blue of the basal area not extending to the end of the cell. Under surface almost as in the preceding, the cell of the forewing somewhat more regularly watered, on its projecting angle less brown clouding and the light patch more weakly marked. Hindwing with the ground-colour white, the striation coarse, especially in the basal area. The posterior eye-spot very strongly marked, its ring very broad, light ochre-yellow, at the outer edge shaded with orange; the brown foreground less extended, light sepia, the transverse stripe running to the anterior eye-spot not always fully developed. ♀: band-markings on the forewing more distinct, almost as in *C. eurilochus brasiliensis*, but not so sharply defined, the blue tinge on the forewing less extended and duller, the costal margin in particular more broadly grey. The characters not quite constant, varying individually. Size of the preceding. — *morpheus* Stich. inhabits Central Colombia; it is of very dusky, uniform, dark blue-grey colouring with the submarginal band only quite weakly indicated. Under surface coarsely and regularly watered, the large posterior ocellus only brown anteriorly. According to STICHEL *morpheus* extends southwards to Ecuador and Peru, where it unites with *livius* Stgr. — *phryasus* Fruhst. Very small in habitus, about agreeing with *sulanus* Fruhst. from Honduras, also similar to this race above in coloration, but easy to distinguish by the lighter blue, more inclining to grey, on the forewing, which, moreover, bears a short whitish band at the wall of the cell. Hindwing extremely characteristic by having the black distal area widened and encroaching on the cell. In the middle of the wing an intensively glossy dark blue reflection, which decreases towards the base. Under surface similar to *sulanus*, ocellus of the hindwing larger, more distinctly bordered with lighter yellow, placed in a deeper brown foreground. Maracas Fall, Trinidad. Collected by A. H. FASSL. — *livius* Stgr. Usually larger than the typical form; forewing pale grey-brown, even paler than in the typical subspecies, distal area somewhat darker, particularly in the posterior part, there brownish or pale blackish and divided for its entire breadth from the rest of the wing by a vague yellowish transverse band, which anteriorly is mostly somewhat more distinctly expressed. The spots near the apex indistinct and washed out, distal margin somewhat lighter, before it some vague nebulous shading, enclosed by or adjoining the marginal lines which show through from beneath. The blue tinge in the posterior part of the wing is very faint, the green reflection at the costal mar-

gin and in the cell entirely absent. Hindwing with whitish fringes. The blue basal area leaves the anterior part of the cell free, is posteriorly extended only to one-half the submedian and shows only a slight sky-blue gloss. Under surface somewhat more uniformly and regularly striated, the pupil of the eye-spot at the anal angle commonly somewhat reduced, so that the eye-spot is very broadly ringed with yellowish. ♀: forewing almost smoke-brown, with very slight blue tinge. The spots near the apex more distinct, blackish, dotted with white internally; distal area somewhat darkened; near the distal margin runs a lighter transverse band of spots, strongly curved posteriorly. Between this and the margin itself, which is again somewhat lighter, is placed a smoke-brown stripe, distally straight, proximally strongly curved. There is no real transverse band behind the cell, only its commencement being indicated at the costal margin by a yellowish diffuse spot. Hindwing with the basal area quite faintly blue; the bluish tinge, however, extends to beyond the end of the cell and nearly to the hinder angle; before the posterior half of the cell, extending somewhat beyond its end, and in the median area of the wing some sparse ochre-yellowish dusting is sometimes perceptible. Distal area black, the margin slightly dusted with yellowish white. Under surface of the hindwing near the distal margin with two somewhat more distinct undulate bands. Markings on the underside of the forewing showing through above almost throughout. Western Amazons, Peru. According to Dr. HAHNEL *livius* is very shy of the light and remains hidden during the day in dark, shady places, possibly where rotting fruits have attracted it during its flight in the twilight. When disturbed their flight is jerky, the wings only flapping a little, and occasionally they settle in the dark, but nevertheless visible from far off, on a hanging liana. The whole under surface of the butterfly is then exposed, with the large brilliant yellow eye-spot showing up strikingly on the variegated grey hindwing, and giving the insect almost an aggressive appearance. The colouring is, however, thoroughly adapted to the grey of the twilight for the short half hour during which *livius* makes its appearance morning and evening. — **caesia** Stich. was described from Venezuela. Forewing suffused with light blue except for the rather intensively black distal-marginal part. Under surface densely striated. Round the large ocellus of the hindwing a deep dark brown patch. Strigulation in general finer than in *brasiliensis* Fldr. — **eurilochus** Cr., the typical subspecies, is rather rare. Upper surface of the wings pale grey, the striation of the under surface showing through, sometimes with slightly brownish tone, distal area somewhat darker, anteriorly but little, posteriorly more distinctly differentiated from the rest of the wing, more rarely slightly blackish (rainy-season form ?), then at the boundary a lighter, washed-out, narrow transverse band, which touches the posterior angle of the cell, is anteriorly slightly tinged with yellowish and terminates vaguely at the middle median vein. In more uniformly coloured examples only a small, pale yellowish diffuse spot remains at the costal margin before the fork of the fourth and fifth subcostal veins. The small spots near the apex mostly only indistinct, without or with only very little white bordering. Surinam, Guiana. — **brasiliensis** Fldr. often attains a huge size, but from Espiritu Santo to its southern limit (Sta. Catharina) it does not seem to vary, that is to say, to be separable locally. *brasiliensis* may be known at once by the prominent pure white subapical spots on the upperside of the forewing, which are not developed to the same extent in any other subspecies. Yet examples occur, particularly in Blumenau and Espiritu Santo, in which these spots are either entirely absent or only indicated. Blumenau ♂♂ have more copious white irroration in the distal area of the hindwing beneath, perhaps indicating an incipient race. At the same time a ♂ from Espiritu Santo is the melanotic extreme. This lacks not only all the whitish, but also the yellow-brown striation, in place of which a mealy powdering of the finest blackish scales is present (= **privata** form. nov.). In the submarginal area of both wings there is a well developed longitudinal band of black colour and as the ocelli are also reduced and darkened one is tempted to think one has a separate species before one. Egg hemispherical, in the middle with an elevation somewhat like a girdle, beneath lighter and transversely grooved, attached to the underside of leaves. Larva cylindrical, tapering anteriorly and posteriorly. Head angled, sloping anteriorly, dirty white with black lines, when young with dense bristles, afterwards with 8 horns forming a short of crest. Body at first dirty white, later green with dark, anteriorly forked mediodorsal band containing red-brown spots; when full-grown the larva is dirty grey-yellow with darker-spotted dorsal line and irregular black lateral oblique stripes sloping down posteriorly. At the posterior margin of the 5th—8th segments are placed short, soft, conical protuberances up to .4 mm. in height (false thorns); the tail is prolonged into a fork of about 9 mm. in length. Body up to 12 cm. long. As long as the larva is green (to the third moult) it rests on the underside of the banana leaves (according to SOMMERFELD gregariously), afterwards it hides on the stem among dry, hanging leaves, feeding chiefly at night. Pupa robust, broad, tapering posteriorly and anteriorly. Dorsal edge strongly projecting, wing-margins likewise strong, 6th—10th segments with short black bristles on the dorsum. Body brown-red, with black dots, black dorsal and lower lateral stripes and black lateral oblique bands, sloping down posteriorly. On the wing-case two silvery, brownish-margined spots, the abdomen only with one entirely free (movable) segment. The metamorphosis occupies 3—4 weeks. Brazil (Amazons and southwards), Argentina. — **pallidus** Fruhst. Bolivia produces a strongly differentiated *eurilochus* race, for which I propose the name *pallidus*. It has more rounded wings than *eurilochus* and *livius* and the forewing is completely transparent, particularly towards the apex. The scaling in the cell is not blue but yellowish and the whole apical part of the forewing appears light brown, as the colour of the under surface shows through intensively above. The black marginal border is almost entirely suppressed, only remaining perceptible in the anal angle of the forewing, behind the 3rd median vein. The hindwing on the contrary is more broadly margined with black-brown

and the brown colour extends even beyond the apex of the cell. The basal half of the hindwing is lighter, blue-grey. The under surface is at once distinguishable from *eurilochus* and *livius* by the yellowish brown instead of grey-white colouring. The anal angle of the forewing is not whitish but dark grey. The subapical ocellus of the forewing is much reduced and all the ocelli of the hindwing are also considerably smaller and more narrowly ringed with black outside. The large ocellus of the hindwing is not rounded but flat oval and more like a cat's than an owl's eye. Bolivia.

C. idomeneus is one of the most beautiful species of the genus, in habitus scarcely inferior to *eurilochus*, though it has narrower wings. It is even more susceptible to geographical influences than *eurilochus*, and splits up into a series of local races, mostly sharply differentiated, of which only three extend beyond central Brazil. Upper surface similar to *philinos*, but the forewing more pointed, with the submarginal band differing in the different races, sometimes pure white and strongly expressed, sometimes again darkened or absent. Under surface always with prominent white patches in the cell, particularly in the ♂♂ and a brilliant patch of white striation in the submarginal area of both wings. Hindwing always with round ocelli, margined with bright yellow and placed in a brown or yellow foreground. **idomeneus** L., the name-type, inhabits Surinam, where my collector JULIUS MICHAELIS captured large numbers by means of banana-bait. All the examples before me bear a sharply defined white longitudinal band, terminating at the posterior median, on the forewing, which in the ♀ is considerably more weakly developed and is already lost at the middle median. ♀ beneath always more deeply coloured, more uniform than the ♂, also in the distal area of the hindwing predominantly striated with brown-yellow. — **apollonidas** *subsp. nov.* is only known to me at present in 2 ♂♂ from Obidas on the Middle Amazon, where MICHAELIS found it in August and September. ♂ easy to distinguish from *idomeneus* from Surinam by the purer white submarginal band of the forewing, which is not sharply defined but extending into the apex of the cell and there gradually lost. The black submarginal area of the hindwing narrower than in the name-type, hence the cell in particular more broadly tinged distally with ultramarine blue. Under surface of the hindwing without a definite brown anteterminal area, eye-spots larger, bordered with paler yellow. — **euphorbus** Fldr. was lost for a long time, but was rediscovered by Dr. KOCH-GRÜNBERG and I have recently obtained examples also from the probable original locality, the Colombian part of the upper Rio Negro. *euphorbus* is a poorly coloured, dusky local form with the band of the forewing washed out and the blue on the upper surface deeper and almost without gloss. Under surface very variable according to the locality. One ♀ is predominantly dull smoke-brown, with only a slightly lighter transcellular patch on the hindwing. The ♀ from Colombia (upper Rio Negro) on the contrary is distinguished by a broad, band-like, nearly white median area and still more by the submarginal pointed marks, which are proximally white but otherwise filled in with light brown. The Colombian ♂ also is much darkened above, the longitudinal band of the forewing costally yellowish, otherwise grey, and as narrow as in *idomenides* Fruhst. For the latter local race I would propose the name **stratonides** *subsp. nov.* — **marsus** Stich. is a subordinate form, deeper-coloured and more strongly shot with blue, about as in the form *euphorbus*. Whitish band on the forewing narrowed; costal and basal areas of the forewing with greenish gloss when viewed from in front. Ground-colour to the end of the cell and the blackish marginal area blue-violet, slightly tinged with greenish. Hindwing to the end of the cell with faint blue-green gloss, thence deep sky-blue; the distal margin, however, remains quite narrowly black and is slightly dusted with whitish particularly behind the apex. The deep blue reflection extends anteriorly almost to the costal margin, only proximally leaving a blackish grey silky area. Hindmarginal area dirty yellow. Under surface with the characteristic glaring ochre-yellow colour in the posterior area, communicating itself to the bordering of the posterior eye-spot, so that the ring of the eye-spot is lost in the yellow area. The ground-colour behind the cell chiefly white and only very sparingly striated. **idomenides** Pará; also in other localities together with the type-form. — **idomenides** Fruhst. Similar to the preceding form, wings somewhat narrower, some of the examples smaller, ground-colour sometimes paler. Band of the forewing in the ♂ narrowed, only visible in whitish colouring to close to the upper median vein. The blue basal area of the hindwing reduced, in an oblique light always greenish, a narrow stripe with a deep blue gloss bounding it distally; the reflection only reaches to half the cell and is also posteriorly broadly separated from the blue colouring of the distal margin or sometimes diffused along the posterior median vein as a deep blue tone to the hinder angle. Distal margin slightly dusted with whitish; ♀ scarcely differing above except in the reduction of the blue basal area on the hindwing; it extends here only about to the end of the cell, the whitish band of the forewing terminates indefinitely at the anterior median vein. Peru. — **hippolochus** *subsp. nov.* The whitish longitudinal band of the forewing somewhat narrower, sharper than in *idomenides* from Peru; under surface lighter, all the whitish parts broader, submarginal area of the hindwing nearly pure white, almost without striation, the submarginal band of red-brown pointed curves which in *idomenides* extends distinctly almost to the terminal border absent. Ocelli ringed with lighter yellow and then more broadly with black. **superba** Coroico, 1200 m., Bolivia. — **superba** Stgr. Apex of the forewing rather sharp, somewhat produced. Ground-colour suffused with blackish, transverse band pure white, sharply defined, anteriorly slightly curved, posteriorly ending in a point beyond the posterior median vein. Hindwing to the end of the cell with blue-grey basal area, which in an oblique light shows a greenish, at the distal edge a deep blue gloss; from here onwards to the distal margin a sky-blue reflection is visible in an oblique light, only leaving a more or less large

spot at the apex. Distal margin of the hindwing strongly dentate, slightly and narrowly dusted with whitish. Under surface marked and coloured as in typical *idomeneus* but more sharply; the posterior eye-spot of the hindwing comparatively small and narrowly ringed, the white area behind the cell rather strikingly contrasted with the about equally broad brownish distal area. Southern Peru. — **praecana** *Stich.* is a form of the preceding. Shape about as in typical *idomeneus* or *agamemnon* with the distal margin of both wings strongly undulate, wings less broad, as large as *superba*. Above clearer grey, even paler, than typical *idomenides*, markings of the under surface showing through distinctly. Band of the forewing narrow, about as in *idomeneus*, the blue reflection extended, but scarcely more than in *idomeneus* itself and on the hindwing not very brilliant. Distal part of the hindwing black-brown. Under surface about as in *idomeneus*, but all the dark parts lighter brown. Ground-colour reddish ochre, the double line before the distal margin of the forewing more strongly dentate. On the hindwing the light areas before and behind the brown median band lighter, hindmargin as far as the submedian ochre-yellow, which colour is extended in the anal area and united with the bordering of the posterior ocellus. The under surface recalls *rhoetus*, but is even lighter and more yellow. South Peru. — **agamemnon** *Weym.* is the largest race. Apex of the forewing almost falcate, distal margin below it deeply excised, undulate. Ground-colour dark, nearly black, but the markings of the under surface showing through faintly, particularly in the cell and at the distal margin. Band of the forewing widened, pure white for its entire breadth as far as the posterior median vein, beyond this distally whitish nearly to the submedian, proximally dusted with bluish. Transverse band anteriorly somewhat narrower, somewhat dentate, the sections between the veins arranged as a series of crescentic or arcuate spots. Posteriorly these arcuate spots become shallower, the band more continuous and only finely intersected with blackish at the veins. Not far from the costal margin, near the apex, there is a small white spot and sometimes a second following it. Hindwing somewhat elongated, at the distal margin extremely dentate, projecting almost in points at the extremities of the veins. Basal area grey-blue to near the end of the cell, in an oblique light greenish, distally with blue reflection. Distal margin itself slightly dusted with whitish. Under surface extremely light, but marked in the same way as in *idomeneus*. The transverse band of the forewing, however, much broader, the dark shading which continues the brown colouring in the median area behind the posterior median vein condensed into a more distinct band, the lines near the distal margin more strongly dentate, the proximal bordered with whitish and towards the adjacent brownish area shaded with black-brown, so that it loses the effect of a separate line and forms a sinuous boundary to the adjacent part of the wing. Hindwing traversed by a complete brown median band; the posterior eye-spot, however, the greater part of which is enclosed in the band, smaller than in typical *idomeneus*. The area behind the cell very distinctly separated from the distal area proper by the white-edged, strongly dentate, band-like marking halfway between the end of the cell and the margin; ground-colour of the distal area anteriorly chestnut-brown, posteriorly only brown along the veins, otherwise whitish. The white patch in the middle of the cell sharply defined. Ecuador (Huamboya, Balzapamba). — **rhoetus** *Stgr.* In the ♂ the white band of the forewing is narrower and shorter, at most only distinct to the 2nd median vein; the blue reflection on the hindwing interrupted in the median area. Anal area ochre-yellow, beneath the entire posterior part of the wing as far as the posterior ocellus bright ochre- or saffron-yellow; the under surface is more brightly marked than in typical *idomeneus*, particularly the whitish cell-patch mostly sharp and the transverse bands in the cell of the forewing purer whitish and sharper. ♀ the same but paler. Eastern Amazon and part of Brazil lying to the south of this; Argentina (?). I have *rhoetus* before me also from Matto Grosso, a single ♂ differing inconsiderably from STAUDINGER's type, which I had the opportunity of seeing in the museum at Berlin a year ago. — Two further adjacent geographical races may be separated: namely **ibykus** *Fruhst.*, which agrees with the Matto Grosso form in its relatively small size and the scarcely produced apex of the forewing. In *ibykus*, however, the anal and basal part of the hindwing beneath a duller, deader shade of yellow. White band of the forewing resembling that of *idomeneus* from Surinam. Minas Geraes; described from 2 ♂♂ and 1 ♀ in coll. FRUHSTORFER. — **ariphron** *Fruhst.* The white band of the forewing much resembles that of *euphorbus*, but stands out somewhat more distinctly in the ♂ and is much reduced in the ♀ but still always somewhat less darkened than in the ♀ of *euphorbus*. Forewing of the ♂♂ with the apical part much produced, the longitudinal band, compared with *ibykus*, scarcely half as broad in spite of its larger size. Under surface, in accordance with its more southerly habitat, with the yellow basal tinge on the hindwing almost entirely suppressed and the forewing essentially darkened. Espiritu Santo, from 2 ♂♂ and 3 ♀♀ in my collection.

C. menoetius *Stgr.* is a rare, very interesting species, nearly allied to *idomeneus*, which has led the monographer of the Brassolids to confuse it with the latter and erroneously to call it *euphorbus* *Fldr.* There is an excellent figure by STOLL in the fourth part of CRAMER's celebrated work as long ago as 1782, on pl. 390. STOLL, however, originated the mistake, as he represents a ♂, but calls it *idomeneus* ♀. STAUDINGER has quite correctly observed and pointed out that *menoetius* differs from other *Caligo* in the strikingly narrow hindwing. Upper surface uniform dark ultramarine, in the ♂ without a trace of a band, only with broad, pale submarginal area showing through faintly from the under surface. The still undescribed ♀, of which there are four examples in my collection, is round-winged, larger than the ♂, lighter blue with brownish white submarginal area on the forewing. Both sexes with the black distal margin of the hindwing scarcely half as broad as in *idomeneus*. Under surface recognizable by the more vividly contrasted colours: thus both wings are traversed by a more compact dark brown median area, in which are placed the somewhat larger and more

distinctly black-ringed ocelli. Forewing with very broad black intramedian spot beyond the cell-wall and essentially more pronounced black zigzag stripes in the cell itself. Both wings then bordered distally with deeper brown and blackish. If it is further added that the median area of the hindwing stands out more sharply whitish than in *idomeneus*, all those differential characters have been mentioned which STOLL's figure reproduces so unmistakably. Surinam, also found by Dr. HAHNEL at Maues on the Lower Amazon. — *aristophanes* *subsp. nov.* is smaller than *menoetius* from Surinam and the upper surface may be at once known by a rather broad yellowish longitudinal band, suggesting *idomeneus*, which extends as far as the middle median. This band, however, is always weaker than in *euphorbus* and *stratonides*. But where *aristophanes* surpasses *menoetius* is in the still more glossy, purer, brilliantly iridescent blue of the hindwing. Under surface easy to distinguish by the lighter grey-brown submarginal areas on the forewing and by a row of brown pointed curves which are wanting in *menoetius*. Coroico, 1200 m., Bolivia. Only known to me in one ♂ in coll. FASSL.

C. atreus is perhaps the largest species of the genus and at the same time the most gaily coloured. Forewing black with a blue-violet median area, which is traversed by a whitish stripe varying in distinctness according to the local race. Hindwing with broad light yellow or orange band, again of greater or less breadth and with the margins more or less incised in the different local forms. Under surface brilliant red-brown with yellow or orange distal area. Apical ocellus of the hindwing very large. Five well separated geographical races: *atreus* *Koll.* In the ♂ the blue-violet dusting of the hindwing viewed from above weak, in an oblique light somewhat more distinct; in it an oblique light band, anteriorly only indicated by thin, short whitish yellow hairs and scattered light scales, gradually becoming more distinct posteriorly and about from the lower angle of the cell onwards grey-white slightly dusted with bluish, changing towards the anal angle into almost pure white. Boundary of this band not sharp, dusted with grey and bluish, and gradually shading into the adjoining ground-colour. Distal area light smoke-brown. In this is sometimes placed a nebulous, slightly undulate, dark stripe, separating another, lighter, band-like stripe from the distal margin; the latter stripe again is proximally bounded by the corresponding, more sharply dentate second marginal line of the under surface. Sometimes the dark stripe is absent or very much weakened. Band of the hindwing light ochre- to saffron-yellow, anteriorly whitish, proximally not sharply defined and on the veins and between them subdentate. The band terminates about at the extremity of the posterior median vein or somewhat before it. ♀ with broader wings, the median area of the forewing suffused with lighter blue, the transverse band mostly somewhat more distinct, the marginal band of the hindwing broader, pale ochre-yellow, anteriorly more strongly whitish. Under surface lighter, the markings somewhat weaker. Colombia. — *dionysos subsp. nov.* differs from *atreus* in having the band of the forewing continued to the costal margin and almost uniformly whitish, dusted with blue-violet, in which this form approaches its next representative, *ajax*. On the hindwing the orange distal area remains darker, reaches the black distal border and becomes broader (transition to *C. uranus*). Under surface with more pronounced contrasts in colour, the white stripe of the forewing more sharply defined and especially proximally straighter, apical ocellus of the forewing larger, anal ocellus of the hindwing considerably smaller, median area of the hindwing deeper brown, conspicuously margined with black distally. Chiriqui (coll. FRUHSTORFER). — *uranus* *H.-Schäff.* is the northern representative of *atreus* and strictly speaking only a geographical race of this widely distributed species. It seems, however, not inconceivable that it might form a separate species on account of its small size, more rounded wings, the absence of the black distal border of the hindwing and the presence of larger white subapical patches on the forewing. The under surface on the contrary can only be distinguished from *atreus* by the smaller eye-spots on the hindwing. I have examples before me from Honduras, where *uranus* occurs very rarely; to the north southern Mexico forms the limit of its range and according to GODMAN it is not very rare in Guatemala, where it inhabits the dense woods; when startled up it flies a short distance and then hides on the tree-trunks. — *ajax Westw.* has the band of the forewing broader and more distinct; at its commencement at the costal margin this is whitish grey with bluish dusting, but gradually changes to a pure white colour. In the middle median cellule the band is as a rule only slightly dusted with blue, the blue scales are there placed at both sides on the edges and finally disappear entirely. Band of the hindwing darker saffron-yellow, in an oblique light with a quite faint purple-red or violet hue, posteriorly strongly bent in a point towards the hinder angle. Venezuela. — *dentina* *Druce* has the band of the hindwing almost continuous for its entire length, only anteriorly broken up into spots, at the proximal edge deeply dentate. Peru, Ecuador (Chimbo, Balzapamba), Colombia (Rio San Juan). — *agesilaus* *Druce* has the forewing as in *dentina*, but the light transverse band somewhat more distinct. In the distal marginal area the blackish nebulous stripe likewise more distinct, so that the proximally adjoining light part near the margin is defined as a dentate band. Band of the hindwing broken up into five separate spots, which are rather remote from the distal margin and of which the posterior ones, and occasionally also the anterior, are loosely connected by a slight dusting. Their colour is yellowish white, the posterior ones somewhat darker. The blackish marginal dusting extends to the middle median vein and is united at the veins with the black-brown ground-colour of the rest of the wings. The anterior marginal spots are heart-shaped, being proximally incised in the middle, the posterior ones elongate. Fringes whitish yellow, standing out conspicuously against the marginal dusting. Under surface as in *dentina*, except that the posterior eye-spot of the hindwing is comparatively very large, the distal area for its entire length mar-

pled and striated with whitish and blackish, and only a narrow stripe near the distal margin, corresponding in position to the row of spots on the upperside, is more uniform whitish. The cell-patch and the elongate ring-spot before the middle discocellular are distinct. ♀ like the ♂, but in general paler. Perhaps only a seasonal form, as transitions occur to the preceding subspecies. Ecuador, Colombia (Valley of the Rio Dagua).

C. arisbe *Hbn.* (65 a), so far as is known, inhabits only the three Brazilian states of São Paulo, Rio de Janeiro and Espiritu Santo. I have no examples from the two former, but in Espiritu Santo *MICHAELIS* has baited and captured *arisbe* sparingly with bananas. The larva lives on Marantaceae. Under surface predominantly yellow-brown with the median area much lighter yellowish, particularly in the ♀. Anal ocelli strikingly broad, first yellowish, then olive-coloured, finally ringed with black, connected with one another by an extended, distinctly defined brown area.

C. oberthueri *Deyr.* is near to *arisbe* and must be regarded as one of the most beautiful *Caligos*. Upper surface of the forewing dark brown-grey, that of the hindwing brown-black, the latter except at the distal border with violet-blue reflections. Under surface dark black-brown with a conspicuous pure white longitudinal band. Ocelli on the underside unusually small. Colombia, Ecuador, very rare. — **phokilides** *subsp. nov.* inhabits Peru (Chanchamayo) and differs from Colombian examples in having a more indistinct, lighter yellowish longitudinal stripe on the forewing. ♀ lighter, the markings in the distal area more distinct. It bears there a partially blurred undulate line, followed proximally, near the margin of the wing, by a sinuous and dentate band. In the anterior part of this are placed near the apex three blackish spots, proximally edged with whitish, one behind another, accompanied posteriorly by two further more shadowy spots. The band behind the cell is more distinctly defined, almost ochre-yellow, anteriorly widened and shading into the ground-colour without any sharp demarcation. Hindwing with less of the blue gloss, faintly shot with violet, the light transverse band-like patch paler and broader, in particular anteriorly; the distal margin more broadly dusted with ochreous. Under surface as in the ♂, but lighter. The egg of this rare species is only half the size of that of *epimetheus* and even smaller than that of *Opsiphanes bogotanus*. It is of a wax-yellow colour with longitudinal ribs, base and apex somewhat flattened and smooth. Larva much darker than that of the preceding species, nearly black; the dorsal markings consist of several irregular light brown spots; the dorsal (false) thorns are black and bent somewhat forwards. Crest on the head and tail-fork much shorter than in *epimetheus*. The food-plant is a low species of palm with primitive, nonfeathery leaves. The larvae seem mostly to occur in pairs. FASSL observed *oberthueri* only on the crest of the West Cordillera above 2000 m., whilst *epimetheus*, although also a mountain butterfly, only occurs lower (from 1400 to 1800 m.); this also fully corresponds with the localities of the food-plants of the two species.

C. martia *Godt.* (65 b) occurs where *arisbe* disappears and has hitherto only been brought to Europe from Santa Catharina and Rio Grande do Sul. Probably, however, the species also occurs in the state of Paraná, which unfortunately has only been insufficiently explored. An example in my collection, which I received from Herr JULIUS ARP as coming from Rio de Janeiro, shows somewhat smaller anal ocelli on the underside of the hindwing, but the locality is not quite certain, especially as Herr ARP has obtained much material from Santa Catharina. *martia* is the rarest south Brazilian *Caligo*; it always only occurs singly and extremely seldom comes to baits of fruit. But it is found with great regularity on the highland of Lages near the sources of the Uruguay at bleeding trees, where the butterflies feed greedily, but are nevertheless very shy, so that it is not easy to take them off their guard. The larva was apparently first described by MABILDE. It is green with yellowish lateral stripes. Head with two short protuberances and two long setiferous horns, dorsum with five false thorns, hairs small, quite fine, tail with the customary double point. Pupa dark havanna-brown. Head slightly pointed, abdomen elongated, middle part thickened, and with four transverse stripes. From September to October. Pupal stage 20—25 days. ♂ smaller than the ♀, which we figure, and wanting the transparent submarginal band of the forewing, under surface with a nebulous, black-bordered spot in the cell of the forewing, which no other *Caligo* species possesses to the same extent. Behind the cell three unequal white intramedian patches. Apical ocellus of the forewing relatively large. Anal ocellus of the hindwing much as in *arisbe*, black with broad yellow bordering which posteriorly shades into greenish. In the cell of the hindwing an elongate irregular spot, which is very variable, hardly alike in two examples, in the somewhat lighter ♂♂ and ♀♀ from Rio Grande do Sul better developed than in Santa Catharina examples.

8. Genus: **Narope** *Westw.*

In this the smallest Brassolid genus we have at the same time reached also the most considerable deviation from the type in shape and neurulation, and indeed the species more resemble an *Anaea* than a Brassolid in their smaller size, the sharply pointed forewing, the short teeth at the medians in the hindwing, and in having the upper surface mostly uniform brown and the under surface entirely without eye-spots and variously irrorated; yet all other points of structure, such as palpi, forelegs and the large precostal cell, agree completely with the family characters, while the discovery of the larva by Dr. W. MÜLLER has removed all doubt as to the

position of *Naroepe*. The genus differs at once from all the others in the 3rd subcostal vein running into the apex and the fork of the 4th and 5th into the distal margin below the apex. This striking neuration occurs extremely rarely even among the Satyrids and is more a character of the Nymphalids. In addition *Naroepe* is distinguished by further characters. The subcostal vein is not constant in the separate species, but both 4- and 5-branched; the 1st branch is either entirely wanting or in part coincident with the costal. The upper discocellular is short, but distinctly present; the middle straight, in the same direction and of the same length as the lower, which is only weakly curved, closes the cell obliquely and meets the median vein at a somewhat greater distance from the 2nd branch than this is removed from the 1st. The submedian of the forewing is strongly sinuous in the ♂, this formation being closely associated with the presence of a tuft in the ♂ (as sexual character) on the under surface beneath this vein; with the hair-tuft corresponds a shiny spot at the costal margin on the upperside of the hindwing. The precostal cell is extraordinarily large and well developed; the precostal vein simple, nearly straight, proximally directed. The cell is obliquely closed by a rather short and straight lower discocellular. Head large, eyes naked, palpus flat, densely scaled and haired; first joint short, second about 4 times as long, terminal joint short, pointed, extending beyond the head. Antenna moderately long with the club gradually thickened. Thorax strong, densely haired; legs strong, abdomen short, pointed. Forewing with strongly curved costa and prominent, pointed apex. Distal and inner margins in the ♂ nearly straight, anal angle sharp. The under surface mostly bears a scent-spot and hair-pencil. Uncus with the processes short and divergent, i. e. with the points directed outwards. Valve simple, with two strong teeth. Hindwing often slightly angled. Cell of the forewing broad at the end, more than half the length of the wing. This genus contains the smallest species of the family; they are uniformly coloured, the under surface resembling leaves; they come to light and are also observed on bait at night. — Larva on bamboo, feeding by night, its general appearance like that of the other Brassolid larvae. Head with 3 pairs of horns, end of the body with tail-fork. — Pupa compact, ventrally compressed, with short tubercles and two horns on the head, suspended, with one free segment. South and Central America (from Paraguay to Guiana on one side, from Bolivia to Mexico on the other).

Hindwing more or less distinctly produced at the distal margin.

testacea. **N. cyllastros** is the commonest and best known species of the genus and is at the same time the only one which extends northwards beyond Colombia and of which the early stages are known. — In *testacea* Godm. & Salv. the ♂ is rust-red above, apex of the forewing and basal half of the hindwing darkened with brownish. Distal margin of the latter wing only feebly angled at the middle median vein. Under surface pale ochreous with scattered darker small spots, striae and shading, the whitish spots of the hindwing apparently always absent with the exception of the anterior ones. ♀ with the hindwing more strongly angled; upper surface of the wings dark brown or smoke-brown. Panama (Chiriqui). Very rare, only a few examples yet found. — *stygius* Stgr., from Fonteboa on the Upper Amazon, was erected on a ♀ received from Dr. HAHNEL. Smaller, with the general colouring even darker than in *cyllastros* (62 d), under surface somewhat less intermixed with whitish grey. Hindwing with seven yellowish anteterminal dots, of which the first is distinctly oval and ringed with black, whilst the sixth is the strongest. — *cyllastros* Westw. (= *cyllene* Fldr.), probably described from examples from Rio de Janeiro, is considerably darker in the ♂ above than the original of our figure (62 d) (which came from Santa Catharina) and beneath as pale as the ♀ figured from Santa Catharina; a difference which is already mentioned by STAUDINGER in his „Exotische Tagfalter“ 1888, p. 218. In the course of two years I took only a few examples near Theresopolis, Sta. Catharina, and I have ♀♀ before me from Blumenau. According to BÖNNINGHAUSEN very rare in shady places near Rio de Janeiro. Taken by me at banana bait. Dr. WILHELM MÜLLER found the larva feeding at night on bamboo, it was already in the fifth stage and a few days before pupation was 7.5 cm. in length, inclusive of the tail-fork, which was 6 mm. Head with three pairs of horns obliquely directed posteriorly, arranged like a collar, body thickened towards the middle, otherwise slender, the horns and the tail-fork laterally compressed, the two parts of the tail arising far apart, but running parallel; head brown with a black spot in the middle below the horns, which sends out two stripes to the base of the horns and two to the lower angles of the head. Body a mixture of pale red and grey-brown. The pale red colour is somewhat irregularly arranged and forms undulate lines. Pupa rather stout, the posterior segments dorsally rounded with a slight central ridge, which is divided into three humps, in addition two further protuberances at the base of the wings and two horns. The wing-margins are indistinct. The markings present a peculiar mixture of yellow, brown and black; here and there, especially on the dorsum, there are some white spots.

cyllarus. **N. cyllarus** Westw. (62 d) with the type from the state of Rio de Janeiro, where the species occurs very rarely in the Organ Mountains. MICHAELIS discovered it in Espiritu Santo, I myself found it in Santa Catharina. One ♂ in my collection is said to come from Rio Grande do Sul and STICHEL names São Paulo as a further locality. ♂: head and eyes uniformly reddish brown. Venter and legs pale ochre-yellow. Upper surface reddish brown, of lighter or darker tone, basal and apical areas somewhat duller. At the end of the cell, on the lower disco-

cellular and again not far from the distal margin between the radials there is a small black-brown spot, the last-named sometimes indistinct or absent. Distal margin darkened, with a narrow blackish undulate band, not sharply defined. Under surface pale ochre-yellow, very variegated, irregularly marbled with darker and whitish shades. At the costal margin, in the cell and in the distal marginal area dotted with dark brown, then with two more or less distinct dark transverse bands; apex dusted with whitish, at the turned-up part of the hindmargin an anteriorly directed light hair-tuft, covering an anal scent-spot. Hindwing with the distal margin angled at the second median vein; colouring as in the forewing, at the end of the cell darker spotted, anal area lighter, a scent-spot at the middle of the costa. Under surface lighter with dark transverse band; distal area darker with submarginal undulate band. In the ♀ the distal marginal band is more sharply defined, general colouring somewhat paler. South Brazil (Sta. Catharina, São Paulo, Espiritu Santo).

N. sarastro *Stgr.* Head dull ochre-yellow, upperside of the abdomen and thorax red-brown, underside *sarastro*. and legs ochre-yellow. Forewing with scent-spot and pencil as in the preceding species; shape of the wings similar, but the apex of the forewing more pointed, more projecting. Upper surface red-brown, apex and distal margin blackish. Under surface almost ochre-brown, with darker spots and striation, especially at the costa. Cell crossed by two diffuse, darker bands. A triangular darker marginal area in the distal third of the wing is bounded by a light stripe, running from the apex towards the middle of the inner margin. Hindwing unicolorous with very dull submarginal band which is darker at the apex. Under surface with 3 diffuse, darker parallel bands, running from the costal margin in a slight curve to the inner margin. ♀ dark brown, distal margin narrowly reddish brown, apex of the forewing strongly produced; starting from the costal margin an elongate diffuse reddish brown spot, which is bag-shaped and rounded off near the distal margin below the apex. Under surface light grey-brown, irregularly irrorated and dotted. In the apical area dusted with whitish, from there obliquely towards the hindmargin a darker, distally dirty white nebulous band, much as in the ♂. In the fork of the 4th and 5th subcostal veins and also below the latter a small whitish spot, behind it a small blackish spot, slightly white-pupilled, then again a small white dot. Hindwing with the distal margin lighter, not sharply defined. This shade is widened posteriorly and anteriorly runs out on the veins. Under surface coloured like the forewing, indistinctly clouded with darker, near the middle of the costal margin a dark dot surrounded by a lighter area, accompanied posteriorly by a row of spots parallel with the distal margin, the first two are mere rounded spots of a lighter shade, while those which follow form elongate whitish patches. Colombia, Rio Agnaca Valley, about 2000 m., Upper Rio Negro at about 800 m., taken by FASSL. — **disyllus** *subsp. nov.* *disyllus*. is a smaller form, mainly grey-brown instead of reddish ochreous, the apical border of the forewing duller grey instead of black, the terminal band of the hindwing washed out, the yellowish patch in the cell and along the costal of the forewing in more vivid contrast to the grey median part. Under surface darker, more copiously banded with red-brown and with deeper purple gloss. Huancabamba, 1500 m., Peru.

N. anartes *Hew.* Forewing in the ♂ forming a right-angled triangle, costal margin curved, apex *anartes*. rectangular, sometimes produced into a slight point, distal margin nearly straight. Hindmargin straight, from the base outwards somewhat folded over for a third of its length. Upper surface lighter or darker rust-brown. Apex broadly blackish. Under surface pale ochre-yellow, with the exception of the hindmarginal area spotted and clouded with black-brown. Across the cell run 2 dark, irregularly defined bands. Before the apex close to the costal margin a small white spot, the apex itself dusted with whitish. At the folded part of the hindmargin a light brown hair-tuft, covering an oval yellow scent-spot. Hindwing smoke-brown, distal margin with undulate boundary-line, relieved with rust-brown. Under surface brown, clouded, spotted and watered with lighter and darker; a dark band from the middle of the costa obliquely across the cell to the submedian. Median area sometimes posteriorly dark shaded and bordered with whitish, and containing an undulated row of spots parallel with the distal margin. The spot in the lower median cellule always somewhat larger and more distinct, mostly elongate or reniform. Close to the uniformly brown distal margin is placed a blackish undulate line, the margin itself is more or less undulate and at the middle median vein more or less strongly angled. The colouring, particularly beneath, of varying sharpness, the under surface sometimes with very diversified marbling. Bolivia. — **syllabus** *Stgr.* is the somewhat larger race from Chanchamayo in *syllabus*. Peru.

Distal margin of the hindwing in the ♂ fully rounded.

N. nesope *Hew.* Forewing triangular, apex sharply rectangular, distal margin anteriorly straight, *nesope*. posteriorly slightly convex; hinder angle smoothly rounded, hindmargin straight, near the middle narrowly turned up. Upper surface red-brown, basal area behind the cell grey-brown, gradually becoming dusted with velvety blackish; under surface reddish brown, clouded and marbled with darker. Near the base and across the end of the cell a dark brown band, the latter broadest at the costal margin; in the costal area a small white spot. At the apex whitish dusting and near it three small black dots. Hindwing almost oval. Distal margin without appreciable angle, but the hinder angle rather prominent. Upper surface grey-brown with faint rust-red tone, distal margin somewhat lighter, red-brown; costal margin light brown, a bare friction-area with small yellowish pilose spot before the subcostal blackish. — Under surface brown, near the base darker, further posteriorly with three reddish spots. From the costal margin to the anal angle runs a dark brown

band, behind the middle distally bordered with whitish, and beyond the cell an undulate row of small black spots, of which the two nearest to the hinder angle are dotted with white. Ecuador.

cyllabarus. **N. cyllabarus** *Westw.* Apex of the forewing rather pointed, distal margin slightly convex. Upper surface rust-brown or fox-red, towards the distal margin somewhat darkened; the latter itself pale brown, the dark tone thus forming a vague band. Before the anterior median vein near the distal margin a black, white-pupilled spot. Under surface ochre-yellow, spotted and marbled with brown, but not sharply. From the costal 2 diffuse transverse bands across the cell; from the whitish apex an oblique, diffuse nebulous band runs towards the middle of the inner margin. A black dot in the distal part of the cell and another between the radials before the distal margin. Hindwing likewise rust-brown with distinctly defined dark submarginal band. Under surface pale brown, costa striated, in the middle of the costal area a dark, white-pupilled spot; the rest of the wing indistinctly spotted and marbled with darker; across the middle of the wing a diffuse dark oblique band. Scent-spot as in the preceding species. Cayenne, Colombia, Amazons, Bolivia.

panniculus. **N. panniculus** *Stich.* ♂: head, palpus, antenna, body and upper surface of the wings smoke-brown, in specimens from Bolivia darker, nearly blackish. Forewing right-angled-triangular, costal margin curved, apex sharp, almost rectangular, distal margin fairly straight, hinder angle rounded-rectangular, hindmargin straight, about in the middle somewhat folded. In the posterior part of the median area a large, rounded, velvety spot of darker colour; this is placed proximally to the cell, its anterior extremity nearly touches the upper median vein, distally it remains about 5 mm. from the margin of the wing and posteriorly it extends beyond the submedian but with its boundary not sharply defined. Under surface lighter, irregularly spotted. Base darker shaded, then 2 abbreviated nebulous bands across the cell, in the apical area a small white spot; scent-organ as in the preceding. Hindwing above unicolorous with light oval scent-spot. Under surface lighter, slightly sprinkled with brownish, with indistinctly defined nebulous band beyond the cell; beyond the middle of the costa a small white dot. Paraguay, Bolivia (Rio Yuntas). 1 ♂ from Matto Grosso in coll. FRUHSTORFER is smaller than Paraguay ♂♂, paler grey-brown, beneath light earth-coloured, hindwing with large liver-like intramedian ocellus, broadly filled in with white.

Hindwing of the ♂ above without scent-spot, but with a small hair-pencil arising in the cell and partially concealed in a pouch-like fold.

albopunctum. **N. albopunctum** *Stich.* Head and body smoke-brown above, whitish grey-brown beneath. Wings dark smoke-brown above, without markings except a small, pure white spot in the apical area behind the fifth subcostal vein, near the distal margin. Under surface marbled and shaded with lighter and darker brown. Costal margin dark, with short whitish striation. Starting from it two dark, irregularly defined transverse bands, one across the cell, terminating at the median; at the margin near the base a thin, anteriorly directed hair-tuft without scent-scale spot. Hindwing about triangular, with convex margins. Costal margin somewhat less convex, apex rounded, distal margin curved, slightly undulate, at the anterior median vein obtusely angled. Hinder angle obtuse. Upper surface without markings, hindmarginal area more thinly scaled, pale grey-brown, in the cell and along the submedian long brown hairs. On the wall of the cell, before the origin of the posterior median vein, a small hair-pencil, extending beyond the median, and partially concealed in a pouch-like fold on the lower median. Under surface brownish, strongly watered and dotted with whitish, particularly in the proximal half, which is sharply bounded by a narrow brown stripe running obliquely from the distal part of the costal margin to the distal quarter of the hindmargin. In the distal part of the wing an undulated row of black-brown, lighter-bordered dots, about halfway between the end of the cell and the margin of the wings; the first dot sometimes with white centre. Then follows a vague chain of dark spots similarly arranged and afterwards copious whitish marbling, the distal margin narrowly brown. Length of the forewing 28 mm. Peru (Marcapata).

Addenda.

fruhstorferi. **P. 293.** *Opsiphanes fruhstorferi* *Röb.* (63 a) should be inserted before *sulcius*. Black-brown above, the forewing with white oblique band, broken in its posterior part, arising in the middle of the costa and terminating in a narrow point before the distal margin at the posterior median vein. In the apex of the forewing 3 small white spots, hindwing with lighter, irregular, broad submarginal line. Under surface brownish grey, uniformly striated, with 2 larger, and between them 2 smaller ocelli. ♀ similar, larger, the apical spots of the forewing and the submarginal line of the hindwing more distinct. South Brazil: Sta. Catharina, Lages. Very local; I found it only at the sources of the Uruguay, where the water-courses traverse those wooded places which occupy the valleys of the Campos. The butterflies fly near the ground and regularly frequent the sap exuding from small trees, at which they feed for hours. Time of flight the end of December to February and March.

Alphabetical List

with reference to the original descriptions of the forms of the American *Brassolidæ*.

* signifies that the form is also figured at the place cited.

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6. Family: *Morphidae* Westw.

This small family embraces the most strikingly characteristic butterflies of South America and the most magnificent of the Lepidoptera, which show the butterfly type in a perfection that is only surpassed by the Indo-Malayan *Ornithoptera*. The brilliant colouring of the upper surface and the elegant ocelli which nearly always adorn the under make the *Morphidae* superficially a very distinct, easily recognized group. It is not very easy, however, to separate them morphologically, for in spite of the external differences there are only indefinite structural distinctions from the Brassolids, Satyrids and Nymphalids and they form rather a transition from the Satyrids to the Nymphalids, so that they can only with difficulty be maintained as a separate family. Also from the Indian Amathusiids, which were formerly united with them, they only differ essentially in their habits and the food-plants of the larvae. All the Morphids agree in the weakly developed thorax, short abdomen, and in an extraordinarily powerful flight, which latter at once separates them from the sluggish Satyrids, Amathusiids and Brassolids. They share with the Nymphalids the habit of flying in the brightest sunshine, and structurally the open cell of the hindwing. With the Indian Amathusiids the Morphids are indeed somewhat allied in having larvae of the same shape, but differ again in the food, as the larva of the Amathusiids feeds on Monocotyledons, that of the Morphids, as far as is known, exclusively on Dicotyledons. From the bulk of the Amathusiids their Neotropical relatives differ in having two subcostal veins arising before the end of the cell on the forewing, a form of neuration which is only found again quite exceptionally in the Taenarid genus *Hyantis*. In the clasping-organs, however, the Morphids are highly specialized, and although the general arrangement of the tegumen suggests the Satyrids and Brassolids, those of *Morpho* differ in the extremely massive, unshapely uncus and valve. In some species (*Morpho hercules*) the breadth of the uncus actually exceeds that of the valve in the other families and is not equalled even in the Nymphalids. The robust uncus only recurs in the Brassolids (*Dynastor durius*) and even here considerably less extreme; the valve finds an analogy in the Papilionids (*Ornithoptera*) and in *Hestia*. The amorphous lateral clasps of the uncus, however, are entirely without a parallel. In the neuration may further be mentioned the fairly similar course of the discocellulars and their nearly uniform length. In the nearly straight middle and lower discocellulars the Morphids and Brassolids contrast with the Amathusiids, in which the lower discocellular is as a rule concave and deeply retracted proximally. The precostal cell of the hindwing may be distinctly developed (*Morpho menelaus*) or absent (*M. catenarius*), in the former case providing a further link with the Brassolids, in the latter with the Amathusiids. The median spur of the forewing also, on which Dr. SCHATZ lays special stress, is variable: either robust, short and pointed or filiform and distally curved, as is found also in the Amathusiids. The size of the cell of the forewing varies in the different groups of species; it is large in the *menelaus*, smaller in the *hecuba-hercules* group. GODMAN and SALVIN in 1881 recognized two subdivisions according to the shape of the hindwing: a) with tailed (*hecuba* group) and b) with rounded hindwing (*cypris* group). Between the two stand the members of the *aega* group with elongate, narrow hindwing. Dr. SCHATZ divided the species into six subdivisions, according to the scheme of colouring. The coloration of the 40 or so known species is indeed unusually variable and may be pure white or brilliant blue; between these come the members of the *hercules-hecuba* group with all gradations from light yellow to dark green and a dull chalky blue. The degree of sexual dimorphism is quite as variable as the colouring; species occur with the sexes almost alike (*laertes*, *hecuba*, *hercules*), whilst the *rhetenor-cypris* group shows astonishing contrasts in colour. It is worthy of note that just those ♂♂ which have the brilliant *Morpho* colouring (*cypris*, *rhetenor*) consort with almost ugly clay-yellow or dull ochreous ♀♀, which still tend to retain the colour of the Brassolids, from which the Morphids have probably developed. In a few species, however, transitions also occur.

The brilliant gloss of the ♂♂ is solely a physical phenomenon and is not due to any blue pigmentation in the scales, but to interference of the rays of light which pass through the infinitely thin layers of the scales. The scales themselves are simple yellowish to brownish, or opaque milk-white, extremely resistant in the chloride bath. The eyes of all the Morphids are naked, the antennae delicate, gradually terminating in a weak club. Apart from a friction-area at the basal part of the inner margin of the forewing no secondary sexual characters are present. One species is said to smell strongly of sulphur.

The egg of the Morphids is very large, in some species (*menelaus*) up to 2 mm. in diameter, hemispherical, not shiny, grey-white and but little transparent. In the species of the *achilles* group it has a narrow red-brown horizontal ring, in one species (*peleides*) the surface is rough (FÄSSL).

The larvae live in nests on different forest-trees and especially on the climbing plants, but attack one another. There are about five moults. Larva cylindrical, rather slender, somewhat thickened in the middle, tapering posteriorly. The last segment terminates in an indistinct tail-fork. The head is comparatively large and bears a pair of horizontal, conical processes, directed anteriorly, which are sometimes only rudimentary. Colour always bright, sometimes variegated, yellowish with red-brown dorsal stripes or cross-shaped figures, back with long subdorsal tufts of bristles, of which the middle and posterior are in some cases gaily coloured. Pupa similar to that of the genus *Amathusia* but more oval. Head with two tubercles, wing-cases distinctly projecting, abdomen sometimes belted with yellow; colour green or yellowish. Pupa on twigs or leaves attached by the abdomen but hanging free. The pupal stage lasts 20—30 days.

The Morphids, especially the entirely blue species, form on account of their brilliance a characteristic of the South American landscapes. They strike every naturalist and mention of them recurs in works of travel with the same stereotyped regularity as the description of the parrot's flight or the abundance of the humming-birds.

The author of these lines had the pleasure of himself observing Morphids in the woods of Sta. Catharina, but especially in a lonely side valley of the Capivary River, which at that time was still little explored by white men. A crystal waterfall sprinkled the roots of the forest giants, providing a point of attraction for butterflies of all kinds. Just as wild animals tread down regular tracks in order to reach water, so the Morphids assembled here daily, following up any chance clearings to get to the cascade, as if they came to seek cooling refreshment among the softly rustling arches of the tall bamboos, which were shaken and bedewed by the foaming water. They did not come in crowds but singly, floating along quietly. And how patiently one waited, until after some minutes of silent expectation a second iridescent form appeared, to be captured with the almost unfailing certainty of long practice as soon as it ventured within reach of the net.

The magic impression which the Morphids make on the European traveller seems to be shared also by the natives. Dr. KOCH tells us (*Archiv für Anthropologie*; Brunswick, 1906, V, part 4, p. 295) that *Morpho menelaus* is chosen as a favourite model for the dance-masks of the red-skins on the Upper Rio Negro and Yapura Uaupes.

The habits of the separate species differ very much. Some, such as *achilles* and *deidamia*, fly unsteadily at the edges of woods or along the forest-paths which intersect the tropical forests and commonly settle on leaves or damp places on the ground or on the river-banks, also on fallen fruit. One species (*catenarius*) prefers the underwood, is even found near human habitations and can be baited in rather large numbers with hung-up bananas. The species of the *hecuba*, *menelaus* and *rhetenor* groups, however, avoid the ground; they never leave the timber-forests and soar round the tops of the highest trees without appreciable movement of the wings. In Ecuador it has been observed that the species of the *M. menelaus* group, which were flying along a small wooded branch-valley, stopped short on the bank of a broad river and flew back into the shade, not venturing even to cross a short open space in order to reach the other wooded bank.

The range of the Morphids extends over the whole of tropical and a part of subtropical America, from Mexico as far as Southern Brazil and Northern Argentina. The Amazon is its headquarters, particularly the streams which run down the eastern Cordilleras of Ecuador and Peru and form the sources of that river. On the Antilles no *Morpho* has yet been found, except on Trinidad, which in other respects also can scarcely be separated zoogeographically from Venezuela. Concerning the vertical distribution reliable information is wanting, but it is certain that some species occur up to about 2000 m. The alpine regions are avoided by the Morphos as by the Hestias or Amathusiids, as the shape of their wings is adapted to the protection of the woods. The period of flight of the Morphids is in general a very short one and it may be assumed that, except in the pure tropics, they everywhere occur (as in southern Brazil, where the author has been able to observe them himself) only in the height of the tropical summer, thus in the most favourable time for the development of the butterfly life. In consequence of their not being on the wing all the year round, like many Nymphalids and Pierids, they are only in quite rare cases subject to the influence of climatic contrasts and seasonal variation is only known with certainty in two species (*perseus* and *portis* Hbn.). On the other hand almost all the species are subject to a high degree of geographical modification, forming separate races whose identity with the collective species must often remain doubtful, especially at the extreme limit of their range, and one may assume that in the Amazon region in particular a distinct local form is developed on every important tributary. This phenomenon recurs in the different Brazilian provinces and it is astonishing that it was left to me to notice and to establish this fact.

The examples figured are from the H. FRUHSTORFER collection at Geneva, which also contains the types of the newly described forms, except where the collection in the Zoological Museum at Berlin is mentioned as the source. Dr. K. JORDAN was kind enough to send some types from the FELDER collection in the Tring Museum for comparison, with the help of which I have been able to correct some long-standing errors, espe-

cially some for which Dr. STAUDINGER was responsible. I have to thank Dr. JORDAN most sincerely for his valuable help.

Genus: *Morpho* F.

Two groups: a) Hindwing with projecting tail-like appendage or deeply sinuate. Upper surface without metallic sheen; tegumen with unusually broad lamellae. *Iphimedeia* *nom. nov.*

b) Hindwing as a rule rounded or only slightly waved, upper surface (only one exception) with brilliant reflection; tegumen with finger-shaped excrescences. *Morpho*.

Group *Iphimedeia* Fruhst.

Species without metallic gloss on the upper surface, which varies from greenish blue to whitish in all gradations. The colouring very inconstant, the extremes sometimes not even confined to any fixed locality. Upper discocellular long, middle only inappreciably concave (i. e. proximally curved), the lower straight and placed at right angles to the anterior median. Cell of the forewing very narrow at the apex. Uncus broad, lateral clasp strikingly flat, valve without distal points. Most species love the sunshine, ascend to a great height and fly exclusively round the tops of tall trees.

M. hercules is confined to central and southern Brazil, where it occurs from Espiritu Santo to Sta. Catharina and ascends from the lowlands to about 800—1000 m. Flies chiefly in March. Concerning the early stages I am indebted to the detailed account furnished by Herr ZIKAN, who has bred *M. hercules* from the larva in Minas Geraes and whose report of his breeding we here reprint:

“*M. hercules* has one generation and flies in February and March. The eggs are laid on the leaves of a climbing plant (Cipó) with thick hard leaves (somewhat resembling those of the coffee-tree) and yellow fruit. This Cipó becomes rather thick and grows even in the highest trees. It seems to me to prefer dry ground and the tops of mountains. When small the larvae rest closely pressed together on a leaf which they cover with web as they do also the twigs on which they crawl to their food. I found them in numbers varying from 17 to 150 specimens; once even about 300, but I suspect that the latter came from more than one batch of eggs. I noticed that the butterfly prefers to lay its eggs in the decumbent tips of the Cipó, sometimes even quite low, about the height of a man and even lower. Others again I found very high, so that it required some courage to fetch them down from the giddy height. The first larvae (150 specimens) were found on the 30th September 1907. Most of them were moulting. They were about $1\frac{1}{2}$ cm. in length, apparently after the first moult, as they underwent four more moults in captivity (including pupation). On the 13 October the first two larvae performed the second moult in captivity. When collected the colour of the larvae was red, body hairy, dorsal line lighter, with hair-tufts on both sides, the longest hairs being white. Head large, dark red, nearly black. After this second moult the hairs became denser and longer, especially at the sides. By 30 October all but twelve had moulted; four specimens had died, being stung by dipterous parasites. On the 10 November I noticed the first larva had completed the third moult; by the end of November most of them had moulted. Before the fourth moult, that is before pupation, the larva changes to a dirty green colour. I found the first larva in this condition on the 17 December and the first pupa the 31 December; on the 27 January the last larva pupated. From about 1200 larvae I obtained 800 pupae. Very many of the former were stung, without exception by flies. Others again dried up and went mouldy. The pupa is green, ringed with white. The colour scarcely changes appreciably before the emergence of the butterflies. The pupal stage lasts in the ♂♂ 45—52 days, in the ♀♀ 57—60 days. The first butterfly emerged on the 4 February 1908, the last on the 21 March. In addition to the ♀♀ having a longer pupal period than the ♂♂, their larvae also appear to pupate later. For from the 19 to the 25 of February only 20 ♀♀ emerged; whilst from the 26 February to the 1 March only 9 ♂♂ emerged, against some 170 ♀♀. About 50% of the pupae died, mostly dried up. When one broke them open they were mouldy inside. I lost a large number of larvae through their being too crowded, other larvae disturbing and knocking them down when they were pupating. Although I found the larvae of this butterfly in such abundance I have only seen about a dozen butterflies in the open. They fly high like *Morpho nestira* and not like *M. achillaena*, which keeps about 1 m. above the ground.

With regard to the larvae I may add that it is best only to take them in the adult stage; when collected young they do not grow properly, as every time they are given fresh food they spin over it so as to get a foothold, and in this way much nourishment is wasted. From those larvae which I collected when small I obtained quite small butterflies, while those which were taken large yielded large and more brightly coloured specimens. The hairs of the larva easily become detached, penetrate into soft places in the skin (between the fingers, etc.) and cause irritation. The larvae live gregariously until pupation. They feed at night; in the adult stage they sit during the day underneath the Cipó or on the trunk of the tree round which is winds. When small they sit on the spun-up leaves”.

The pupa differs from that of *M. anaxibia* in the longer, more robust form, the more developed horns

on the head, the much darker green ground-colour, the absence of the white abdominal ring and the presence of whitish yellow lines before the margin of the wing-cases. The collective species splits up into two local races:

hercules. **hercules** Dalm., originally described from Rio de Janeiro, but also occurring in Minas Geraes and Espiritu Santo. Upper surface more grey-green than in examples from more southern localities. Upperside of the forewing with two rows of submarginal yellow dots, of which the proximal are considerably broader than the antemarginal. Patch before the apex of the cell narrow, dark green, subobsolete. Cell black-green. Discal area glossy dark green. Distal border broad, deep black. Base of the forewing dark, of the hindwing somewhat lighter sea-green. Under surface: forewing bearing two very large rounded ocelli between the medians and two much smaller ones between the upper radial and the upper median. The proximal median spots narrow, irregular. Discal spot black. Cell with two very broad white longitudinal bands, posteriorly confluent. Hindwing predominantly red-brown with silver-white median band about 3 mm. in breadth. 3 anal ocelli with black iris.

diadema. Length of the forewing 90 mm. and upwards. Espiritu Santo to Rio de Janeiro. — **diadema** Fruhst. (69 a). Upperside of the forewing with two rows of submarginal yellow dots, the proximal row only in the ♀ essentially broader than the antemarginal. Patch before the apex of the cell very broad, sharply defined, yellow-green. Cell dark olive-green. Discal area dull olive-green. Distal border broadly brown-black. Under surface: forewing with only two, very large, circular ocelli between the medians, the upper sometimes wanting. A third, small diffuse ocellus between the radials is sometimes present. The proximal, triangular median spots somewhat smaller than in *M. richardus* (p. 337), larger than in *hercules*. Cell with 2 isolated white, posteriorly pointed spots. Hindwing in the ♂ predominantly whitish grey with the basal part light brown, in the ♀ grey-white, marbled with light brown. Median band 5—6 mm. in breadth. 3 anal ocelli, of which the distal, with light brown iris, is occasionally obliterated. Length of the forewing: 75 mm. or above. Larva according to Dr. WILHELM MÜLLER on a *Menispermia*, gregarious, in the last stadium occasionally resting in masses of over a hundred individuals, one beside another, on the trunk of the trees up which the food-plant climbs. They remain quiescent during the day, only feeding at night. Ground-colour somewhat brown-red with a lighter red-yellow dorsal stripe and numerous spots of the same colour, almost fused into a lateral stripe. Head yellowish, with long bristles. Pupa with weak edges to the wing-case, green, not transparent, partially marked with white and covered with a white mealy coating which can be rubbed off.

M. theseus apparently replaces *hercules* in Central America and the Andean region. It is less constant than *hercules*, inclining to geographical and probably also to climatic variation, has somewhat narrower wings than *hercules* and is distinguished from all other Morphids by the long, pointed teeth of the hindwing. —

aratos. **aratos** Fruhst. (66 c), the most northerly subspecies, inhabits Honduras and like all its Central American allies is among the greatest rarities of the fauna of their region. I have only received one example, which WITTKUGEL found during about 10 years' collecting near San Pedro Sula in Honduras. Ground-colour of both wings above and beneath paler than in its nearest ally, *M. justitiae* Godm. & Salv. from Guatemala. On the upper-side of the forewing the third inner (proximal) submarginal row of dots (which is especially strongly expressed in *justitiae*) is obsolete. — **justitiae** Godm. & Salv. has the yellow transcellular spot on the forewing more than three times as broad. The submarginal crescents of the hindwing are more elongated; the black colouring of the distal part of the hindwing extends to beyond the middle of the wing. Under surface red-brown instead of grey-yellow as in *aratos*. Ocelli of the hindwing more filled in with black. The locality "Mexico", which

aquarius. GODMAN and SALVIN recorded from an old example from coll. DRUCE, has not been confirmed recently. — **aquarius** Btlr. designates a well differentiated form, which occurs from Costa Rica to Panama as a subspecies, but in Colombia is still found as an accidental or seasonal variety together with the name-type *theseus* at Muzo, 400—800 m. *aquarius* has the basal area on the upperside of both wings chalky or milk-white, the original brown ground-colour confined to the submarginal region. The third (proximal) row of spots on the forewing, which stands on a light brown ground, assumes a blue-grey colouring. On the hindwing the pronounced yellow patches of *aratos* and *justitiae* disappear almost completely. The under surface is distinguished by a whitish violet postmedian area proximally to the ocelli, which is absent in *theseus*. Transitions to *theseus* are not

theseus. rare in Colombia. — **theseus** Deyr. is the Colombian typical form, found in Muzo and in so-called Bogotá consignments, which it is well-known really come from the low-lying country, just as the so-called Darjeeling collections were likewise not made at Darjeeling, but in the hot valleys of the Testa. Ground-colour brown inclining to olive-green, base only quite faintly suffused with whitish. Cell black-brown at the extremity and with an inconspicuous whitish spot before the apex. Forewing with only two distinct rows of yellowish patches.

thiasus. Under surface red-brown with purple gloss, in places reddish ochre-yellow. — **thiasus** subsp. nov. is based on examples from coll. STAUDINGER with the upper surface darkened throughout, brown-black. Colombia, more

amphitrion. exact locality not ascertainable. — **amphitrion** Stgr., from Chanchamayo, South Peru, has the forewing much elongated, with the cell blue-grey. ♂♂ also occur with the upper surface suffused with blue-white throughout. —

susarion. **susarion** subsp. nov. is the most southern Andean branch-race, with somewhat darkened upper surface and of smaller

yaritanus. size than the Peru race. Bolivia, apparently not rare. — **yaritanus** subsp. nov. constitutes the transition from *theseus* to *aratos* and *aquarius*. It agrees with *aquarius* in the extended milky blue basal tinge on the upper surface

and with *aratos* in the very large, rounded, light ochre-yellow submarginal spots of the hindwing, and the forewing is distinguished by a large blue-white transcellular spot and very large blue-grey proximal submarginal dots. The under surface closely approaches *theseus theseus* Deyr. from Colombia in the predominantly red-brown colouring and the extended ochre-yellow areas. Always rare and local. Venezuela. — A further, very rare local race of *theseus* (but smaller than all the others), hitherto treated as a species, is *juturna juturna* Btlr., recently captured by FASSL on the upper Rio Negro at about 800 m.; hindwing with long lobes and upper surface a peculiar blue-white, faintly opalescent; distal border rather broadly black-brown and bearing on both wings a row of blue-white submarginal patches and a subterminal double row of red-brown undulate lines. Cell of the forewing separated from the transcellular white area by a broad, black, nearly triangular spot. — *fruhstorferi* Rōb. is the corresponding race from the Eastern Andes, of which only one ♂ is yet known, discovered by Herr RICHARD HAENSCH at Santa Inez, East Cordilleras of Ecuador. It differs from *juturna* in the chalk-white upper surface without blue or violet admixture and the more pronounced yellowish subapical patches of both wings. Found at an elevation of about 1000 m. *fruhstorferi*.

M. perseus is an extremely variable polychromatic species, resembling a *hecuba* in miniature and copying its scheme of coloration. *perseus* with its branches inhabits the whole of Guiana and the Amazon country as well as the Andean region from Colombia to Bolivia, and was recently discovered also in Central Brazil. According to MICHAEL *perseus* is never seen fluttering round flowers, nor do the butterflies seem to require food or drink. They prefer rather to soar through the spaces of the illimitable forests like *Morpho hecuba* or to float along in unrestricted flight over the tops of the trees in a deep valley. According to HAHNEL *perseus* is one of the highest-flying Morphids and on account of its brown under surface, which looks very dark against the light sky, it gives the impression, when flying at a height of 8—10 m., of a black-coloured species. HAHNEL says that the butterflies, which in spite of their lively, jerky movement through the air scarcely flap the wings appreciably, present a charming spectacle, particularly when half a dozen or more meet and engage in a sham fight. Almost the whole morning such scenes are repeated, for only towards midday, after they have been flying over their wide domain for 2 or 3 hours, do their pinions become weary and they settle again in the shade of the branches on some large leaf, the back turned towards the dark and the eyes towards the open. One rarely finds even a single insect flying in the afternoon and then probably only when unfavourable weather has hindered its doing so in the morning. The butterflies occasionally dart down on to yellow *Papilio* ♀♀ drinking on the ground, undoubtedly taking them for their own ♀♀, which are also frequently yellow, and Dr. HAHNEL took advantage of this by fastening pieces of yellow paper in his net, which actually deceived the *perseus* ♂♂. *perseus* Cr. describes a ♀ form with the basal part of both wings light blue. *crameri* Kirby is the ♂ belonging to it, with the blue ground-colour sometimes somewhat darkened. *metellus* Cr. on the other hand designates ♀♀ with an ochre-yellow median band, deceptively like the colouring of *M. hecuba* L., which flies at the same place. All three forms were obtained by CRAMER from Surinam. The larva is gregarious, only feeds for a short time and remains quiescent for the rest of the day. At Villa Bella on the Lower Amazon HAHNEL took examples with the upper surface inclining to bluish or brown, and on the Upper Amazon, judging from the STAUDINGER collection, ♂♂ occur most commonly with ochre-yellow bands tinged with green, at Iquitos ♂♂ with dark green, and ♀♀ with green-blue median area. There are also light blue (typical *perseus*) from Villa Bella in the Berlin Museum. The particular colour is, however, apparently nowhere restricted to particular localities, though MICHAEL once bred 12 specimens from the larva on the Rio Madeira, the whole of which were pale grey-green above. — *iphielus* Fldr. is a local form from Colombia with three distinct rows of yellow submarginal patches, whilst in the Amazon specimens the proximal row of dots is only indicated by three or four small scattered spots reaching as far as the middle of the wing. One ♂ in my collection, from Surinam, shows indeed only a couple of indistinct patches on the forewing. A ♀ which FASSL took on the upper Rio Negro at about 800 m. is remarkable for an extended light clay-yellow circumcellular area on the forewing, which reaches to the middle of the wing and is there lost, giving place to the pale green basal colouring. Hindwing as far as the cell light green, the discal area black-brown. Forewing with three rows of ochre-yellow patches, of which the proximal terminates near the posterior median, the middle is composed of large triangular spots, the rows, except the third (proximal), continued on the hindwing also. Cell of the forewing lightly dusted with greenish yellow along the posterior wall. Under surface a peculiar dull grey-yellow with yellowish median area, two large median ocelli on the forewing and somewhat ill-defined eye-spots on the hindwing. — *scipio* Fldr., with the incorrect locality "Brasilia meridionalis", which should perhaps read "Brasilia septentrionalis", is near the form *metellus* Cr., agreeing with it in the ochreous median area of the upper surface and the washed-out submarginal patches. Habitat without doubt Surinam. — *richardus* Fruhst. (69 a), from Minas Geraes, differs most considerably: ♂ of indefinite greenish, ♀ of yellowish bronze-green colour, both above and beneath deceptively like a small *M. hercules* Dalm. I have only three examples before me, which were bred from the larva and killed too soon. Forewing with 3 rows of submarginal yellow dots. The patch before the apex of the cell broadly dull gold-yellow, with scattered black scales. Discal area of the forewing yellowish. Distal margin rather narrow, brown-black, base of both wings light green. Under surface: forewing with four small, elongate ocelli of about uniform size, with narrow black irides. Proximally to the ocelli three *perseus*. *crameri*. *metellus*. *iphielus*. *scipio*. *richardus*.

very large, triangular grey-yellow median spots. Underside of the hindwing predominantly red-brown, with violet sheen. Median band grey-violet. Length of the forewing 58 mm.

M. hecuba is the largest known *Morpho* and one may also call it the most interesting, on account of its habits, its susceptibility to climatic influences and its tendency to develop polychromatic forms in both sexes. We are indebted to Dr. HAHNEL for the most detailed information of its habits of flight. HAHNEL calls it the king of the forest, and says that it traverses a wider area than any other butterfly, travelling perhaps 30 km. or more in two or three hours, continuous flight in quest of its mate, which it follows persistently for whole days, quite alone, over woods and water-courses. In the distance the flight of *Morpho hecuba* looks quiet and slow, but nevertheless it moves quickly enough to evade the collector and newly emerged insects in particular adopt an impetuous pace during their first hours of flight. Sometimes it happens that one of these apparently quietly hovering forms suddenly darts head downwards, and in this event it seems only to rise again with difficulty. They are driven to these violent erratic movements by dragon-flies, which lie in wait for them especially in marshy places and molest them from the tips of dry twigs, apparently more out of wantonness than from a desire to catch them. — *hecuba* L., the name-type, is distinguished by the contrast between the reddish brown forewing and the nearly black hindwing, which is only basally relieved with yellowish white. Forewing with yellowish, hindwing with white cilia. The under surface is remarkable for the silvery bands, which in nature are even clearer and more brilliant than in our figure (67 c). *hecuba* is one of the rarest butterflies and exclusively inhabits Surinam. What is labelled as *hecuba* in collections and sold as such by English dealers is a very similar local form but differing considerably, especially beneath, namely *obidonus* Fruhst., which only occurs on the north bank of the Lower Amazon. Of the numerous differences from *hecuba hecuba* L. the following may be mentioned: The distal black border of the forewing is broader, the proximal (inner) submarginal row of yellow spots consists of rounded instead of elongate patches. The basal area of both forewing and hindwing is not yellowish but chalk-white. Abdomen conformably with the basal colour pure white, not yellowish as in *hecuba*. The reddish submarginal spots of the hindwing absent; all the cilia of the hindwing pure white, while the upper cilia of *hecuba* are yellowish. The coloration of *obidonus* beneath is still further removed from the type, the ground-colour of the former being predominantly black, that of *hecuba* red-brown. *obidonus* is further characterized beneath by the absence of the ultracellular red-brown triangles between the median veins of the forewing. The ocelli of the hindwing are smaller, with reduced black iris, but still as complete as those of *hecuba*, and not posteriorly open as on our figure; the latter belongs to a hitherto unnamed race from the Middle Amazon, *heracles* subsp. nov. (67 c), in which the bordering of the ocelli is not rounded but horseshoe-shaped. *heracles*, however, agrees with *hecuba* in the double row of reddish submarginal patches on the upperside of the hindwing. Dr. HAHNEL only three or four times saw *obidonus* floating high up through the branches and over the tops of the trees, and did not catch any. Dr. STAUDINGER only received his first *hecuba* ♂, which probably belonged to the form *heracles*, through the artist OTTO MICHAEL from the Rio Negro and my experienced collector JULIUS MICHAELIS sent me about 30 or 40 examples, which he captured in July and August with the help of a stick 4 or 5 m. in length, on which an unusually large net was fastened. The ♀ of *hecuba* and *hecuba obidonus* is considerably larger and has somewhat rounder wings than the ♂, with more strongly marked yellow and reddish submarginal patches on both wings, somewhat paler black distal area on the upperside of both wings and lighter yellow-brown under surface. According to MICHAEL (Iris 1894, p. 197) *obidonus* has a short season of flight (June and July, once observed also in December). Fresh examples appear after every thunder-shower, but they already become less numerous on the second and third day, and the fourth one only sees a specimen here and there, and afterwards only worn examples are seen; ♀♀ nearly always sit still where ♂♂ will be passing, in any case they only occasionally fly a short distance in the morning. — *cisseis* Fldr. (= *egyptus* Deyr.), from the south side of the Lower Amazon, is distinguished in the ♂ by dark, in the ♀ by lighter blue and rather narrow bands on the forewing. On the hindwing the basal area is somewhat more extended than in *hecuba* and *obidonus heracles*, according to the sex lighter or darker blue, the blue with slight mother-of-pearl gloss and the submarginal area adorned with blue-white lunulate spots. At Itaituba on the Tapajos occur more commonly light blue, more rarely dark blue, or even dark violet ♀♀. In Ecuador and even in Bolivia the colour-scheme of *cisseis* is retained, yet in these countries the ♂♂, and occasionally also the ♀♀, sometimes assume a brownish colour. — *cisseides* Fruhst. The black which occupies the cell of the forewing extends somewhat beyond its apex, and in addition the blue spot before the apex of the cell is obsolescent, being only indicated by a little dusting. Of *cisseis* BATES writes that the butterflies present a magnificent spectacle as they sail along by twos or threes at a great height in the still air of a tropical morning. But according to Dr. HAHNEL *cisseis* only awakes when the high-flying *perseus* have already long been floating over the clearings, in the distance looking like black spots, when the sun has begun to beat down with full power on the leafy dome of the forest and *M. menelaus* has finished its flight. *cisseis* then moves slightly forward on the leaf on which it passed the night, and opening the wings it slips with a bound into the air, rising lightly to the tops of the trees, among which it takes its flight until the clearing of the road appears, which

it now follows, pursuing its way quietly and steadily, with the powerful wings scarcely quivering. It looks then like a narrow silver-blue stripe, in the vestal purity of its delicate white colour, which from the middle towards the costal margin changes into a light blue, posteriorly into black. The silver-white and brown of the under surface, however, present an excellent copy of large withered leaves covered with mildew at the veins, the similarity indeed being so great when it is resting in the shade of the branches that at Villa Bella Dr. HAHNEL once took a newly emerged example hanging on the pupa for such a withered leaf, until to his amazement he proved it to be a living form. According to MICHAEL (Iris 1894, p. 197) *cisseis* flies in every month, thus all the year round. — At Iquitos and Yurimaguas on the Upper Amazon *cisseis-obidonus* is replaced by **phanodemus** Hew., the forewing of which in rare cases still bears traces of the *hecuba* colouring and is in part somewhat brown-yellow with the marginal area only slightly blue. But examples with green-blue median band seem to be the commonest, this colour sometimes distally changing to olive-green or greenish brown and towards the base to light blue and white. In the ♀ the shades of colour are less ill-defined and there occur pure and uniform light, dark, steel- and green-blue tinged specimens, to which it may be left to others to give special names. The under surface agrees completely with our figure 67 c, although it is only exceptionally that the apical ocelli of the hindwing are accompanied posteriorly by a small accessory eye-spot, as in the example from which the figure was drawn. Dr. HAHNEL calls *phanodemus* a kingly form and compares it, in its quiet, peaceful and ghost-like flight, to the tutelary genius of the secret of the forest. HAHNEL was only able to obtain *phanodemus* by erecting a sort of scaffolding of bamboos, which he set up to a height of about 5 m. in the line of flight of the Morphids. In order also to secure the *phanodemus* which came up from behind a mirror was fixed on the parapet of his tower, which indeed was not often successful, but when it was, gave all the greater satisfaction. — **polyidos** subsp. nov. has a very broad black distal margin to the forewing, increasing in width from the costal margin to the anal angle, but the submarginal patches are only slightly indicated. The cell of the forewing contains only a few yellowish patches, the median band itself much narrowed. Hindwing basally pale yellow, distally lightly dusted with greenish. Under surface as in *hecuba obidonus*, except that the ocelli of the hindwing are somewhat smaller. From Itahapa Yarita in Venezuela, collected by VRAZ. Type in coll. STAUDINGER in the Berlin Museum.

Group *Morpho F.* (= *Leonte Hbn.*).

Species with metallic gloss on the upper surface; upper discocellular short, middle strongly convex proximally, lower concave distally, in the obtuse angle directed towards the anterior median. Cell of the forewing considerably widened towards the apex. Uncus and its lateral clasps relatively slender, valve distally spined.

M. laertes is the best known of a small group of species which differ from all their allies in the chalky, milky or silvery white ground-colour. *laertes* may be easily known by the connected chain of narrow, oblong, ocellated median spots on the underside of the hindwing, which have mostly only indistinct white pupils and washed-out yellowish bordering. The bluish white colouring is brought out very well in the figure. The upper surface resembles the figured underside, except that the forewing continues narrowly margined with black to about the middle of the median area. Hindwing with some elongate black anteterminal and more distinct submarginal patches. *laertes* only inhabits the provinces of Rio de Janeiro and Espiritu Santo and is very common both at Rio and Petropolis from January to March. Larva in nests on various forest-trees. It was first figured by BURMEISTER. Arrangement of the bristles according to Dr. WILHELM MÜLLER as in *Morpho hercules*. Two sharply differentiated local races: **laertes** Druce (= *epistrophis Hbn.* [pro parte] ♀, *ipha-lartes*, itus Fldr. ♀) (68 c), relatively small, apical patch on the forewing above narrow, as also the black curved spot at the apex of the cell; ♀ with sharply defined black-brown submarginal crescentic spots on the underside of the hindwing. All the markings yellow-brown, the intramedian ocelli of the forewing strongly marked, rounded, ♀ bright yellowish green, with mother-of-pearl gloss. — **eutropius** subsp. nov. Larger than *laertes*, ground-colour both above and beneath more blue-green. Forewing with the apical patch more than twice as broad, the black hook at the discocellular more strongly marked. Hindwing in both sexes further with a subterminal series of intraneural striae, united into a median and an anal undulate band; under surface with the markings blackish instead of yellow-brown. The intramedian eye-spots of the forewing and the chain of ocelli on the hindwing more indistinct, narrower, their component parts more isolated. Espiritu Santo, rare.

M. catenarius Perry is the oldest name for the species which is widely distributed in collections under the name of *epistrophis Hbn.*, and which differs from *laertes* in having the row of ocelli on the hindwing rounded instead of elongate, and also placed further apart. In addition most *catenarius* have the distal border of the forewing adorned with isolated black spots, not united into a band, and extending to the anal angle. The ♀♀ are not like the ♂♂, as in *laertes*, but decorated more plentifully with brown spots on the under surface and more distinct submarginal undulate bands on the upper surface. There are some ♀ examples, however, which in the markings approximate to those of the ♂. In Santa Catharina, particularly in the more elevated localities in the neighbourhood of Theresopolis and on the Alto-Uruguay, there occur commonly together with light ♀♀ also examples in which on the underside of the hindwing, especially about the cell and in the submarginal region, the ordinarily separated brown bands are broadly diffused, so as to form grotesque figures and extended undulate bands: = ♀-f. **marmorata** Fruhst. In such examples the black distal bordering

and submarginal spots on the upper surface are also considerably enlarged. Together with ♀♀ with the *nigrescens*. under surface marbled with brown occurs also, though extremely rarely, a black-spotted form (♀-f. **nigrescens form. nov.**), which is before me from the provinces of Paraná to Rio Grande do Sul. *catenarius* inhabits southern Brazil from São Paulo to Santa Catharina. Larva according to Dr. WILHELM MÜLLER on *Inga semialata*; head bright red with hairs of the same colour, body black, red and yellow, with a broad black lateral stripe and a yellow, black-edged mark in the median line. Larva in small companies (20—30). The caterpillars cover some leaves of the food-plant with webs, look like red lumps and are extremely conspicuous. The pupa on the whole resembles that of *Morpho achillides* Fldr. Like *Heliconius besckei catenarius* is one of the characteristic butterflies of Santa Catharina. In contrast to *Morpho anaxibia*, which only occurs in the timber-forests, it frequents rather the underwood, is fond of flying along broad bridle-paths, so far as they run near the rivers, and does not even avoid the neighbourhood of human habitations. Anyone who rides through the country in Santa Catharina from the middle of February to the beginning of April and travels any great distance, will probably observe on calm sunny days as many as 500—800 of these sluggish Morphids floating along as if lost in a dream. In the year 1889 I found it very easy to take 80—100 examples in one day near the orchards and among the tall bamboos on the banks of the Capivary River. Examples which have been on the wing longer also come to spread-out fruit-bait and it is only these which are occasionally observed settled on wet places in the primeval forests on the Alto Uruguay. — In northern Argentina and some districts of Rio *argentinus*. Grande do Sul we meet with a smaller geographical variety: **argentinus** Fruhst. (68 c). On the upper surface of the forewing the distal patches are no longer confluent with the submarginal band, but separate; the black spotting is also appreciably reduced on the upperside of the hindwing and the marbling of the under surface is likewise more delicate. The extreme of the reduction in the markings is found in ♂♂ from Rio Grande *efigurata*. de Sul, which have no black or brown spots at all on the under surface except the median ocelli (= **efigurata form. nov.**) According to MABILDE the larva is extremely gay in colouring and occurs from March to November on various forest trees. 20—30 always inhabit a nest of leaves and fine twigs, which one might take for a wonderful flower, or they sit in a lightly spun web. In November and December they change to the pupae, from which the imagines appear in 20—30 days. The butterflies are then very common from January to March, but become constantly more rare until April, which is already appreciably cool. According to BURMEISTER, who figured the larva of *M. catenarius* and *laertes* in 1878, *catenarius* (*argentinus*) is not rare in Uruguay, very common in the Argentine provinces of Corrientes and Entrerios, and was formerly observed also to the south of the Rio de la Plata and several times even taken at Buenos Ayres.

polyphemus. **M. polyphemus** Dbl. & Hew. (68 c) differs from its Brazilian relatives in the chalky white upper surface of both wings with delicate mother-of-pearl gloss, and also in the projecting apex of the forewing and the sharp teeth of the hindwing. On the upper surface the black distal bordering is absent and the discocellular shows only a quite narrow stripe. The ocelli of the forewing are larger than in *catenarius*, those of the hind- *luna*. wing more distinctly white-centred. As **luna** BUTLER has described an aberration from Mexico with the black spots on both wings unusually well developed. The flight of *polyphemus* is extremely rapid and irregular, and according to GODMAN and SALVIN the species ascends in Guatemala to 4000 ft. and is often met with near the ground in villages or also high up round the tops of trees in the timber-forest. Distributed from Mexico to Guatemala and Nicaragua, occasionally also occurring in Panama.

M. achilles designates a collective species which shows representatives in the whole tropical region of South America. Almost every restricted locality has its own *achilles* form and the races inhabit both the tropical Atlantic and Pacific coasts of the faunistic region. It is very interesting to observe its gradations in colouring, which illustrate very beautifully how the blue colour changes step by step. All the branches are alike characterized by the rounded forewing and a black distal border (variable according to the locality), accompanied by a more or less distinct darkening of the basal half of the wings. The copulatory organs are of the simplest structure. Uncus short, slightly chitinated, point feebly curved, at the ventral side without the swellings so characteristic of *M. achillaena* Hbn. Valve broad, ventrally somewhat flattened, with the usual dorsal pad, near the dorsal end with two distinct teeth, distally with long bristles. Penis characterized by a distinct horn-like tooth, in this contrasting with the *menelaus* group and the species of the subgenus *Iphimedeia*. Larva rather large, cylindrical, of yellowish grey ground-colour, with two irregular brown dorsal stripes, at the sides with confused striation and spotting, on some segments two tufts of red-brown hairs, with shorter hair-pencils at the side and on the fourth and fifth segment. Head densely clothed with stiff hairs and with two short horns at its posterior end. Pupa elongate oval with two short conical horns on the head and of transparent green colour. Larva mostly singly on a *Platymiscium* (SCHATZ). The butterflies keep to damp places in the woods, rise but little above the ground and sometimes drink at wet spots. In Santa Catharina I did not succeed in baiting this species with fruit as can be done, for instance, with *M. catenarius*. The delimitation of the separate races is still quite uncertain; in the first place there is a lack

of material with data and in addition anatomical investigations have yet to be made. The conditions are the most complicated in the Andean region and there seem to be two species there: *achilles* L., which has probably originated from the Amazons, and *achillaena* Hbn., apparently from Central Brazil. We begin here with the branch-races which have a strongly marked black basal area on the upperside of both wings, but indistinct reddish submarginal spots on the hindwing, in contradistinction to *achillaena* Hbn. and the subraces with the basal black indistinct or absent, but with distinct red submarginal spots on the upperside of the hindwing. — **achilles** L. (= *helenor* Cr. ♀), the name-type, came from Surinam and differs from *amazonicus*, *achilles*, which we figure (69 c), chiefly in the somewhat narrower blue median bands on both wings, which are still more reduced in the ♀, particularly on the hindwing. But the ♀ further bears on the forewing a median row of five white dots, beginning at the costal margin and ending in the middle of the median area. Under surface in both sexes with a whitish grey or blue submarginal band, sometimes also dusted with yellowish, on the forewing divided by a black line. Forewing with three, hindwing with four ocelli, which are proximally bordered with grey or greenish white. The larva was figured by Madame MERIAN as long ago as 1705. Ground-colour yellow-grey with probably somewhat darker (red) bands. According to Dr. W. MÜLLER, however, MERIAN's drawings are often fantastic and inaccurate, so that they can only in rare cases be taken seriously. Two well-marked aberrations have already been made known: **leonte** Hew., with hook-shaped *leonte*, prolongation of the proximally bent median band of the hindwing, and **lacrimans** Fruhst., named from CRAMER's figure, with diffused ocelli on the underside of the hindwing, an analagous case to which is found in *Stichophthalma tonkiniana* Fruhst., vol. IX, pl. 103 a. In the Amazon region we meet with *achilles* in different gradations, the blue median bands being still relatively narrow in examples from the lower course, but considerably widened in those from the upper river. — **amazonicus** Fruhst. (69 c). Larger, longitudinal bands *amazonicus*, more brilliant blue, somewhat broader than in *achilles*. White submarginal patches of the forewing more prominent, but the postdiscal white dots either entirely absent or obsolescent. Obidos, flies August to September. **thetis** Btlr. is an aberration from Pará which lacks the ocelli on the under surface of the forewing; *thetis*. **micans** Fruhst. one which is characterized by a bright bronze gloss on the ocelli. — **hector** Rüb. is a further *micans*, *hector*. local form of *achilles*, and according to the example determined for me by Herr RÖBER differs from the type-form in the larger white submarginal punctiform spots of the forewing. The blue median band is somewhat broader, more brilliantly glossy and with green reflection. The black basal area likewise with more intensive blue gloss. The white median bands on the under surface somewhat more prominent, but yet not so well developed as in *pindarus* Fruhst. from Matto Grosso. One ♀ from the upper Rio Negro, East Colombia, taken by FASSL, closely approaches *pindarus* ♀, only differing in the more sharply defined basal area of both wings, with less of the blue reflection, and in the shorter white transcellular band of the forewing, in which it also differs widely from *amazonicus* Fruhst. Of the local form of this species which flies on the upper Rio Negro at 1200 m. FASSL observed 2 ♀♀ ovipositing. The egg is hemispherical, at the base about 1½ mm. in diameter, greenish grey and dully transparent. It has a narrow, red-brown, horizontal ridge about the middle, but is otherwise unmarked and not glossy. — **pindarus** Fruhst. forms the long missing link which connects the Amazon races *pindarus*, with *trojana* Rüb. from Paraguay and *coelestis* Btlr. from Rio Grande do Sul. ♂ above nearest to *amazonicus*, but the black basal area of both wings is already less sharply defined and the ♀ in particular begins to show the dark steel-blue tinge which in *trojana* suffuses both sexes and is still further intensified in *coelestis*, whilst in all the branch-forms of *achilles* it only forms a narrow border to the light blue ornamental band. The costal transcellular white patches of the forewing, as in *amazonicus*, cover two intraneural areas, so that *pindarus* ♂ inclines towards *leontius* Fldr. from Colombia in markings as well as in size. ♀ with distinct red-brown submarginal stripes on the upperside of the hindwing. The under surface tends in the direction of the southern *achilles* races in having the submarginal and median bands almost pure white, only slightly tinged with yellowish. Matto Grosso. — **trojana** Rüb. (71 a) is considered one of the commonest and most characteristic butter- *trojana*, flies of Paraguay, and was first sent to Europe in large numbers about 10 years ago. The ♀, however, seems to be very rare; it strikingly resembles the ♂ in colouring, differing chiefly in the presence of five pure white median punctiform spots on the forewing and in the more intensive violet-blue tinge in the basal area of both wings. Beneath the ♀♀ agree with the ♂♂ in the extended grey-green intraneural areas, which are wanting in the other known *achilles* subspecies. In general *trojana* is more inclined to individual variation than its sister-races; but the maximum of the above-mentioned extension of the foreground of the ocelli on the under surface is reached in *mystica* Fruhst., a form in which on the under surface the whole of the forewing from *mystica*, the white proximal bordering of the ocelli, which is already somewhat tinged with grey-green, to the black-brown admarginal band is powdered with light grey-green. Hindwing: black-brown submarginal band twice as broad as in normal *trojana*. All the rest of the distal area to beyond the ocelli covered with dark moss-green scales. The scales are very dense and form a compact area, which is bent round the ocelli in a sack-shape, completely surrounding the ocelli themselves. — **mullea** Fruhst., on the contrary, designates a mel- *mullea*, notic extreme; ground-colour dark red-brown, above shot with dusky violet. Median band dark blue, very narrowly bordered with blue-violet. Submarginal dots dull rose-coloured, with grey-violet gloss (instead of white). Under surface: all the usually white markings dark grey-green, ocelli ringed with dark ochre-

yellow, very small, on the forewing only one instead of the usual three. According to BURMEISTER *trojana* occurs also in the province of Misiones in Argentina. — *coelestis* Btlr. (= *achillides* Fldr.), a well specialized branch-race of southern Brazil, approximates closely to *trojana* Rüb., from which it differs in its smaller size and in having the white submarginal patches of the forewing almost twice as broad, and further in the narrower and lighter, but more glossy blue median band on the upper surface. The red submarginal spots of the hindwing are also more strongly marked and the basal tinge on the upperside of both wings is predominantly steel-blue, with decidedly brighter reflection than in *trojana*. The under surface approaches that of *achillaena* Hbn. in the prominent, very broad white submarginal and median bands. The bronze-green bordering of the ocelli, however, again as in *trojana*. Very local and at the same time rare, not enumerated in any of the local lists of the fauna of Rio Grande do Sul; two ♂♂ only in coll. FRUHSTORFER.

M. achillaena inhabits a smaller area than *achilles*; the species is accordingly also less rich in forms, the local variations confined to narrower limits; the extent of the the colour and markings is shown in our figures pl. 70 a and b. The characters which distinguish it from *achilles* are the absence of a sharply defined black or otherwise considerably darkened basal region on both wings and the more extended transcellular area on the forewing. Structure of the valve analogous to *M. achilles* L. Penis likewise with horny process. Uncus characterized by a very broad ventral swelling, which in *achilles* is absent or scarcely indicated, running out into two pointed processes which are also present in *achilles*. It is worthy of note that the ♀♀ of all the *achillaena* races are commoner than those of the *achilles* forms, with which they otherwise agree bionomically, both sexes remaining near the ground in the woods and never taking lofty, circling flights like the species of the *menelaus*, *cypris* and *rhetenor* groups, or traversing long distances like the members of the *catenarius* and *polyphemus* series. — *anakeon* Fruhst. has the most northerly distribution of the known races of the west coast. Upper surface near that of *bahiana* (70 b), but the black distal border costally somewhat broader, anally narrower, the white costal spot of the forewing reduced, not encroaching into the transcellular area. Under surface very dark. The median band of the forewing relatively narrow, ocelli ringed with dark yellow like those of *trojana*. Pernambuco, type in coll. STAUDINGER in the Berlin Museum. — *bahiana* Fruhst. (70 b) does not differ materially in the ♂ from the ♀, which we figure, even the white median spots are present, although much reduced. In the ♂♂ also the white spot of the forewing does not extend beyond the subcostal veins and the small size of this patch distinguishes *bahiana* from all the other subspecies of *achillaena*. *bahiana* is also paler beneath than *anakeon* and the more southerly representatives. The rows of ocelli proximally bounded by a nearly always continuous elbowed grey-white median band. Not rare in Bahia and found in company with *Agrias ferdinandi* Fruhst. in the dry, open forests of that province. — *achillaena* Hbn. (= *subfasciata* Rüb. ex Peru, loc. err.) as one of the most easily captured butterflies very commonly finds its way into European collections. *achillaena* flies at Rio de Janeiro and in Espiritu Santo all the year round and prefers shady lowlands. The species does not ascend into the Organ Mountains and is already absent at Petropolis. Larva according to VON BÖNNINGHAUSEN on a prickly climbing-plant; according to BURMEISTER yellow-grey with somewhat darker lateral stripes. ♂ near the figured *achillides* (70 a), but with light blue basal area, the white costal spot of the forewing not materially broader in the ♀. ♀ as a rule much larger than the ♂, the reddish yellow submarginal lunules of the hindwing standing out more distinctly than in *bahiana*. The rows of eye-spots on the under surface surrounded by extended whitish bands. The red anteterminal spots essentially more prominent than in *bahiana*. In the province of Minas Geraes we meet with a transition from the Rio type to the northern race; this has been described as *pellana* Fruhst. ♂. The white costal spot of the forewing only extends to the subcostal and consists in the ♂ of only 2 parts, instead of 3 as in *achillaena*. Black distal border of the forewing narrower, more sharply defined. In the ♀ the white costal spot more extended than in *achillaena*, there are even traces of white patches between the medians. General colouring lighter blue. Under surface: ocelli smaller than in the other *achillaena*, submarginal and ultracellular transverse bands of both wings considerably broader. — *paulista* Fruhst. Distal border of both wings more deeply incised. The white costal spot consists of 4 narrow divisions. Basal area of both wings darker than in *achillaena*, the blue reflection deeper, but even more glossy, with the first traces of the violet tone of *achillides*. The white transverse band on the underside of the forewing strikingly pure white and very extended. Under surface very dark. São Paulo. Concerning the habits Dr. SEITZ writes that the weakness of the body leads to a slow, measured flapping of the wings, producing a gentle, oscillating motion which shows the magnificent gloss of the azure-blue wings to great advantage. — *violaceus* subsp. nov. (70 a) (as *achillides*). Both sexes brilliant dark blue-violet above. The costal white spot is continued in the ♀ between the median veins. Submarginal patches of the forewing much enlarged. Under surface considerably darker than in *achillaena* and as in *paulista* characterized by reddish white anteterminal bands on the hindwing. Bordering of the ocelli on the forewing a peculiar grey-lilac, that of the hindwing pale grey, very much narrower than in the more northerly forms of *achillaena*. *violaceus* scarcely ascends to the higher foothills of the mountains; it is a true lowland species, flies on shady forest-paths and does not come to banana-bait. In the neighbourhood of Blumenau *violaceus* does not seem to be rare; but it has never been recorded as occurring in such abundance as *achilles trojana*. According to Dr. W. MÜLLER the eggs are hemispherical in shape

and break open a round lid on the convex surface when the larvae hatch. This does not take place for several weeks; the larva lives either singly or in small companies of 3—5. Larva on *Platymiscium*, a leguminous plant. Head proportionately very large, high and broad, narrowed above, at the same time rather short with two strong conical processes, horizontally directed posteriorly, placed on a common base. The surface of the head is covered with small pitting, and bears long, black, finely feathered, branched bristles, which give it the appearance of a poodle's head, as with certain *Brassolids*. Larva when first hatched partially transparent, after two days a beautiful chrome-yellow, with broad yellow dorsal and some lateral spots. In the later stages the body becomes extremely variegated, brown, red-yellow, white and black with dark stripes parallel to the margins of the light parts. Pupa rounded, with two short, conical horns, elongate oval, transparent green. This beautiful form has since 1888 passed as *achillides* Fldr., in consequence of STAUDINGER's statements in the „Exotischen Tagfalter“. By comparison with the type, however, I have been able to prove that FELDER's name *achillides* refers to the *M. achilles* race from Rio Grande do Sul, which BUTLER had named *M. coelestis* a year before. The *achillides* of our plate was consequently without a name, and I propose that of *violaceus*, as it is the only *Morpho* yet known with the upper surface blue-violet.

M. patroclus Fldr. is a handsome, interesting species of the *achilles* group from eastern Colombia, *patroclus*, near to *papirius* Hpffr. from Peru, and apparently occurring only in the lowlands. It was met with by FASSL at Villaviciencia at an elevation of 400 m., whilst on the upper Rio Negro at about 800 m. it is already replaced by the very different *M. achilles hector* Rüb. In contrast to the round-winged *achilles* type *patroclus* has the wings elongated, the hindwing in particular posteriorly narrowed and long-produced. Base of the upper surface of both wings broadly deep black, with inappreciable dark violet-blue reflection. The ornamental band strikingly broad, but nevertheless leaving a more extended black apical patch than in *papirius*. Anal angle of the hindwing as in *agamedes* and *phokylides* with blue instead of red inner-marginal spot. Under surface differing from all the *achilles* races and also from *papirius* in the very beautiful ochre-yellow bordering of the ocelli, the very broad greenish white median macular band of the forewing and the extended light green foreground of the ocelli on the hindwing. Under surface of the wings in both sexes a peculiar rich brownish ochre or earth-colour with dull green gloss, distinctly perceptible even in FELDER's type, which is over 50 years old and which I have before me through the kindness of the directors of the Tring Museum, and showing up so distinctly in FASSL's example that I doubted whether it was natural. — **theodorus** Fruhst., from the upper Uaupes, *theodorus*, on the other hand is again normally coloured with the band on the upper surface less brightly glossy. Both wings beneath without brownish green tinge, more approaching the *achilles* colouring with reduced greenish white proximal bordering to the chain of ocelli. — **papirius** Hpffr. designates a well differentiated local form, almost *papirius*, a species, from Chanchamayo in Peru, which even surpasses *theodorus* in the extent of the light blue ornamental band on the upper surface, so that the black distal border, particularly on the forewing, is reduced to a breadth of a few millimeters, but contains a row of strongly marked, pure white submarginal dots which shine out as if it were set with pearls. — The culmination in size and in brilliance of colour, however, is not found until we reach the sources of the Amazon in Peru. Here the geographical variety, **agamedes** subsp. *agamedes*, nov., attains in the forewing a length of 75 mm. against 55 mm. in *achilles achilles* L. from Surinam, and the light blue ornamental band on the upper surface is 30 mm. in breadth, whilst the corresponding band in *achilles* does not exceed 12—13 mm. Hence the distal black border of both wings is naturally much reduced, although the basal deep black area, distally bordered with steel-blue, which is so characteristic of *achilles*, undergoes no reduction. The brilliant median band is only somewhat widened in the cell of the forewing and encroaches even more than in *papirius* Hpffr. into the cell of the hindwing. Beneath also an approach to *M. papirius* Hpffr. results from the essentially larger ocelli, which have first a light ochre-yellow, then a bronzy light green bordering, which in beauty and extent is hardly excelled by that of *patroclus* Fldr. — **phokylides** *phokylides*, Fruhst., from Yungas in Bolivia, recently taken in large numbers, forms the natural continuation of *agamedes*, but shows a decrease in wing-expanse. The median band becomes darker and is narrowed both towards the costal margin of the forewing and the inner angle of the hindwing. The ocelli of the under surface are again dull yellow and washed-out whitish, margined with blue, so causing an approach to *theodorus*. Valve distally sharply dentate, uncus without the ventral lamellae which characterize *achillaena* and *achillaena subfasciata* Rüb.

M. peleides occurs from Mexico southwards to Ecuador and eastwards in Venezuela. Although it only inhabits a comparatively small area its local variability is unexampled among the *Morphids*, and no other species shows even approximately such sudden mutations within circumscribed localities (not even excepting island races). The races from Mexico, Honduras, Nicaragua and Colombia approximate pretty closely, but between them in Guatemala and Costa Rica we find subspecies in which the usual garb is completely changed (in Guatemala on the underside also) and whose identity is only proved by the wing-contour and the position of the ocelli. Of great interest also is the occurrence of two geographical races in Guatemala, of which one only inhabits the Atlantic slopes of the central volcanos, the other, which is considerably rarer, exclusively

the Pacific coast, so that GODMAN and SALVIN in 1881 still treated them as separate species. In order to explain the present heterogeneous mixture of races these authors advanced the theory that the Isthmus of Panama was originally inhabited by two species of *Morpho*, of which certain forms of *hyacinthus* Btlr. inhabited the islands which occupied the position of the present Panama and Costa Rica, the older species, which they considered to be *peleides* Koll., being only indigenous to Colombia, and further that no *Morpho* at that time occurred in Guatemala and Mexico. But after geological revolutions had produced the present union of the land, *peleides* was enabled to push its way along the isthmus, passing *hyacinthus* in Costa Rica, and occupying the rest of Central America, Yucatan and Southern Mexico. Those forms which were developed on the Pacific coast of Guatemala were most modified and became *octavia*, while the rest only differed slightly from their Colombian ancestors. According to our present knowledge such a complicated explanation is no longer needed; the Morphids in question are simply local and individual variations, such as we meet with, but modified to an even greater degree, among the members of other families (Papilionids, Euthaliids), particularly in Asia. *peleides* is undoubtedly a near relation of *achilles* and probably its northern form, as GODMAN and SALVIN assumed, and in Colombia *peleides* starts where *achilles* disappears, as it only inhabits the western part of the country from Bogotá to the Pacific coast, whilst *achilles* stops before the East Cordilleras. *peleides* agrees with *achilles* in habits, as it also frequents the underwood, unlike its sun-loving congeners *M. cypris* and *theseus*. The individual forms approach *achilles* above in bearing a broad black-brown basal area (*limpida*, 67 a) or approximate more to *achillaena* in the absence of basal darkening (*octavia*, 69 a). Yet between the two main forms all imaginable transitions occur; thus the basal area may also have a light blue or a dark steel-blue reflection as in *peleus* Rüb. Extremely variable also are the submarginal white spots and costal patches of the forewing, of which two or three more or less prominent rows may be present, accompanied by transcellular median white dots, but likewise quite irregular. Only in the ♀♀ is this median ornamentation always present and in them the brown distal border on the forewing is sometimes widened nearly to the cell. The ♀♀ as a rule have the upper surface of the hindwing light glossy blue throughout, but there occur also ♀-forms with almost entirely brown upper surface, on which only the rudiments of a median band, in this case dark blue, are present. The colouring of the under surface also varies, apparently quite without system, the races from Colombia and Mexico being the deepest black-brown beneath, while between them in Central America occur the examples which are strongly banded with whitish in the distal part, especially on the forewing. One character, however, remains constant through all the forms; this is the nose-shaped distal projection of the whitish grey median line on the underside of the hindwing, which forms an acute angle between the anterior and the three posterior ocelli and is never interrupted at this place, whereas in *achillaena* races the median band may be broken up or continuous within the limits of the same geographical race. Clasp-
montezuma. ing organs very close to those of *M. achilles*; valve distally more distinctly dentate, but appreciably more narrowly, the dorsal pad, however, already reduced. Ventral process of the uncus as weak as in *achilles*. Penis
zela. armed with longer and more pointed teeth than in *achilles* and *achillaena*. — **montezuma** Guén. is the most northerly and the smallest race and at the same time the most easily distinguished on account of the rounded forewing, which is surrounded by a relatively broad deep black distal border containing only one row of pure white punctiform spots, of the size of a pin's head. The distal border sends out fine black points along the veins. Under surface predominantly red-brown with strikingly small ocelli and reddish yellow anteterminal bands on both wings and a reddish yellow shade beyond the cell on the forewing; ♀♀ are apparently rare; they are wanting in my collection. GODMAN and SALVIN give Yucatan as locality. — Through the firm of
octavia. BANG-HAAS I recently received an interesting local or seasonal, perhaps mountain form, **zela** *subsp. nov.*, of distinct *montezuma* character in its rounded forewing and with still more pronounced, dull vinous bands on the under surface, and noteworthy above for having the black distal border of the forewing only a few mm. in breadth, very little ornamented with white, and proximally sending out no black teeth along the veins.
zonaras. **octavia**. A more exact locality than Mexico could not be ascertained. — **octavia** Bates (69 a) must be considered one of the most remarkable and most easily recognized Morphids on account of its delicate light blue but uncommonly glossy reflection and the extended whitish brown bordering of the wings. The ♀ is even paler than the ♂ and in both sexes the eye-spots of the under surface show through distinctly. Under surface basally light cocoa-brown, the distal area light havanna-brown with slight violet sheen, whitish bands and flesh-coloured anteterminal spots. Ocelli, particularly those of the hindwing, with very broad light ochre-yellow bordering. Habitat exclusively the forests of the Pacific coast of Guatemala.
 — As **zonaras** *subsp. nov.* we here introduce a further local form allied to the *octavia* type, the type of which is in the British Museum, with the very doubtful locality "Colombia". The ♂ differs from *octavia* in the still purer white anteterminal shade and the lighter blue basal part of both wings. Beneath the brown marginal area extends further proximad to the wall of the cell and the submarginal

bracket-shaped markings are not only considerably enlarged but also proximally bordered by a conspicuous brown band. — *hyacinthus* Btlr. (67 a) inhabits Honduras, where, however, it is by no means common. Easy to separate from *montezuma* by its larger size and more pointed forewing, *hyacinthus* is further noteworthy for the lighter and more glossy blue on both wings. The black distal border as a rule smooth at its proximal edge; yet examples also occur with the distal border even more strongly dentate proximally than in *montezuma*. Claspings-organs described in the diagnosis of the species. *crispitaenia* Fruhst. is a ♀-form of *hyacinthus* *crispitaenia*, margined with brown-black almost to the middle of the wings, with large white median patches, running out into a fine point distally. — *pudicis* Fruhst. is the local race from Nicaragua; much smaller than examples from Mexico and Honduras, the distal border of the forewing very narrow. The under surface of the wings lighter, as in *limpida* Btlr.; but the markings are somewhat more shadowy, ocelli larger than in *crispitaenia*. transverse bands in the cell of the hindwing somewhat narrower than in *limpida*. — Under *limpida* Btlr., as the oldest name, we include here the polymorphic series of individuals which inhabit Costa Rica, the Volcan de Chiriqui and the state of Panama. We figure at 67 a the prevailing form from Costa Rica, which is labelled *hydorina* Btlr. in the British Museum and is characterized by having the basal half of both wings mostly dark brown. *marinita* Btlr. designates examples with the blue median band of the hindwing reduced, or occasionally quite obsolete; the name *narcissus* Stgr. describes ♂♂ from Chiriqui with brilliant metallic blue gloss on the proximal half of both wings, and *limpida* itself is based on an aberrant intermediate form. According to GODMAN and SALVIN, however, one might similarly erect a further series of names, as no two specimens are alike. At any rate, *narcissus* with its predominantly dark or violet-blue base leads over to *peleides* Koll., the commonest *Morpho* of Colombia, which is wanting in no consignment from there. The white dotting of the submarginal area of *peleides* is simpler than in the northern races, the distal border always narrow, deep black, rarely dentate proximally and even then only indistinctly. The light blue of the upper surface uniform, only with inappreciably darker, slightly violet reflections over the basal part. ♀ with two rows of white submarginal dots on the forewing, of which the proximal also are rounded, not elongate as in *limpida*. Under surface of the ♂♂, as already mentioned above, deepest in colour, almost black-brown with grey-white anteterminal lines. According to FASSL *peleides* only occurs in Western Colombia, from Bogotá to the Pacific coast, whilst *achilles* is only found to the east, and the two species seem to be separated from one another. — Egg of the size of that of *achilles*, hemispherical, with a slight basal depression, greenish yellow, dully transparent, surface rough, not glossy. — *cortone* subsp. nov. differs from normal *peleides* in its smaller size and in having the blue gloss much lighter, particularly distally, and the black distal border of both wings more extended. The under surface is characterized by its almost entirely white subterminal lines, the light bronze-green gloss of the proximal bordering of the ocelli and the light yellow rings which surround them. Moreover the vermilion lunulate spots of the hindwing stand out more distinctly and might even be described as being as broad again as in *peleides*. Colombia. — *maculata* Rcb. seems to be the most southern local form yet discovered. It may be easily known by the whitish blue upper surface, relatively narrow border and especially the lighter underside, with broader grey-white band bordering the ocelli, the paler submarginal lunules and the widened anteterminal patches. Ecuador. — *corydon* Guén. is the most eastern offshoot of the collective species and was described from Venezuela as long ago as 1859, but is still always rare in collections. ♂ smaller, hindwing more broadly margined with black. Under surface with the bands even paler than in *maculata*, ocelli quite small, similar to those of *pudicis* Fruhst. Transverse bands in the cell of the forewing still broader than in *maculata*. The ♀ is not yet known. According to Dr. HAINEL *corydon* is fond of feeding on fallen fruit and in particular cannot resist sugar-cane which has been split open and spread out on forest-paths, though it is often only worn specimens that visit the bait. — *peleus* Rsb. (69 b) is an interesting, well differentiated form either belonging to the rainy season or to the mountains; it somewhat corresponds to *narcissus* Stgr. from Panama (Chiriqui), with the basal part of both wings darker blue, shot with intensive, nearly violet reflections. The black marginal area of both wings narrower, not widened apically, thus running parallel on the forewing with the distal margin. Under surface about as in *insularis* Fruhst. from Trinidad, without the whitish shade proximally to the row of ocelli. The band accompanying the ocelli not white, but greenish as in *corydon*, not interrupted in the median part, but joined to a projecting nose-shaped mark. Venezuela, co-type in coll. FRUHSTORFER. — *insularis* subsp. nov. A well defined island race; ♂ above showing more resemblance to *peleides* *cortone* Fruhst. than to the neighbouring Venezuelan race, the black distal border of the wings, particularly of the hindwing, considerably narrower, without submarginal bordering of small red spots. ♀ above very similar to the ♂ of *corydon*, but with broader black border to both wings. The transcellular region about as in *peleides* ♀, but deeper violet-blue. Between the costal and the lower median are placed five white interneural dots; which are larger than in *peleides* ♀ and more suggest those of *hyacinthus* Btlr. The distinct proximal (second) submarginal row of dots of *peleides* is wanting. Hindwing with quite small reddish patches. The blue area deeper blue than in *peleides*, with brilliant violet reflection; under surface considerably darker than in *corydon*, resembling that of *cortone*. The foreground of the ocelli densely dusted with greenish, the whitish and light brown parts of the median area of both wings, which characterize *corydon*, are absent. According to KAYE common on Trinidad; both sexes collected by A. H. FASSL at the Maracas Fall. From the Sierra Nevada GODMAN and SALVIN record a *peleides* form, which perhaps connects *corydon* Guén. with *peleides* Koll.

leontius. **M. leontius** differs from *peleides* in the broader black distal border, which, particularly on the forewing, is widened towards the cell and even exceeds in breadth that of *peleides cortone Fruhst.* Basal part of both wings with some amount of blue-violet gloss, but not so much darkened as in *peleus*. Under surface as in *peleus*, but with open band in the median part of the hindwing. Two local forms: **leontius Fldr.**, with the black distal border of the forewing deeply incised proximally. The distal area of the hindwing more extended than in *popilius*. Under surface somewhat lighter than in the Bolivian branch-race; the longitudinal bands purer white. **FELDER's** type is an aberrant example with five instead of three ocelli on the forewing beneath and bears the incorrect locality-label: "Bogotá"; *leontius* probably inhabits the Cauca Valley. — **popilius Hpffr.**, described by its author from Bolivia and Venezuela, is likewise still very rare; my collection contains only one ♂, and the ♀ probably still awaits discovery. *popilius* is characterized by the extremely delicate light blue, but nevertheless brightly glossy upper surface of both wings, which somewhat recalls that of *peleides*, but shades proximally into a slightly steel-blue, distally into a nearly whitish area, while *peleides* has a deeper and more uniform blue gloss. A further characteristic is the costally widened, but posteriorly narrowed black distal border of the forewing, which is ornamented with five white dots, decreasing in size towards the anal angle. Distal bordering of the hindwing likewise with a slight tendency to become narrower posteriorly, with quite faint traces of reddish patches. Under surface similar to that of our figure, which, however, belongs to another species (*vitrea Btlr.*), which I at first took for *popilius*; ground-colour more red-brown; submarginal and median bands yellowish white, broader, ocelli smaller, ringed with lighter yellow. If *popilius* really occurs in Venezuela, as **HOPFFER** assumed, the Venezuelan race must differ quite considerably from the name-type from Bolivia, for that a *Morpho* should not have been modified in a locality so remote is, judging from experience of all the allied species, quite out of the question.

telamon. **M. vitrea** splits up into two local races: **telamon Rüb.** comes from the Cauca Valley in Colombia and approaches *peleides* Koll. According to its author *telamon* differs essentially from *peleides* in its shape: the forewing is broader (much the shape of the diagonal half of a square) and the hindwing is much rounder. The upper surface is not such a whitish blue as in *peleides* and in certain lights has a strongly violet tinge. The dark distal border is of quite uniform breadth on both wings and is not black, but only grey-black and very narrow (scarcely 4 mm. in breadth) with very indistinct small light submarginal spots; the basal part of the upperside is not darkened, the costal stripe of the forewing is likewise only grey-black and little conspicuous, and the white costal spot near the discocellular is very small and obsolescent. At the inner angle of the hindwing there is only a small, very obscure red-brown stripe. The under surface is much lighter than in *peleides* (reddish brown), the forewing has besides the usual three eye-spots also a fourth, small, imperfectly developed ocellus between the upper radial and the last subcostal vein, the light bordering of the eye-spots is much broader and dirty reddish white, the oblique whitish postmedian band is more extended and at the distal angle joins the light submarginal markings. The yellowish submarginal stripe of the forewing broader, the submarginal markings of the hindwing reduced and the small dirty reddish stripes in them very little developed. The subapical eye-spot of the hindwing smaller than in *peleides*. Expanse: 118 mm. — **vitrea Btlr.** (69 b, as *popilius*) has, like *telamon*, a very narrow black distal border, deeply dentate proximally, a narrow white costal spot running out into a fine line towards the base, and three subapical dots on the forewing, the upper surface of both wings greenish blue with golden lateral reflections, such as are found in no other species of *Morpho*. Under surface brown with peculiar dull olive-green gloss. Median band greenish with bronzy gloss. Ocelli with greenish yellow bordering and the pupil slightly dotted with red and violet. Bolivia, Province of Yungas. 2 ♂♂ in coll. **FRUHSTORFER**. Length of the forewing 60—63 mm. The ♀ has the black distal border of the forewing much widened and extending in the shape of long teeth along the veins. Somewhat beyond the cell are placed four indistinct white intraneural dots, which terminate before the posterior median. Hindwing about as in *peleides* Koll. The basal area of both wings moderately broadly blackish with intensive ultramarine reflection. Under surface: ocelli first broadly ringed with greenish yellow, then with blackish, finally with light green, the greenish bordering more extended than in the ♂, shading somewhat into white towards the costal. Submarginal band only slightly whitish, dusted with green. Hindwing with small, inconspicuous reddish terminal spots. Coroico, Bolivia, 1500 m. **BUTLER's** diagnosis is somewhat meagre and leaves it doubtful whether it refers to the species dealt with here. According to this description the ♂ has the upper surface variable in colour, blue-green. Base, costal and inner margins of the hindwing brown. Distal margin broadly brown. Forewing with a white spot at the end of the cell, bounded by the first subcostal vein. A submarginal row of six white spots at the distal margin. Under surface as in *achilles*, except that the bands are more greenish and somewhat more interrupted. *vitrea* differs from *achillaena* in having the brown distal border of the upper surface only about half the usual breadth and the blue colouring more greenish, while the under surface more resembles *M. achilles* than *achillaena*.

M. granadensis, distributed from Central America to Ecuador, is a perfectly valid and well defined species, notwithstanding that **FELDER** suspected he might be dealing with a local form of *deidamia* and that **STAUDINGER** also doubted its specific right. *granadensis* cannot be a local form of *deidamia* **Hbn.** (67 a) since

the latter is represented in Colombia by the recently discovered *hermione* Rôb. Moreover a glance at the huge ocelli of the under surface and the reduction of the white markings shows the fundamental difference. — *polybaptus* Btlr. (= *candelarius* Stgr.) differs only inconsiderably from the name-type, having the black distal area of the upper surface somewhat widened and the white subapical spot of the forewing more strongly expressed. On the under surface the whitish yellow anteterminal bands are more prominent and the bordering to the ocelli is of a finer bronzy greenish colour. Median band of the hindwing strongly elbowed, distally with a nose-shaped projection in the middle of the wing. Originally described from Costa Rica, *polybaptus* also occurs, according to GODMAN and SALVIN, in Nicaragua and the state of Panama. — *granadensis* Fldr. was first sent to FELDER by the dealer DEYROLLE and pretty certainly came from the Cauca Valley, whence DEYROLLE had received a large consignment. Upper surface similar to *peleides*, but the black distal border considerably more extended, the wings more rounded, the *Morpho* reflection deeper blue, and especially characterized by its large, light cinnamon-brown ringed ocelli, those on the forewing of uniform size, whilst on the hindwing the apical eye-spots far surpass the three closely approximated anal ocelli. — *lycanor* Fruhst. (71 b) comes from Ecuador; the ♀ larger, distal border broader, the blue reflection deeper than in *granadensis* Fldr. from Colombia. Basal part of both wings with dark violet reflection. Under surface: the peculiar pale ochre-yellow bands of the forewing more extended, all the ocelli larger. The whitish stripes and bands, which recall *deidamia*, darker.

M. rugitaeniatus Fruhst. (70 b) unites in itself the characteristics of the *peleides*, *achilles* and *granadensis* groups. ♂: upper surface with the exception of the very deeply notched black distal border deep glossy blue. Upper part of the cell and the basal parts of both wings with dark violet reflection, likewise the broad blue rays which penetrate deeply into the deep black distal border. At the costal margin shortly beyond the cell a white spot, in addition a diffuse white subapical patch and 3—5 white submarginal dots on the forewing. Forewing yellowish, the small admarginal spots of the hindwing pure white and placed in pairs. Under surface: forewing of *peleides*-, hindwing of *achillaena*-character. Ocelli very large, with broad yellow irides and very large diffuse white pupils, bordering on the forewing blue-white, composed of delicate lines, on the hindwing greenish white, consisting of stronger lines. Forewing with an ochre-yellow, strongly marked admarginal band and two milk-white submarginal bands separated by a brown undulate line. Hindwing with an interrupted dark ochreous admarginal and a violet-white submarginal band, which are separated by dark brick-red, proximally pointed patches. Transverse bands in the cell of the forewing narrow, like the median stripes of the hindwing, greenish. The angled median band proximally to the ocelli continuous (as in *bahiana* Fruhst.), the 3 anal ocelli surrounded by a common greenish white area. Type from Paramba, Ecuador.

M. deidamia, the most copiously adorned with white of any of the *achilles* group, according to Dr. HAHNEL has a straight and rapid flight, not dipping up and down with such energy as the species of the *menelaus* group, but by preference keeping to open paths and clearings in the woods, and so obtaining free scope for its powerful flight, not flitting restlessly through the thickets of underwood and disappearing in gaps among the shrubs, as is said to be the habit of the species of the *achilles* group. With the exception of Bolivia *deidamia* only inhabits purely tropical regions and it splits up into a series of branch-races, some of which are sharply differentiated. The ♀♀ are not much rarer than the ♂♂, more resemble the ♀♀ of *achilles* than their own ♂♂ and are considerably larger. The ♂♂ show parallel variation to those of the *peleides* series, in the Amazon region they already range from specimens with little to those with strongly darkened basal part on the upper surface, which in the races of the southern Andes again disappears. In addition the extent of the black distal border, which is only dotted with white in its anterior part, varies geographically. — *deidamia* Hbn. (67 a), the name-type, named by its author from CRAMER's figures, inhabits Surinam and will probably also be found in French and British Guiana. Basal part of the upper surface in the ♂♂ brilliant steel-blue, the distal area of both wings delicate light blue (as in *popilius* Hpffr.). But in the ♀ the proximal region is darkened, being broadly black, though with intensive metallic reflection. Forewing with three white median dots, the light blue restricted to a relatively narrow median area. — *erica* Fruhst., from the Lower Amazon, differs from typical specimens in the constantly narrower, silver-white reticulation of the under surface. Flies at Obidos in August—September. — *neoptolemus* Wood. Basal part of both wings black-brown, only distally with slight dark blue sheen. ♀: the blue median band of both wings broader, darker but more glossy blue than in *deidamia* from Surinam and Obidos. Under surface with somewhat less extended red submarginal patches, but with more copious white reticulation. From the upper Rio Negro (Uaupes) in coll. FRUHSTORFER, recorded by Dr. HAHNEL from the Upper Amazon. — *hermione* Rôb. Differs from the typical *deidamia* of the Lower Amazon in having the black distal border much narrower; at the posterior angle of the forewing it is only about 2 mm. in breadth, but gradually widens and at the apex attains a breadth of about 15 mm.; the distal margin of the hindwing is about 3 mm. in breadth in the middle. The ♂ before me has an expanse of 115 mm. The greenish blue median band is about 25 mm. in breadth, with its proximal boundary sharp and almost straight, the distal indistinct. The dark brown basal part is about 18 mm. in breadth and has only in the distal third a dark blue gloss. In the apex of the forewing are placed 2 small, distinct white spots and 1 very indistinct light one. At the costal margin of the forewing there is a small white spot. At the inner angle of the hind-

wing there are only traces of small reddish spots. The under surface is dark mahogany-brown, on the hindwing somewhat lighter about the veins, the light markings are in shape almost like those of *deidamia*, but are much less developed (narrower) and of the submarginal brick-red spots of the hindwing only slight traces are present. Type probably from the Cauca Valley. FASSL discovered the ♀ at Villavicencio, East Colombia; it does not differ materially from the ♀ of the preceeding subspecies, but the blue band extends towards the apex beyond the cell of the forewing and in the anal angle of the hindwing. On the under surface the red submarginal patches are nearly suppressed and the silver-white bands are somewhat more delicate than in the

briseis. *neoptolemus* ♀. — *briseis* Fldr. (= *pyrrhus* Stgr.) describes a further, much darkened local race from the Chanchamayo and Hillapani in Peru, which likewise lacks the blue gloss on the black basal area of both wings, but differs from the ♀♀ of *neoptolemus* in having a more extended blue median area. Very rare, only known in the ♂.

electra. — *electra* Rób. is a highly specialized local form from Bolivia with the hindwing decidedly more rounded and the forewing shorter. The upper surface is brilliant light blue, in certain lights with greenish gloss. The black distal margin very narrow, at the hinder angle of the forewing only about 2 mm. and at the apex about 10 mm., in the middle of the hindwing about 3 mm. in breadth. In the apex of the forewing are placed 2 white spots; the costal margin of the forewing is brown-black from the base to the discocellular, the white costal spot which follows about 10 mm. in length. The base of the wing only very slightly darkened. Under surface dark red-brown; the form of the light markings quite similar to those of *deidamia*, but the eye-spots much smaller, margined with red-yellow (as in *M. granadensis* Fldr., but the subapical eye-spot of the hindwing is considerably larger in the latter), the distal-marginal markings are white (not yellow as in *deidamia*), the proximal silver-white markings reduced, less continuous, and at the distal margin of the hindwing there are only small, narrow red longitudinal spots (no transverse band).

M. portis is the oldest name for a pretty species, which has generally found its way into collections under the name *cytheris* Godt. *portis* may be regarded as the type of a small group which embraces species with the sexes alike, in contrast to the forms of the *adonis* group with highly differentiated, heterochromatic ♀♀.

portis. Two subspecies can be separated with certainty. — *portis* Hbn. (68 a) according to VON BÖNNINGHAUSEN is never found in the plains, but only at higher elevations of the Sierra Geral, as at Petropolis and Novo Friburgo in the state of Rio de Janeiro, where it is by no means common. The upper surface differs from that of the southern branch-race in its unusually delicate light blue colour, shot throughout with glossy reflections, and which

sidera. only distally darkens somewhat towards violet. *sidera* Fruhst. demotes a form without apical ocellus on the underside of the hindwing, which bears pale yellow instead of reddish brown longitudinal bands on an unusually

thamyris. light ground and in addition has the silver bands nearly twice as broad as in normal *portis*. — *thamyris* Fldr., sufficiently characterized by the broader black border of the forewing and the darker blue gloss of the upper surface, bears beneath somewhat larger and more uniform ocelli, broader and more intensively red-brown longitudinal bands and consequently reduced silver stripes. The ♀ is rather rare, larger than the ♂, adorned with larger anteterminal and submarginal white crescents and small longitudinal stripes and with the wings more rounded. This elegant Morphid is very local in Sta. Catharina, but common in suitable localities (timber-forests overgrown with bamboo and intersected by large rivers). *thamyris* flies chiefly in the afternoon from 3—4 o'clock, when *Morpho anaxibia* is already disappearing into the shade of the woods. The butterflies fly slowly, scarcely 1—2 mm. above the ground, and are fond of resting with closed wings on bamboo-twigs. Also on the highlying country of Lages I met with *thamyris* in the damp woods of the valleys and the primeval forests on the Alto Uruguay. Flies principally in March. In Rio Grande according to MABILDE two generations occur, the first flying for 15—20 days in the spring, the second for nearly a month in the autumn. —

psyche. *psyche* Fldr., of which I have the type before me through the kindness of the directors of the Tring Museum, seems to be due to discoloration. Upper surface darker blue than in *portis*; distal border of the forewing broader, more uniform. Under surface: ocelli as in *portis*, but the silvery longitudinal band suppressed, the wings themselves faded into a lighter brown. Brazil.

lympharis.  *M. lympharis* Btlr. replaces *M. portis* in the Andean region, but has hitherto only been found in Peru and was described from Pucartambo. ♂ above somewhat darker blue than *M. aega* and with subapical white punctiform spots on the forewing. Underside of both wings with three ocelli, of which the apical and the two intermediate ones are elongate-oval in shape. Otherwise as *M. portis* Hbn.

M. sulkowskyi agrees with *portis* in its preference for the mountains and it is said to occur principally in the "tierra templada" of Colombia and Peru, where it ascends to 1—2000 m., and in Colombia is also met with on the tablelands. *sulkowskyi* is a notable species with strikingly thin scales, delicate light blue but with such a brilliant reflection that it is only surpassed by *M. rhetenor* and *M. cypris*. When viewed from the side the forewing shows further a violet tinge over the blue reflections. Three local races have hitherto been made

sulkowskyi. known: *sulkowskyi* Koll. (68 a), from Colombia. ♂ only blackened at the apex of the forewing and the anal angle of the hindwing, ♀ on both wings with black or brown distal border, which on the hindwing is divided by a pale yellow band. In the black anal spot of the hindwing in both sexes three dull bordeaux-red patches.

Under surface very similar to that of *portis*, but with chains of connected ocelli and very large apical eye-spot on the hindwing. The longitudinal bands of the under surface in the ♂ either blackish or reddish, in the ♀ a beautiful red-brown. According to recent observations made in the Central Cordillera of Colombia it sails along proudly in the middle of a crowd of black Satyrids on grassy mountain-slopes on the road to the Quindiu Pass. Difficult to catch, particularly in good condition; also occurring in the East Cordillera from 2—3000 m. — *zephyritis* Btlr. (on BUTLER's plate in Lepid. Exotica erroneously called *lympharis*) was described from *zephyritis*. Huasampillo in Peru. As a rule somewhat larger than *sulkowskyi* and with the longitudinal bands blackish and somewhat broader than in Colombian examples. The ocelli on the underside of the hindwing connected. The bands of the under surface showing through more clearly above, the submarginal band in particular standing out very sharply. I have examples before me from Pozuzo and Huancabamba, Central Peru, 1500 m. — *eros* subsp. nov. (*Stgr. i. l.*). Wings somewhat shorter, broader, with the black apical bordering much widened, on the other hand the hindwing without any black distal border. Upper surface with yellowish opalescent gloss, under surface with yellowish brown, more diffuse markings. Apical ocellus of the hindwing placed free. Bolivia, South-East Peru. *sulkowskyi* has recently been discovered also in Ecuador and the local form from there described as *sirene* Niep. *sirene* is said to be considerably larger than the race from Colombia, length of the forewing 60 against 55 mm. Wing-contour sharper, apex and inner angle of the forewing angled instead of rounded. The mother-of-pearl gloss more intensive and pure blue, without greenish admixture as in *sulkowskyi* and *eros*. Under surface white with somewhat more strongly marked bands.

M. rhodopteron Godm., from the Sierra Nevada in Venezuela, apparently represents *sulkowskyi* there, comes very near this in size, but bears only one instead of three ocelli on the underside of the forewing and three isolated, not connected as in *sulkowskyi*, rounded eye-spots on the hindwing. Very rare, only known to me from the figure.

M. aurora agrees with *portis* Hbn. in the shape of the wings and the arrangement of the black distal spots. Upper surface with light blue, distally darkening gloss. Under surface grey-white, with mother-of-pearl gloss, basal area purple. The ocelli show through distinctly above and are yellow in the middle, with white crescents and sharply ringed with black. On the forewing four or five, on the hindwing always four eye-spots, the apical one sometimes doubled, being accompanied anteriorly by a halved eye-spot. The species flies rather high; GARLEPP met with it at Cocapata in Bolivia at elevations of about 2600 m. The ♀ still awaits discovery. Two geographical races: *aureola* subsp. nov. (66 c as *aurora*), apparently not rare at Pozuzo and Chanchamayo, is somewhat smaller and darker than the Bolivian sister-form, *aurora* Westw., which according to STAUDINGER also (Iris 1894, p. 72) is notable for its relatively large size. *aurora* seems to be rarer than the Peruvian *aureola*.

M. adonis, the longest known species of a small group, is transitional from the *portis* series to the *rhethenor* group, and with it begins at the same time the series of species in which the Morphid character reaches its highest development, accompanied by a striking sexual dimorphism such as we find nowhere else in the Satyromorphids and which is only surpassed by a few Papilionids and Nymphalids. — *adonis* Cr. (= *eugenia* Deyr. ♂) (68 a), originally described from Surinam, inhabits Guiana and the northern bank of the Amazon. DEYROLLE had it from the River Oyapok on the borders of Cayenne and Brazilian Guiana, MICHAELIS found it at Obidos on the lower course of the river, Dr. KOCH on the Upper Rio Negro, Dr. HAHNEL reports its capture at Iquitos and Pebas. There *adonis* flies quickly and impetuously (sometimes at an elevation of 12 ft.), dashing out from among the branches, crossing the road and following clearings among the trees, in which they sail along just over the tops or in and out among the branches. The ♂ resembles the generally known *aega* (66 b) above, but the blue is duller and lighter. Forewing also above with the two white costal spots which our figure of the underside reproduces and with less black at the apex. — In *adonides* Stgr., an aberration from Iquitos, however, these white patches are absent, and the white stripes of the under surface are more blurred, nearly effaced. The ♀ is much larger with the basal part of both wings above black-brown, and has extended yellowish white, proximally strongly dentate longitudinal bands. The under surface is predominantly silver-white with pure white median area, reddish anteterminal band and the ocelli ringed with brilliant yellow. It was figured as long ago as 1785 as *marcus* Schaller, afterwards rechristened *urania* by DEYROLLE, and KIRBY is not altogether to be blamed for having referred the ♀, from SCHALLER's figure, to the Zeuxidiids, to which it shows a superficial resemblance.

M. uraneis Bates is an extraordinarily rare species; in addition to the type only three examples seem to be known, which were collected by Dr. HAHNEL at Iquitos and Pebas. According to STAUDINGER *uraneis* has the upper surface blue with brilliant mother-of-pearl gloss and is larger and broader-winged. Its flight is more regular and not so rapid as that of *adonis*.

M. aega, one of the best known and in the ♂ one of the commonest Morphids, shows a tendency, within its relatively narrow range of distribution, to interesting geographical variation. The name-type, *aega* aega.

Hbn. (66 b), probably came from the state of Rio de Janeiro, although according to VON BÖNNINGHAUSEN the species does not occur in the town of Rio itself, but only in the north-west of the province of this name, and is probably distributed as far as Sta. Catharina. The ♀ was first figured by STAUDINGER; it differs from our figure (*mellinia*, 66 b) in the darker colouring, the smaller transcellular patches of the forewing and the far larger submarginal spots of the hindwing. — *mellinia Fruhst.* differs from ♀♀ from Rio de Janeiro in the more extended black border of both wings and the much more broadly black thickening of the veins of the forewing. In addition on the forewing in the broader black spot at the apex of the cell and the larger yellow circumcellular patches. Lower median at its base, submedian in the middle, bordered with broad patches of black scales. The hindwing darker red-brown. Distal border more broadly black with the yellowish rounded patches considerably smaller. — *bisanthe Fruhst.* (66 b), with the type from Sta. Catharina, describes the southern form of the collective species, in the ♀ recognizable at once by the almost uniformly large yellowish submarginal spots, which mostly extend from the anal angle to the apex, whilst in *aega* and *mellinia* they do not reach beyond the median part of the forewing. The circumcellular spots are larger and lighter. The black spot before the apex is narrower, more diffuse, and only extends to the middle of the anterior wall of the cell. The ground-colour of the yellow ♀♀ much paler, on the hindwing without brown tinge; the submarginal patches of the forewing more uniform, forming a more complete row. The ♀♀ are among the most variable Morphids and three principal forms may be distinguished, including the normal (most commonly occurring), predominantly brown-yellow ♀, analogous to that of *mellinia*, and probably the ancestral form, still recalling the Brassolids, thus phyletically the oldest. Besides this we have *mixta Fruhst.*, with partial blue reflections on the forewing (*mixta*, 66 b), and finally *pseudocypris Fruhst.* (66 c), in which the yellow-brown gives place to a dark or light blue, which overspreads the whole upper surface. Whilst the ♂♂ before me from Rio de Janeiro, Paraná and Blumenau show *inter se* no differences worth mentioning, the ♂♂ of *bisanthe* from Rio Grande do Sul can be at once separated from their more northern representatives by the predominantly white-grey instead of purple-brown under surface, which in addition is traversed by more sharply defined, i. e. more strongly black-bordered and consequently more distinct, grey-white or pale yellow longitudinal bands. Also the *bisanthe* ♀♀ are paler yellow beneath and in the form *pseudocypris* with more prominent light areas than in *mellinia*. Thus in the north Espiritu Santo with an almost uniform hot, damp climate all the year round, which produces a continuous, vast forest area covering the still almost unknown interior of the province, has a deep-coloured, one might say rainy-season form. Rio Grande do Sul, on the contrary, with pronounced separation of the seasons and great extremes in temperature, produces, on account of the dry prairies extending from Argentina, which restrict the primeval forest to a relatively narrow tract in the eastern slopes of the coast-mountains, a pale race with all the characteristics of a product of a dry region. MABILDE says that *bisanthe* occurs for 10—15 days in the spring and 20—40 days in the autumn on forest-paths. Of the rare ♀♀ about 10—15 are found to 1000 ♂♂. BURMEISTER knew an *aega* race with blue ♀♀ from the Missiones in the state of Argentina, discovered there by CARLOS BERG.

M. rhetenor, already named by CRAMER the “blue elongate Atlas butterfly”, has the apex of the forewing more produced than any other Morphid species; a characteristic, however, that partially disappears in the ♀, which more resembles that of *cypris*. The ♂ is one of the most brilliantly glossy species and has only a quite inconsiderable black apical spot and a white costal patch on the forewing. The under surface is noteworthy for the contrast between the black basal area and a brown distal region, which are separated by a median band of a more or less pure white and of varying extent according to the locality. Both wings beneath show brown rounded eye-spots entirely without white pupils. — *rhetenor Cr.* (68 b) inhabits Guiana and its ♂♂ are much smaller than those from other localities. The under surface of the ♂♂ must at the same time be described as the dullest in colour. The eye-spots of the hindwing remain light red-brown and the median area is dull grey. The very rare ♀, which we figure from an example in coll. FRUHSTORFER, exceeds the ♂ in expanse and is striking chiefly on account of the contrast of the deep velvety brown cell in the forewing and of the submarginal area against the ochreous median area. — *eusebes Fruhst.* inhabits the Amazon region, where MICHAELIS observed it at Obidos in August and September, and Dr. HAHNEL at Iquitos and Jurimaguas. According to Dr. HAHNEL (*Iris* 1890, p. 235) *eusebes* always flies at a great height and energetically, mounting from 3 to 6 m. with an undulating flight, and can only occasionally be attracted to fly down on to wings of *Morpho menelaus* laid on the ground. The ♀ settles on wet places on the banks of rivers (a habit which I also observed in *M. anaxibia* in Sta. Catharina). When disturbed they only fly away slowly, in contrast to the ♂♂. The ♂♂ emit a smell of sulphur (HAHNEL l. c., p. 308). ♂ considerably larger than *rhetenor rhetenor Cr.* from Surinam, with the black at the apex of the forewing somewhat more extended and with the first beginnings of the yellow spotting which distinguishes *cacica Stgr.* Under surface brighter, fresher-coloured, with more delicate grey-white median area and more distinct, darker brown, incomplete ocelli on the hindwing. A comparison of the figure of our *rhetenor* ♀ with that of *eusebes* ♀ given by STAUDINGER, *Exot. Schmetterlinge* pl. 70, shows the following differences: ground-colour of the *eusebes* ♀ light, almost canary-yellow, without any brown admixture. Transcellular spot nearly twice as broad, all the distal patches likewise more intensive and finer yellow, isolated, and divided into two instead of three rows as in *rhetenor*.

— *cacica* Stgr., described from the Chanchamayo in South Peru, is connected with *eusebes* by transitions *cacica*, which occur already on the Upper Amazon. The type is characterized by a median row of four or five whitish yellow intramedian spots, sometimes also in addition some similar spots before the distal margin. The under surface of the hindwing shows a very narrow brown transverse band, which encloses the dark brown ocelli and is not broadened posteriorly as in *eusebes* and *rhetenor*. ♀ apparently still unknown. — *helena* Stgr., a very *helena*, distinct geographical race almost entitled to specific rank; upper surface much nearer to *cypris* Westw. than to *rhetenor*, only differing essentially from the former in the absence of the yellow submarginal markings on both wings and in having the produced apex of the forewing (so characteristic of *rhetenor*) even more strongly developed than in *eusebes*. The median band of the under surface, which is dull grey in the other representative of *rhetenor*, is in *helena* pure white, broad and traverses the forewing from the apex of the cell, the hindwing for its entire length. Much, however, as the ♂♂ differ from *rhetenor* type in the metallic iridescence of the median band, the ♀ of *helena* nevertheless remains constant and apparently scarcely differs more than *rhetenor* ♀ from the ♀ of the Amazon form *eusebes*. It is larger than *eusebes* ♀, but has the yellow areas of the forewing quite as extended and the submarginal patches on the upperside of the hindwing more strongly marked, but likewise arranged in three parallel rows. The under surface of the forewing somewhat duller than in *eusebes*, the hindwing predominantly grey and in the median area nearly pure white instead of yellowish. The ♂♂ came from the Rio Huayabamba near its union with the Huallaga, in North Peru; the ♀ was discovered at Tarpoto in October, 1901, by the well-known collector MICHAEL, who sent a coloured drawing of it on which our diagnosis is based. Only yellow ♀♀ are known, but it is very probable that, as in all the species of the *adonis-rhetenor* group, ♀♀ tinged with blue will also be discovered.

M. cypris replaces *rhetenor* in Colombia and Central America and one might strictly speaking unite it with the latter as a geographical branch unless the anatomy shows essential differences. *cypris* is here, however, kept separate on account of the rounded shape of the forewing and the somewhat more vertically placed white median band of the upper surface. *cypris* and *helena* outshine even the other Morphids in their incomparable gloss and *cypris* in particular is a true gem, unequalled in its brilliance throughout the whole of nature (SCHATZ). According to the fall of the light the blue of this incomparable insect shows a more violet or more greenish gloss and the delicate white band a yellowish tone or more of a tinge of rose-colour. The blue is of such ethereal purity and such intensive lustre that all the other colours appear faded or dull in comparison. Only the Malayo-Australian Ornithoptera can outrival the Morphids, adding as they do to the brilliance of their golden green colouring the further charm of a quite distinguished form and wing-contour. The scaling itself, as in *rhetenor*, remains fixed, but the interference scales are wanting in the normal ♀♀, so that these are of the primitive yellowish ochreous (Brassolid) ground-colour common to all the species of the *adonis* group. Two local varieties: *cypris* Westw. (68 a ♂, b ♀). The ♂♂ are scarcely modified and the ♀ differs from that of *rhetenor* in the more *cypris*, distinctly isolated yellow submarginal patches and a yellow diffuse spot in the cell of the forewing. On the under surface both sexes bear in addition, especially on the hindwing, fully developed ocelli with deep yellow rings and white pupils, instead of the blind brown patches of *rhetenor*. The ♂♂ otherwise resemble those of *rhetenor* beneath, but the brown bands always remain paler; median area white in the ♂♂, yellowish in the ♀♀, on the forewing extending without interruption to the costal margin. Of the ♀ examples are also known which are shot with brilliant blue like the ♂♂ (*cyanites* form. nov.), but in these the blue reflection always *cyanites*, leaves free a rather broad brown distal margin. Colombia, principal locality the vicinity of the emerald mines of Muzo, from whence *cypris* is brought to Bogotá for sale as "mariposa de Muzo". — *bugaba* Stgr., from the *bugaba*, Volcan de Chiriqui, is distinguished from Colombian examples by the more extended white median band, smaller size and darker under surface. According to GODMAN and SALVIN specimens of *cypris* from Nicaragua are almost identical with Colombian, but ♂♂ from Panama are again much smaller with narrower bands. The butterflies fly at a great height in the clearings which have been made in the woods for the Panama railway.

M. anaxibia Esp. (69 c) may be regarded as one of the characteristic butterflies of southern Brazil. *anaxibia*. The species stands quite alone in having the abdomen blue above, but forms a transition from the *rhetenor* to the *menelaus* group. *anaxibia*, however, lacks the wonderful gloss of the *rhetenor* series, the blue is duller, although it has its own particular beauty, and the dazzling iridescence is wanting. The ♂ still suggests *rhetenor* in the under surface, the ♀ reveals more connection with the *menelaus* group, but its marginal spots are yellow instead of white. The ♂ bears a narrow black costal border, which is inappreciably widened at the apex and then continued to the hinder angle of the forewing as a proximally more or less dentate distal border. Beyond the cell there is a white patch at the costal margin, but in examples from Blumenau this is frequently absent. The forewing is predominantly black beneath, the hindwing red-brown, respectively with two to three and four to five medium-sized eye-spots, slightly pupilled with white and mostly ringed with light grey-yellow. The under surface of the ♀ is more variegated, marked with slightly glossy broad grey zigzag bands and patches. The ♀ varies above in the white, delicately blue-dusted transcellular patch of the forewing, which may be

composed of only one (Paraná) or of three divisions. In the extreme south of its range, in Rio Grande do Sul, occurs a small form, *pelias* subsp. nov. (69 c), the ♂ of which is decidedly lighter above, more whitish blue; the ♀ has somewhat more distinct white median dots on the forewing and more strongly marked yellow spots in the submarginal area of the hindwing also. The ♂ is coloured more like the ♀ beneath, without the contrasting grey areas of the Blumenau form and without the uniform brown-yellow of the ♀♀ from Espiritu Santo. The latter locality is new for *anaxibia*; in STAUDINGER's time Rio de Janeiro was regarded as the most northern point of its occurrence. According to MABILDE it flies for 15—30 days at the end of January and beginning of February and the time of flight only occasionally extends to the end of March. I myself observed *anaxibia* in large numbers in Santa Catharina, in February, particularly in a side valley of the Capivary River. Here a crystal waterfall sprinkled the roots of the forest giants and thus provided a centre of attraction for butterflies of all sorts. As a wild beast seeks out certain set tracks in order to reach the water, so *anaxibia* also haunts this spot daily, following up accidental clearings in order to gain the cascade, as if they also sought there for cooling refreshment among the softly rustling arches of the tall bamboos shaken and bedewed by the foaming water. They did not arrive in companies but singly, sailing quietly along, but nevertheless after heavy rain the sand-banks before the rocks of the river were strewn with the glittering blue wings of dead *anaxibia* and *aega* which the water washed up. The ♀ is extraordinarily rare and on hot days rests in the morning hours with the wings closed in wet places in the forest-paths where it can imbibe the moisture. It is then so well concealed by the red under surface, which differs but little from the surrounding ground, that it is usually only noticed by the collector when it is too late. According to VON BÖNNINGHAUSEN *anaxibia* is common in March on the Corcovado. — Larva on Canella and one of the Myrtaceae "Grumexama", elongate, appreciably thickened in the middle, head with two lateral, not very distinctly projecting tubercles with long bristles. Head shining yellowish horn-colour, covered with small rounded pitting and dots, with fine white hairs and with strong red-brown bristles. Body yellow, sides densely clothed with fine woolly hairs, back gaily coloured, the first two segments finely haired, on the third to the sixth segment long lateral tufts of bristles, then a varied mixture of black, bordeaux-red and white. The 5th and 6th segments naked, the 7th and 8th with a St. Andrew's cross-shaped figure, the four ends of which are adorned with gay tufts of bristles. Anus with two lateral bunches of bristles and the beginning of the last segment, like the anterior ones, armed with brightly coloured hairs. Over the back runs a rather broad band with the inner edge distinct, the outer broken up into marbling. All the segments further with a double red lateral line. Underside with red-brown patches between the legs. Pupa posteriorly strongly swollen, short, light green with yellowish wing-cases and sharply defined yellow-white ring shortly behind the thickest part of the body. Head with two fine, pointed black horns; in general smaller, weaker, slighter than those of *Morpho hercules* Dalm. In the yellowish ring the pupa of *anaxibia* also differs from that of *M. catenarius* Perty. In Sta. Catharina pupation takes place approximately from the 15th of January to the 1st of March.

M. menelaus, one of the historic species, received its illustrious name from LINNÉ and well deserves it on account of its imposing size, which gives it a preeminence comparable to that of that hero of ancient mythology. *menelaus* has at the same time a very wide area of distribution, for its numerous branches have spread over the entire tropical region and we meet with them from Guiana to Santa Catharina and on the Pacific side from Colombia to the lowlands of Bolivia, so that its range about agrees with that of *M. achilles* and *achillaena*. In Colombia a new branch has developed from the old stirps, producing in *amathonte* Deyr. a representative form which almost claims rank as a species. In contrast to *achilles*, however, which towards the south decreases in size and loses in beauty, it is in its subtropical representatives *nestira* and *godarti* that *menelaus* attains the maximum of its development and of its brilliance. Its extremes of variation are illustrated by our figures 69 c and b for the ♂♂ and 71 b and 70 b for the ♀♀. On the under surface all the *menelaus* forms agree in having the ocelli ringed with red, while in *amathonte* they are bordered with yellow. According to the locality the intensity of the proximal bordering of the ocelli varies, from a dull bronze-green tinge nearly to glossy silver-white. Equally variable is the colour of the submarginal area of both wings, which may be dull grey, greenish purple and even vinous. ♀ always considerably larger than the ♂, with more or less copious white dots and median bands on the forewing. ♀♀ not so extremely rare as those of the *adonis-rhetenor* group. Concerning the early stages nothing further is known than that the egg is about 2 mm. in diameter, hemispherical, not shining but dull grey-white and somewhat transparent. The ♀ probably lays about 2 dozen of these disproportionately large eggs, and oviposition seems to proceed slowly. Tegumen with relatively shortened uncus, which is strikingly thickened basally and has an abruptly marked-off, chitinized, sharp point and two finger-shaped, uniformly thick lateral processes. Valve rounded, broad with distally chitinized pad, which shows a few larger and many small teeth. Valve distally with long bristles. Penis long, membranous, without the pronounced teeth of the *M. achilles* group. *menelaus* leaves its nightly hiding-place as early as 8 o'clock in the morning, when the sun is only beginning to send its rays obliquely through the leafy clothing of the forest giants, and commences to sail along in great undulating sweeps. Against the dark green the huge butterfly appears even larger when

in motion and the magnificent play of colours of the upper surface is perfected by the silvery decoration of the under. When the ♂♂ come upon an open track they follow it impetuously, as if to give free scope to their powers of flight. The ♀♀ awake much later than their suitors, as a rule not until towards midday. Their flight is then, however, not continuous like that of the light-winged ♂♂, but sluggish, aimless, heavy, as if in a dream, and it alternates with frequent pauses for rest, quite in the manner of some lost, frightened creature, driven by unconscious impulses. But when they have paired and are disturbed by the collector an interesting scene ensues, the huge ♀ flutters heavily about with its inert partner until it has again obtained a foothold. The rose-tinted under surface of the ♀, with its large ocelli, contrasts with the much darker one of the ♂ and is admirably concealed from the prying eyes of enemies in the shadow of the foliage or the confusion of brown, withered leaves. In contrast to *rhetenor* and the species of the *iphimedeia* group, however, *menelaus* keeps nearer to the ground, and according to Dr. HAHNEL it even abandons its aimless jerky movements when it passes over rivers, in the consciousness of safety which the wet element under it affords. The remarkable impression which the Morphids call forth in European travellers seems to be shared by the natives, only with this difference, that they see in them nothing attractive, but associate them in their ideas with the embodiment of malevolent spirits. According to Dr.³ KOCH-GRÜNBERG (Two Years among the Indians, Berlin 1910) the large azure-blue butterfly „Tataloko“, which enchants the eye with its brilliant colouring and looks like a little piece of the sky come down, is one of the most dangerous demons. It has its abode in Yurupary Cachoeira, the first and highest of the multitude of falls and rapids in the Rio Caiary-Uaupes, where it brews malaria in a large pot, so that all who drink of the water fall sick. As a matter of fact Dr. KOCH had personal experience that malaria does occur on this otherwise healthy river above the cataract, in consequence of the quite different, white, almost stagnant water there. The mask of the butterfly, which the natives put on in the „Morpho“ dance, is well characterized by the wickerwork wings, painted with gay patterns, which are attached to both sides of the body, and by the curved proboscis composed of Cipo (a climbing plant)*). The zigzag marking on the breast of the mask indicates the fluttering of the butterfly. The dancer holds in one hand the symbol of the pernicious activities of his demon, the drinking-cup, on which he beats time with a small stick. — *menelaus* L. (69 c ♂, 71 b ♀), the name-type, is at the same time the smallest race of the collective species: the ♂ was named *nestor* by CRAMER, a name which by oversight has been transferred to the ♂ on our plate. As may be seen from the figure, the ♂ is pale blue, but with extremely intensive reflections. The ♀ has only quite small white discal patches and the white spots on the discocellular are less developed than in the other races. Surinam, apparently not very common, as my collector MICHAELIS during his two visits there only handed over quite a few examples. — *terrestris* Btlr. is the geographical race from the Lower Amazon, first made known from Villa Nova (the present Villa Bella); its under surface is cinnamon-brown with somewhat more pronounced rows of bronze-green spots proximally to the small ocelli, which in the ♀ are placed in a white foreground. ♂ above already somewhat more broadly bordered with black than *menelaus* from Guiana; ♀ with the subapical patches on the forewing prolonged and the white transcellular band considerably broader and also extending further towards the middle of the wing. From Obidos in my collection. As *melanippe* Btlr. an aberration was described with only one eye-spot on the underside of the forewing. — *melacheilus* Stgr. The black bordering of the ♂♂ is already essentially widened and in the ♀, although the proximal decoration of the ocelli on the under surface is considerably enlarged and assumes a light silvery gloss, yet on the upper surface the blue is so much reduced that only a narrow median area of it persists (much as in *M. achilles*) and the entire basal area is again occupied by the black ground-colour. There is also a corresponding reduction of the white transcellular spot of the forewing. Upper Amazon as far as Iquitos. — *occidentalis* Fldr. is a further local form, which I formerly regarded as identical with *melacheilus*, but examples entirely discovered by A. H. FASSL have shown me that both sexes differ beneath from *melacheilus* in the broad median bands of both wings, which in the ♂ are bronze-green, but in the ♀ brilliantly silvery and essentially widened. The markings of the upperside in the ♂ indicate a retrogression to the name-type and *occidentalis* ♀ only differs from Surinam examples in its smaller size and the somewhat more pronounced white spots. Base of the wings as in *terrestris*, dark blue with violet reflections, but not black as in *melacheilus*. Upper Rio Negro from about 800 m. According to Dr. HAHNEL *occidentalis* flies all the year round. — *nestira* Hbn. designates the handsome Brazilian branch-race, of which HÜBNER figures a ♂ with dark upper surface and very broad black apical and distal bordering on the forewing. As just such examples occur in Santa Catharina it may be assumed that the type came from the southern provinces of the country. — Larva according to Dr. WILHELM MÜLLER with a pattern in the last stadium which betrays the closest relationship to that of *Morpho achillides* in its first. The light spots in the medio-dorsal line are almost entirely suppressed. Ground-colour of the body liver-brown mixed with black, two large yellow-green, dark-edged spots in the middle of the dorsum.

*) Dance-masks of this sort are exhibited in the very rich South American section of the Museum of Ethnology in Berlin, of which KOCH's celebrated collection constitutes not only the most richly coloured but also the best preserved and labelled part.

The tufts of bristles predominantly black, at the anterior margin white. — In Rio de Janeiro, on the other hand, occurs a form with the distal margin quite considerably reduced. *tenuilimbata* Fruhst., and the ♀ from this state are somewhat smaller than those from Blumenau, they are lighter blue, like the ♂♂, the white median band of the forewing traversing the wing to the middle median vein and not so sharply defined. The under surface is altogether less highly coloured, wanting both the copious white dusting and the purple or vinous tinge which adorns *nestira*. *tenuilimbata* is one of the ornaments of the landscape in the neighbourhood of Rio de Janeiro, where it is common in April and May, splendid fresh examples being met with especially after heavy rains in the gardens of the villas and in the streets at Corcovado. MICHAELIS found *tenuilimbata* a great rarity in Espiritu Santo, and I have recently seen ♂♂ from Matto Grosso. Tegumen with somewhat shorter thumb-shaped lateral protuberances than in *menelaus occidentalis* Fldr., valve distally more compressed, the dorsal pad not dentate. *tenuilimbata* leads over to *mineiro* Fruhst. (69 b ♂, 70 a ♀), from Minas Geraes. Length of forewing in ♂ 75 mm., in ♀ 83 mm., against ♂ 90 mm., ♀ 98 mm. in *nestira*. A small local form, perhaps only the product of a tract of country in which the dry season is of long duration. ♂ deep blue with the black distal border of both wings very broad, particularly in comparison with its small size. White costal and apical spots reduced. Under surface: forewing: basal part uniform dark brown, distal area with greenish grey scaling. The postdiscal silver spots, mostly prominent in *nestira*, obsolete except for a few atoms. All the ocelli reduced, very small, forewing only with one eye-spot between the medians. ♀: black distal border of both wings broader, more uniform, containing more prominent, rounded (not strigiform) white submarginal dots. The white band on the forewing beyond the cell so obscured by the more intensive and distally extended blue reflection as to be only observable in certain lights. The blue basal tinge on both wings lighter. Under surface: ocelli as in the ♂ much reduced, the crescents on the forewing more open. The silver ornamentation proximally to the ocelli darker, more bronze-colour. Minas Geraes. *mineiro* is analogous to *perseus richardi* Fruhst. (69 a) from the same district and is similarly dwarfed in habitus and in the form of the ocelli. *nestira* apparently does not reach Rio Grande do Sul and also seems unable to subsist in the dry northern provinces, such as Bahia and Pernambuco. Although the species is bred in Blumenau nothing has yet been published concerning the early stages. — *ornata* subsp. nov., named from examples in coll. STAUDINGER, has a broader black distal border, in the ♀, on the other hand, the white submarginal band of the forewing is reduced. From Casa Braca in the province of São Paulo, South Brazil.

M. amathonte, whose specific right has repeatedly and justifiably been called in question, can nevertheless be easily separated from the forms of the *menelaus* series by having the ocelli on the underside ringed with yellow instead of red. The ♂♂ are about intermediate in the shape of the wings between *menelaus* and *didius*, the black apical border as in *menelaus*, the distal margin very narrow, as in *godarti didius*. Distributed from Colombia to Nicaragua. Splits up into three well differentiated local forms: *amathonte* Deyr. is one of the characteristic butterflies of consignments from Muzo, Colombia, and the ♂♂ are never wanting in the so-called "Bogotá lots", which are sold in Germany and England. The ♀, however, is always rare and differs considerably from the ♂. ♂ above lighter blue than *menelaus* with a slight admixture of whitish, recalling *M. adonis*. Under surface somewhat lighter than that of *menelaus* with more copious whitish grey powdering on the submarginal part of both wings. The white pupils of the ocelli on the forewing occupy the distal part of the yellow bordering. The white median band, which characterizes *centralis*, is much shortened, the white discal patches considerably narrower and even more pointed than in the Central American race. — *centralis* Stgr. (71 a) is an albinotic geographical form with the ♂♂ even lighter blue and more intensively glossy. The upper surface of the ♀♀ as a rule has the white median bands even broader than our figure shows and traversing the entire forewing. The under surface in both sexes, as also in *amathonte*, of fairly uniform colouring, but in *centralis* strikingly pale yellow-grey with whitish submarginal area on both wings. Occurs from Panama to Nicaragua, mostly represented in collections by the form from Chiriqui, where it is rather common, while at other places it is only met with very sparingly. — *julanthiscus* Fruhst. comes from Ecuador and was originally united with *M. didius* Hpffr.; even larger than *didius*, but more approaching *menelaus* and *godarti* in the colouring of the upper surface, having the blue of deeper and duller tone and not opalescent. The under surface is noteworthy for the considerably smaller ocelli, which are placed on a darker ground, the metallic decoration is reduced, rather golden than silvery. All the ocelli with golden bordering. Red antemarginal bands of both wings more intensive and pronounced, as also their black bordering, which is proximally accompanied by a bronze-coloured ornamental band, wanting in *didius*. The transverse bands in the cell of the forewing and the proximal gold crests of the ocelli on the hindwing less conspicuous than in *didius*, more distinct than in *assarpai*. ♀ still unknown. Santa Iuez, Ecuador.

M. godarti Guér., with the name-type from Bolivia, extends northwards to Peru, where it breaks up into one or two local forms, concerning which, in the rarity of specimens, some doubt still exists as to whether they should be joined to one or other of the two species *didius* and *menelaus*. Those forms are here regarded and treated as *godarti* in which the ♀♀ have the cell of the forewing much narrower than those of *didius* and which at the same time approximate more nearly to *menelaus* in the darker blue, slightly violet-tinged upper surface. ♂♂ beneath either predominantly pale milk-white or broadly shaded with red-brown. Of the ♀ there occurs also at Coroico, at elevations of 1200 m., a form with red submarginal spots on the upperside of the forewing. The following two or three branch-races I have had to work out in part from the diagnoses of their authors and without having seen the originals: — *alexandra* Hew., described without any indication of locality from an example in coll. LABREY of Bowdon near Manchester, decidedly belongs here and not to *anaxibia*,

where STAUDINGER, following KIRBY's Catalogue, had placed it. HEWITSON's characterization "Upper surface brilliant silvery blue, changing to pink and distally to brilliant ultramarine blue, purple near the brown distal margin, which bears lunules as well as eye-spots, the latter only showing through faintly from beneath, habitus nearest to *anaxibia*, but with the colour of *Morpho portis (cytheris)*" is very apt. So is the extension of the diagnosis in the description of the under surface, which is called "rufous or lilac-white clouded with rufous-brown". The red-brown cell bears in the middle a white (said to be silvery-white) band. Forewing with four, hindwing with six ocelli; black-ringed with white pupils and standing in an unequal silver-white band. I have a ♀ before me from the fine WILLIAM MORTON collection in Lausanne; it shows small white, distally pointed postdiscal and light vinous submarginal spots. The transcellular spot of the forewing in contrast to *didius* short, narrow, only consisting of two component parts. — *alexandrowna* Druce is probably the ♂ to *alexandra*, *alexandrowna*, unless it belongs to a subordinate geographical race. ♂ greenish blue with light spot before the apex, below which are placed three faint blue-white patches. Under surface dark chocolate-brown with grey scales near the distal border. Ocelli three times as large as in *menelaus*. The type of *alexandrowna* is in the British Museum. A ♂ in coll. FRUHSTORFER from Pozuzo agrees with the description. — How far a further race from Peru, *assarpai* Rüb., can be kept associated with *alexandra-alexandrowna* can only be proved by a comparison of the types. Three ♂♂ in my collection from Pozuzo agree with RÖBER's description; they approach *didius* Hpffr. in the somewhat lighter blue of the upper surface, and the basal area of the hindwing is less extended and more sparsely scaled with grey-green than in the ♂ with dark blue upper surface, which I have referred provisionally to *alexandrowna*. The clasping-organs of *assarpai* Rüb. are about intermediate between those of the secondary genitalia of *M. menelaus* L. and *M. didius* Hopffr. Valve somewhat larger and more markedly rounded than that of *menelaus*. Uncus apparently somewhat longer, the thumb-like lateral projections decidedly larger, both in their horizontal and vertical measurements. Uncus on the other hand more slender than that of *didius*, the lateral lamellae less robust and the valve not so fully rounded.

M. didius Hpffr. approximates to *amathonte* Deyr. from Colombia in certain respects, particularly in its very broadly white-banded ♀, and the two species also agree in the lighter under surface. But the red instead of yellow bordering of the ocelli on the under surface establishes its connection with *M. menelaus*, though it differs from the latter in the strikingly light basal area on the underside of the hindwing and the brilliant silver-white decorations, and not least in the peculiar light blue opalescent reflections on the upperside of both wings. Morphologically it differs less markedly from *menelaus* than in the scheme of colouring and markings. *didius* can, however, in general be separated from *menelaus* by the broader valve, almost fully rounded distally and more regularly and delicately dentate than in *menelaus*. Uncus with the lateral thumb-shaped processes considerably widened. ♂ above characterized by the already mentioned opalescent reflection, peculiar to this species, somewhat suggesting *M. octaviae*, but at the same time brilliantly glossy as in *amathonte*. Distal border of both wings very narrowly black. Under surface of the forewing with three or four light vinous-ringed ocelli. Hindwing with an apical eye-spot between the radials and two intramedian eye-spots, to which is further added a smaller accessory ocellus in the submedian interspace. Forewing with broad silver band and greenish silver transcellular area. Hindwing with a silvery bronzy ornamental band proximally to the ocelli and three detached wedge-spots of the same colour in the subbasal area. The distal region of both wings powdered with white or purple on a yellowish ground. Peru: Chanchamayo; probably also Bolivia. Judging from the ♀♀ in coll. STAUDINGER those from Huayabamba have the most prominent white median band on the upperside of the forewing, while those from Cuzco agree with the typical form from Chanchamayo. As the ♀♀ from Huayabamba also bear the most extended silver-white band on the hindwing beneath, they may be separated as *argentiferus* subsp. nov.

Addenda to the Morphids.

M. amphitriton p. 336. I have examples before me from Marcapata and Cuzco, Peru, with violet reflections on the upper surface, *azurita* form. nov. *azurita*.

M. eutropius p. 339. In coll. STAUDINGER there are ♂♂ from Pernambuco, above glittering mother-of-pearl colour, beneath with more marked, more strongly white-pupilled ocelli.

M. argentinus p. 340. There are ♂♂ from Uruguay in the Berlin Museum.

Under *M. patroclus* p. 343 a form should be mentioned, *macrophthalmus* subsp. nov., from Rio San Juan, with gigantic ocelli on the underside of the hindwing, bounded by a bright glossy greenish band. Type from Colombia in coll. STAUDINGER. *macrophthalmus* subsp. nov. is a further local race from Colombia. Type likewise in the Berlin Museum, with very small ocelli bordered by an indistinct whitish band. The submarginal stripes of both wings a peculiar grey with rosy tinge. *macrophthalmus*.

M. deidamia p. 347. *praenestina* subsp. nov. from Venezuela, from the Atahapo Yarita, discovered by VRAZ. Above darker than *hermione*, recalling *neoptoemus*, thus differing from *deidamia* Hbn. and *erica* Fruhst., which have a violet base. Upper surface of the forewing almost without white subapical patches; in this again more approaching the Surinam race. *praenestina*.

M. zephyritis p. 349. ♀ at the British Museum; above yellow-green, the apex of the forewing broadly black, the hindwing with some orange spots and two black subterminal bands.

M. aurora p. 349. ♀ in coll. ADAM and FRUHSTORFER; has on both wings a black-grey distal border, divided by yellowish lunules and proximally bordered by larger grey-white patches.

M. helena p. 351. From the Tarapoto come smaller ♂♂ with reduced yellow median band, which moreover are copiously dusted with blue. Under surface darker than in the name-type — *chrysides* subsp. nov. *chrysides*.

M. cypris p. 351. *chrysonicus* subsp. nov. has a narrower median area on the forewing and more pronounced submarginal band on the hindwing than *cypris* from Colombia. Venezuela, collected by VRAZ. Type in the Berlin Museum. *chrysonicus*.

M. melacheilus p. 353. ♀♀ occur with a remarkable flesh-coloured submarginal tinge on the underside of the hindwing. From São Paulo, Amazons.

Alphabetical List

with reference to the original descriptions of the forms of the American *Morphidae*.

* signifies that the form is also figured at the place cited.

- achillaena* M. *Hbn.* Smlg. Exot. Schmiett. *
achilles M. L. Mus. Ulric., p. 211.
adonides M. *Stgr.* Exot. Tagf. 1, p. 206.
adonis M. *Cr.* Pap. Exot. 1. *
aega M. *Hbn.* Sammlg. Exot. Schmiett. *
agamedes M. *Fruhst.* Seitz, Macrolep. 5, p. 343.
alexandra M. *Hew.* Trans. Ent. Soc. Lond. (3) 1, p. 518.
alexandrowna M. *Druce*, Trans. Ent. Soc. Lond. 1874, p. 155.
amathonte M. *Deyr.* Ann. Soc. Ent. Fr. 1860, p. 211.
amazonicus M. *Fruhst.* Stett. E. Z. 1907 p. 158.
amphitriton M. *Stgr.* Exot. Tagf. 1, p. 205.
anakreon M. *Fruhst.* Entomol. Zeitschr. 24, p. 193.
anaxibia M. *Esp.* Ausl. Schmiett. Abbild. *
aquarius M. *Btlr.* Cist. Entomol. 1, p. 74.
aratos M. *Fruhst.* Entomol. Zeitschr. 19, p. 126. *
argentinus *Fruhst.* Stett. E. Z. 1907 p. 217.
argentiferus *Fruhst.* Seitz, Macrolep. 5, p. 355.
assarpai M. *Röb.* Stett. Zg. 64, p. 348.
aurcola M. *Fruhst.* Seitz, Macrolep. 5, p. 349. *
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bahiana M. *Fruhst.* Entomol. Nachr. 23, p. 253.
bisanthe M. *Fruhst.* Stett. E. Z. 1907 p. 214.
briseis M. *Fldr.* Reise Novara Lep. S., p. 459.
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7. Family: Nymphalidae.

This gigantic family — even understood in the narrower sense — embraces approximately 2000 American forms, which in spite of apparently great superficial differences yet form a very natural division of the butterflies. Its delimitation has been worked out on very varying principles. Sometimes they have been grouped together with the Satyrids and Danaids as a subfamily, on account of their agreement with these in the structure of the legs, sometimes the *Acraeinae*, *Apatura* and the genus *Heliconius*, the *Biblinae* and others have been eliminated from them. After the comprehensive works of DOUBLEDAY and WESTWOOD C. FELDER was the first who made the classification of the Nymphalids a special study. But he was too much prepossessed in favour of HERRICH-SCHÄFFER'S exaggerated estimate of neurulation to be able to establish a purely natural system. Although his publication appeared almost at the same time as HERRICH-SCHÄFFER'S "Revision der Tagfalter", and apparently independently, yet he was bound, with only prepared butterflies before him, to come to pretty similar results, and he classified essentially according to the number and the origin of the subcostal veins and the presence or absence of a discocellular vein, although he himself pointed out the worthlessness of these two characters. Evidently neither author knew the function and influence of the discocellular vein and they were also unaware that a discocellular which we fail to detect with the aid of our rough appliances is nevertheless frequently present though in a greatly reduced form, or is present in the pupa before emergence. When the wing-stratum is sufficiently firm the discocellular is not only unnecessary but it is even detrimental to the flight, as it makes independent movements of the costal and inner-marginal parts of the wing quite impossible. A slight bend of the wings, particularly of the hindwing, allows the butterfly to steer its course much more conveniently, hence it is especially the more highly developed species that are without a discocellular vein and consequently also even when flying at a great speed never give the same impression of precipitation, haste or exertion as when the inflexibility of the costal and median systems precludes any sailing pose of the wings. Compare the elegant motion of an *Apatura* with the unsteady, jerky flight of a pursued *Charaxes* or a *Prepona*, which in spite of their great strength give almost the impression of moths dashing about and with a far greater expenditure of energy only reach the elevations which an *Apatura* attains without visible effort by an imperceptible bend of the costa and with scarcely appreciable motion of the wings. Moths without a discocellular, e. g. *Actias artemis*, I have seen ascend without trouble in a straight line vertically skywards, whilst Satyrids, which disappear in the blue heavens, rise in corkscrew-shaped gyrations and *Papilio* has to raise itself laboriously with continued flutterings. The arrangement of the subcostal veins is also inadequate to support a classification system, and thus it came about that FELDER included *Eueides* in his Nymphalids but omitted *Heliconius*, thus placing these quite nearly allied genera in two separate families. HERRICH-SCHÄFFER, however, included *Morpho* in his more restricted Nymphalids.

In the meantime later attempts at taxonomy received considerable assistance from the knowledge of the formerly almost entirely unknown larvae. F. MOORE and L. DE NICÉVILLE bestowed special attention on the Asiatic, H. BURMEISTER and W. MÜLLER on the American butterfly-larvae and thus provided a really solid foundation for a new system. E. REUTER called attention to the systematic utility of more exact and more specialized anatomical investigations and E. HAASE harmonized the results of biological research with the conclusions previously arrived at in another way and thus correctly separated off for the first time, under the name "*Acraeomorpha*", the section here accepted by us, in contradistinction to the *Satyromorpha* and *Danaomorpha*. He divided the group into 3 subdivisions, which he named *Heliconini*, *Acraeini* and *Nymphalini*.

These 3 groups are unmistakably somewhat further removed from one another than any 2 neighbouring "subfamilies" out of the number of those into which HAASE again split up the *Nymphalini*. Hence we might more accurately classify HAASE'S 3 groups as subfamilies and the further subdivisions as tribes, so that we obtain the following scheme for the American *Nymphalidae*:

- | | |
|-------------------------------|--------------------------|
| I. <i>Acraeinae</i> . | |
| II. <i>Heliconiinae</i> . | |
| III. <i>Nymphalinae</i> s. s. | |
| A. <i>Clothildidi</i> . | G. <i>Eunicidi</i> . |
| B. <i>Argynmidi</i> . | H. <i>Catagrammidi</i> . |
| C. <i>Vanessidi</i> . | I. <i>Limenitidi</i> . |
| D. <i>Biblid</i> . | K. <i>Gynaeciidi</i> . |
| E. <i>Diademidi</i> . | L. <i>Apaturidi</i> . |
| F. <i>Ageroniidi</i> . | M. <i>Anaeidi</i> . |

In this classification scientific criteria are indeed taken as a basis, but the extent of the difference between the separate groups of section III is not further taken into consideration, as a further classification would not increase the clearness, but rather destroy it. Hence we content ourselves with the above grouping.

The superficial appearance of the collective family of the *Nymphalidae* is so multiform that but little of any value can be said about them as a whole. They agree in having the eyes large and hemispherical, the palpus strong, mostly standing straight out and always extending beyond the head, the antenna quite straight and thickened at the end, the proboscis always developed, the collar often well defined, the thorax oval and high, the abdomen in the ♂ sometimes very short, in the ♀ often much thickened, the forewing strong, triangular, often angled at the distal margin and very frequently with transverse markings in the cell, the hindwing round, often angled, occasionally tailed or lobed. The larvae are as a rule provided with spines, often thick and regular, but sometimes reduced, defective, or even entirely suppressed except for points on the head or tail, resulting in a chequer-like granulation of the skin-surface. The pupa is always attached at the cremaster, mostly hanging down, but occasionally also placed upright and then usually so disfigured by fantastic appendages that it resembles a bird-dropping, a gall or some indefinable dried-up substance. Sometimes it has points, teeth, occasionally gilded cones, spines, filaments, knobs, tubercles on the dorsum or head, wing-like appendages, etc., or it is quite smooth, semitransparent green and resembling small fruits.

The early stages, which were for the most part still entirely unknown to the earlier systematists, in particular DOUBLEDAY and WESTWOOD, we have here considered individually, and practically only where these yield different results have we deviated from the system of the older authors, always keeping in view the aim of our work, which is primarily a practical guide to determination and work of reference, so that, while following the more recent investigations of others, it itself initiates as few changes and reforms as possible.

In their habits the Nymphalids vary as greatly as in their form. We find them as larvae on Dicotyledons and (though only rarely) on Monocotyledons, on trees and on herbs, gregarious or quite singly; living free or in nests, lively and nimble or sluggish and inert. The butterflies inhabit the earth from the equator to the highest latitudes and there is scarcely a remote island on which they are wanting. They ascend in the mountains to the highest slopes, bordering on the eternal snow, and penetrate further into the hot deserts of the tropics than most other groups of butterflies. They travel over wide tracts of land and enliven every clearing in the woods, every river-bank and even fly around rocky crags in the high mountains entirely devoid of vegetation. They feed at flowers, but also very commonly prefer the sap of bleeding trees or are attracted by stinking substances (rotten fruit, cheese, dung-water) or by alcohol and ether. In temperate regions may hibernate and come out from their winter hiding-places in the spring as the earliest insects. But almost without exception they are sun-lovers and do not share the habits of many Satyrids or Hesperids in flying exclusively or principally at night. They present themselves as an evidently natural though very diversified family of considerable geological age, but well adapted and keeping pace with the transformations of their environment.

I. Subfamily: *Acraeinae*.

The Acraeids are a comparatively very small branch of the great Nymphalid stirps and approximate rather closely to the Heliconines on one side and to the lowest groups of the Nymphalids proper on the other. They can easily be recognized by the palpus, the neurulation and the scaling, and the earlier stages have also a very characteristic structure.

Body of the butterfly slender, with tough skeleton; abdomen long, extending beyond the anal angle (i. e. the end of the 2nd submedian vein), towards the base rather strongly narrowed. Antenna beneath scaleless, longitudinally with 2 broad, deep grooves, which are bounded by 3 very sharp longitudinal keels. Palpus slender, either completely clothed with long bristly hairs and only scaled at the sides, or at least on the underside with a stripe of such bristles, between which are placed hardly any scales, the 2nd segment long, distinctly bent in S-shape, commonly somewhat inflated, the 3rd very short, often only as long as broad. The palpal bristles, as well as the hairs on the breast and legs, distally surrounded with short pointed teeth, so that in profile they recall feathers. Forelegs much aborted, bearing a small number of bristles; in the ♂ the foretarsus consists of 1 to 4 joints and, like the foretibia, varies very much in length in the different species or groups and is not even constant within the species. In the ♀ the foretarsus is 4-jointed, more constant in length and structure than in the ♂, on the underside at the ends of the joints with strong spines and tufts of sensory bristles. Foretibia and foretarsus of the ♂ never with such long pencil-like hairs as in the Nymphalids, often almost scaleless, especially the tarsus. Middle and hindtibiae and tarsi without long hairs and more sparsely scaled or not at all, on the underside with stronger, on the upperside with weaker spines or bristles, which are always numerous. Claws with large, broad, obtuse tooth, without pulvillus and free paronychium, in all the ♀♀ and in a small number of species also in the ♂ more or less symmetrical, on the contrary in the

♂♂ of nearly all the American and the majority of the Old World species the outer claw reduced and mostly almost rectangularly bent.

Wings always entire-margined, the apex and hinder angle of both wings rounded, especially the anal angle of the hindwing. Scaling very variously developed; in non-transparent wings the scales are toothed at most in the distal part of the wing and on the veins, but in *Planema* the underside of the hindwing with the exception of the base bears toothed scales; in transparent species the scales are reduced in number and size and are either rounded and upright, or narrow, forked or hair-like. The veins bear on the under surface long stiff bristles, at least in the abdominal region of the hindwing. The upper radial vein (with the exception of *A. mirifica*) in both wings arising near the anterior angle of the cell or stalked with the subcostals, 2nd discocellular curved, cell of the hindwing closed.

In this description no notice is taken of the African *Pardopsis punctatissima*, which is not a true Acraeid. Cf. vol. XIII, p. 288, pl. 53 a.

The larvae bear 6 rows of spines, which are adorned with stiff simple bristles. The head is hairy, but has neither spines nor horns. They are mostly gregarious until shortly before pupation and many *Actinote* species feed on lower plants and shrub-like herbs, especially Eupatorium and allied Composites, as well as Mikania, Evalus, Veronia, Boehmeria, etc. The pupa is likewise very characteristic; it is straight, almost cylindrical or dorsally convex, between thorax and abdomen only quite slightly constricted, and as a rule chalk-white; on the wing-cases black stripes corresponding to the neurulation of the wings and on the dorsum two rows of spines, which commonly vary according to the species.

The butterflies are found especially on clearings and at the edges of woods and some species allied to *A. thalia* sometimes occur in such abundance that they hang on the bushes in countless numbers. Such forms are often so sluggish that when placed on the hand they remain there or if shaken out of the bushes slowly crawl up into them again (SEITZ). Other species on the contrary fly singly and many so high above the ground in the tops of the trees that they are difficult to catch.

The distribution of the Acraeids in America is peculiar. They occur from Mexico to Buenos Aires and South Brazil, but the species are by no means uniformly distributed. The mostly dense-scaled blue forms with red-yellow, yellow or white markings, are all confined to the Andes; not one of the numerous species of the *abana*, *hylonome*, *neleus* and *ozomene* groups descends to the lowlands east of the Andes or occurs in the mountains east of the Orinoco or in South-East Brazil. On the other hand the *thalia* group has its centre of distribution in South-Eastern Brazil, Paraguay and Argentina, and the large Amazon region, from Pará to Iquitos, otherwise so rich, produces only one or two species of *Actinote* and these are forms of the *thalia* group.

1. Genus : **Actinote** Hbn.

The American Acraeids differ from the Old World forms in the structure of the wings. In all the species the veins on the underside of the hindwing are covered with stiff bristles and the upper submedian is developed proximally as a fold and distally as a vein and bristled like the other veins; the 1st subcostal of the forewing always arises proximally to the end of the cell, whilst the common stalk of the other 4 arises from the angle of the cell; the 1st radial is placed quite near to the subcostal stalk or branches off from it. In the only Old World Acraeid in which the upper submedian of the hindwing is developed distally as a vein, *A. mirifica*, the 2nd palpal joint is inflated and the subcostal of the hindwing has a much more proximal position than in *Actinote*. The wings of *Actinote* have neither the punctiform markings nor the marginal curves which are found in the majority of the Old World species.

According to the structure of the wings as well as the habitus *Actinote* splits up into two sections, one of which is composed of several natural, sharply differentiated groups of species. The differences between the species are commonly very slight and in many cases it is not yet possible, in the absence of sufficient material, to come to a satisfactory conclusion as to the specific right of the forms. The study of *Actinote* is rendered still more difficult on the one hand by the often very strong individual and geographical variability and on the other by the remarkable uniformity of the copulatory organs. The larvae and pupae, which, however, are unfortunately only known in a few cases, seem often to show more striking specific characters than the imagines.

Section I. On the under surface the space between the costal margin and costal vein in the distal half of the forewing is scaled, not adorned with numerous bristles; hindwing always with a central row of bristles in the cell; all the bristles on the veins of the forewing and at the distal margin forked. — Confined to the Andes south of Bolivia and the Sierra de Mérida of Venezuela; only one species in Central America, which is distributed northwards to Mexico.

Subsection 1. Under surface of the hindwing with numerous long, scattered bristles between the veins.

a) *abana* Group.

Only three species show this peculiar clothing.

radiata. **A. radiata.** Sepia-brown to black; forewing with a pale orange-coloured or somewhat reddish band, broken up into spots by the veins and running in a curve from the costal margin to the hinder angle, much narrowed posteriorly and placed entirely outside the cell. On the underside the band is somewhat more rose-coloured than above, the apex of the forewing and the entire hindwing regularly striped, the stripes somewhat more brownish than the band. Ecuador and Peru, will probably also be found in Bolivia. The ♀ is apparently not known. — **radiata** Hew. (81 a). Wings sepia-brown. Eastern Ecuador. — **intensa** Jord. Wings nearly black. Band narrower, with more distinct rose-coloured tone. Eastern Peru.

erinome. **A. erinome.** Brown-black, slightly tinged with bluish; abdomen beneath with reddish stripe. Forewing with orange-red discal band from the costa to the lower median; often also a costal stripe, the whole cell with the exception of the extreme apex and some postcellular spots of the same colour as the band. These markings are reproduced on the under surface; apex of the forewing and the whole hindwing beneath uniformly striped with yellowish grey. The ♀ paler than the ♂ and somewhat larger. Ecuador?, Peru and Bolivia. — **erinome** Fldr. (81 a). Forewing only with discal band; in some examples a reddish costal stripe is indicated. *sciana*. Central East Peru; FELDER's locality "Ecuador" required confirmation. ab. **sciana** Jord. is unicolorous brownish black above; the band of the forewing distinctly present beneath, very much reduced above. — **carabaia** Jord. Forewing with costal stripe and usually on both surfaces, or at least beneath, with yellowish red cell-spot. South-East Peru. — **testacea** Salv. & Godm. (= *byzia* Hew., *aethilla* Hpffr.) (81 a). The yellowish red colour fills up the cell with the exception of the extreme apex and usually extends distinctly below the cell as far as the lower median vein. Occasionally the discal band is joined to the postcellular spots, so that a black discocellular spot is separated off. Bolivia.

capnodes. **A. abana.** Wings slightly transparent, with faint blue gloss; upper surface sepia-brown; forewing with large pale orange area, extending from the base to beyond the cell and to the hinder angle, but very commonly reduced from the base onwards or even replaced by a discal band; the veins intersecting the area more or less black. Beneath the veins quite narrowly black, the apex of the forewing and the whole hindwing yellowish grey, striped with black, the area on the forewing less often reduced and then not so strongly as above and distally never incised at the veins. ♀ paler and larger than the ♂. Columbia, Ecuador and Peru; two geographical forms. — In **capnodes** *subsp. nov.*, from Frontina, province of Antioquia in Colombia, the yellow colour on the forewing is confined to a broad discal band, which only just crosses the lower angle of the cell, is for the most part almost equal in breadth and then pointed towards the hinder angle. The band is about 2 or 2½ times as broad as the blackish brown apical part of the wing and is so strongly suffused with smoky brown that it scarcely stands out at all from the ground-colour. On the under surface, on the other hand, it is almost as yellow as in the following form; hindwing and apex of the forewing beneath more yellowish than in the latter. The ♀ larger than the ♂ and the discal band yellow and well defined above also. *abana*. 2 ♂♂ and 1 ♀ in the British Museum. — **abana** Hew. (81 a). The yellow area of the forewing extended to the base or, if reduced, broken up into stripes. East Ecuador and East Peru, known to me southwards as far as the Rio Pozuzo.

Subsection 2. Under surface of the hindwing without scattered bristles on the disc between the veins.

a) hylonome Group.

Under surface of the hindwing with a number of bristles in and below the cell besides the bristles on the cell-fold, the veins and the reduced submedian vein.

hylonome. **A. hylonome** Dbl. (82 b). Black, wings slightly transparent; forewing with white band, composed of 4 spots; the 1st spot quadrate, in the cell, the 2nd small, in the angle before the base of the upper median vein, and the 3rd and 4th larger, between the upper median vein and the submedian fold, no spot distally to the end of the cell. Beneath the band somewhat broader, the apex of the forewing and the whole hindwing striped with yellowish and with black, the stripes in the middle of the hindwing less distinct. ♀ larger than ♂, with broader band, under surface paler, usually with whitish scaling distally to the end of the cell. The abdomen is usually in both sexes spotted with lighter or darker yellowish beneath, occasionally quite black. — A common species in Venezuela and Colombia.

euryleuca. **A. euryleuca** Jord. (82 b). ♂ larger than that of *hylomene*, with broader band, which runs so far distally that the discocellular veins are placed inside it, the spot between the two median veins (the last but one) the largest, reaching nearly to the distal margin. Under surface uniform yellow-grey with black stripes; the band broader than above. Upper radial of the hindwing from the cell or stalked with the subcostal, the bristles in and beyond the cell of the hindwing (beneath) more numerous than in the preceding species. Moyobamba, North Peru, only a few ♂♂ known to me.

b) neleus Group.

The bristles on the underside of the hindwing confined to the cell-fold and veins. Upper radial of

the forewing stalked with the subcostals, rarely from the upper angle of the cell, abdomen for the most part red or yellow (cf. also *A. callianthe*).

A. neleus Latr. (= *nelea* Godt.; ♀ = *are* Hew., *edulis* Weym.) (81 b, c). Abdomen red. Sexes very similar. *neleus*. ♂ blue-black, very strongly glossy above, the costal margin and the distal half of the forewing as well as the distal margin of the hindwing slightly glossy; under surface brown-black, base of the hindwing pale yellow. In some ♂♂ from Zamora (Ecuador) the forewing bears a red cell-spot on the under surface: ♂ ab. **haemera** *haemera*. ab. nov. The ♀, which in "STÜBELS Reise" was erroneously described and figured as ♂ under the name *edulis*, has only a slight blue gloss and bears on the forewing a broad yellowish white median band, which is placed proximally to the end of the cell and runs obliquely to the hinder angle. Beneath the apex of the forewing and the entire hindwing are striped with yellowish grey and the forewing bears a distinct black, oblique discal band, which reaches neither the costal nor the inner margin and is placed distally to the median band. — A pupa-case of this species sent to us by FASSL is grey-yellow, not chalk-white; the black subdorsal spines of the abdomen are only about half as long as the distance between the two spines of a single segment; the black markings are very extended on the dorsum of abdominal segments 2 and 3 and the following segments bear an interrupted black median line; the lateral markings are numerous and more or less regularly divided, not united into a longitudinal stripe. — *A. neleus* is one of the commoner species. It occurs both in the east and west of Colombia and Ecuador and apparently, unlike the following species, does not vary geographically.

A. alcione. Wings above black, in some forms uniformly tinged with blue, in others entirely without blue, never strongly glossy; with or without yellow or orange area on the forewing. The abdomen usually red, occasionally grey-yellow, in some dark, smoky forms more or less extended black above. The ♀ is similar to the ♂. Distributed from Colombia to Bolivia in numerous geographical forms. The extremes are so different in appearance that one might take them to be specifically separated. Yet the forms appear strictly to represent one another geographically, and moreover they shade so gradually into one another that for the present I can only regard them as forms of one species. Possibly, however, *theophila* occurs independently together with *alcione*, in which case it must rank as a species. We are not yet well informed as to the distribution of the butterfly in North Peru; the material from those parts is very small in collections, and moreover the physiological conditions seem often to vary there even at short distances and corresponding differences to appear in the clothing of the butterflies. The earlier stages of *A. alcione* are not known. — **varians** *varians*. Jord., from Central and West Colombia, occurs in three forms which fly together: f. **cyanea** form. nov. Upper *cyanea*. surface of both wings uniform blue, without a trace of markings. This common form probably only occurs in the male. It resembles *A. neleus*, but lacks the strong gloss of that species. In f. **varians** Jord. the forewing above bears a washed-out, oblique yellowish flesh-coloured band in the basal half; the ♀ is larger than the ♂ and the band is somewhat less reddish in tone. In f. **extensa** form. nov. the band is widened, more sharply *extensa*. defined and occupies $\frac{1}{2}$ or $\frac{2}{3}$ of the basal half of the wing, but also remains distant from the base; rest of the upper surface as blue as in f. *varians* and f. *cyanea*. Intergrades between the 3 forms are of common occurrence; on the underside examples of f. *cyanea* also often bear a flesh-coloured stripe before the hindmargin and f. *varians* and f. *extensa* have a similarly coloured narrow discal band. This band is usually indicated in f. *cyanea* also and distinct traces of it are visible in exceptional cases on the upper surface of f. *extensa*. — **elatus** Druce flies at Paramba in West Ecuador. The upper surface much less distinctly blue than *elatus*. in the different forms of *varians*. The forewing always has a pale orange median area on the upperside, reaching from the lower angle of the cell to about halfway to the base, but varying somewhat in extent; beneath the area is mostly much paler, almost straw-coloured, and nearly reaches the base and the hinder angle; a narrow discal band of the same colour is at least indicated and traces of it are occasionally found on the upper surface also. Abdomen paler red than in fresh specimens of *varians*. ROSENBERG took numerous specimens of this subspecies during his stay in Paramba in March, April and May, at elevations of somewhat over 1000 m. — **sarsanda** Druce (82 d). The yellow area is so densely covered with smoke-colour above and be- *sarsanda*. neath that only a few scales have retained a pure yellow colour, though individual examples incline towards *elatus*; the discal band is indicated beneath or may be entirely absent. Abdomen broadly black. Chimbo, West Ecuador, met with by ROSENBERG in large numbers at 300 m. in August. — **subelatus** subsp. nov. (81 c). *subelatus*. Only two or three ♂♂ are known to me: Los Llanos (type) and Balsabamba, Ecuador. These specimens form the transition from *elatus* to *melina*. The yellow area is somewhat deeper coloured than in *elatus* and as in that subspecies is placed at a distance from the base, but there is always a distinct stripe immediately before the hindmargin of the wing, while in *elatus* this is at most merely indicated; a short discal macular band present. Beneath the hindwing and the distal margin and apex of the forewing are still more strongly striped with grey-yellow than in *sarsanda* and hence the black discal band of the forewing stands out sharply. The under surface of our figure is somewhat too reddish and the black discal band too near the distal margin. — **melina** Jord. The pale orange area is more sharply defined than in *subelatus*, extends nearly to the *melina*. base and is cut off sharply at the anterior margin of the cell; discal band more distinct. Hindwing and apex of forewing darker beneath than in *subelatus* and *alcione*. Rio Negro in North-East Peru (not to be confused

theophila. with the large tributary of the Amazon of the same name); only 2 ♂♂ in the Tring Museum. — *theophila* Dogn. (81 c). Perhaps specifically distinct. Abdomen orange, above rather broadly black. The area of the forewing orange, extending from the base to the lower angle of the cell and on the disc beyond it; a narrow discal macular band is often present and many examples have also a spot between the apex of the cell and the band. South-East Ecuador: Loja, Zamora, etc. — *alcione* Hew. (82 d). Quite similar to *melina*, but the area of the forewing somewhat larger and, like the narrow discal macular band, very pale grey-yellow, paler than in any other form of this species. The under surface lighter than in *melina*, densely striped with gray-yellow. North-East Ecuador: Rio Napo. — The 4 following forms perhaps constitute a separate species. In them the discal band of the forewing is more strongly developed and is orange-red, like the large proximal area. In *salmonea* Jord. the discal band is about $\frac{1}{2}$ to $\frac{1}{3}$ as broad as the black interspace which separates it from the proximal area. The latter extends to the base of the upper median vein, occasionally there is also a spot before this vein. The dark parts of the upper surface have a faint blue tinge. Found in North Peru, to the south-east of Chachapoyas. — *sodalis* Btlr. (81 d), from Central East Peru (Ucayali, Chanchamayo, etc.), is somewhat brighter orange-red than *salmonea* and the discal band on the whole somewhat broader. — *messerres* Jord., from South-East Peru (Carabaya), has the underside of the hindwing somewhat lighter than in *sodalis*, and in particular the wing is less broadly blackish round the apex of the cell. — *corduba* Hew. (81 b), the form from Bolivia, is distinguished by the basal area on the upperside of the forewing not extending to the upper median vein, while on the other hand the discal band reaches the lower median vein.

c) ozomene Group.

The bristles on the underside of the hindwing confined to the cell-fold and veins. Upper radial of both wings from the cell. Abdomen black, beneath often light-spotted (in the ♀ of *A. callianthe* largely red).

leucomelas. **A. leucomelas** Bates (= *orizava* Reak., *leucomelaena* Dew., ♂ = *nox* Bates) (81 d). ♂ above black-blue; forewing beneath with large yellow-white proximal area, extending to the apex of the cell; hindwing with small yellow-white spot at the base. ♀ bluish black, with yellow-white macular band in the middle of the forewing; beneath the band much broader and the veins intersecting it less broadly black. — A purely Central American species, which is distributed from Mexico to the Chiriqui in Panama.

A. ozomene. Represents the preceding species in Colombia and Ecuador; easy to distinguish by the yellowish red colour of the basal area of the forewing above and beneath. ♂ above black-blue; the orange-red basal area either unicolorous or distally pale yellow; beneath the basal area is more or less extended pale yellow, but always remains yellow-red at the base. The area is very variable in size above, but beneath always extends nearly to the lower angle of the cell. ♀ bluish black, with large yellow-red proximal area, which is distally pale yellow and above more or less reduced from the base onwards, but at least beneath extends to the base; on the under surface the hindwing and the distal part of the forewing dirty yellow-grey, striped with black. The larva, of which A. H. FASSL has sent us two blown examples, is almost pure black above and light (probably in life green-yellow) beneath; the two colours sharply defined. Head and thoracic legs black; the lateral spines placed in the light part light at the base, the others dark with lighter base and pale bristles, and about three times as long as the distance between two dorsal bristles on the same segment. Pupa chalk-white, with black spines and black markings; the spines longer than the space between the two spines on the same segment. The spines are placed at the upper edge of a longitudinal band of black markings, a similar band immediately below the stigmata, and on the ventral side three posteriorly opened ellipses; the spaces between these bands with a few fine streaks and dots of the same colour; cremaster entirely black. The species is very common. — *ozomene* Godt. (81 e, f; the names of 81 e fig. 4 and 5 are reversed). ♂: underside of the hindwing with small pale yellow basal spot, the rest of the hindwing without yellowish stripes. ♀: underside of the hindwing and of the apex of the forewing dirty grey-yellow, striped with black. In ♂-ab. *calimene* Rebel and in ♂-ab. *granadina* Rebel the proximal area of the forewing beneath is entirely red, in ab. *granadina* in addition the base of the hindwing more broadly yellow. *reducta*. The red basal area of the upper surface is reduced in ♂-ab. *reducta* ab. nov. to a spot only 5—7 mm. in length. *ozomene* occurs in Central and West Colombia and is common in "Bogotá collections", but I am not aware whether it is really found in the East Cordillera of Colombia. — *gabrielae* Rebel differs in the ♂ in having somewhat less of the blue gloss. In the ♀ the brown-red colour of the proximal area of the forewing above is somewhat reduced. West Ecuador: Balsabamba, Agua Santa, Paramba. — *cleasa* Hew. (= *catopasta* Jord.) has even less blue gloss on the upper surface of the ♂. Beneath the hindwing of the ♂ is striped with yellow-grey with the exception of a central band; some examples, however, show scarcely a trace of these stripes (except for the basal patch). The red-brown on the upperside of the forewing in the ♀ is strongly reduced and sometimes almost entirely absent, in which case the proximal area above is fused into a macular band. In south-western and southern Ecuador: Chimbo, Zaruma, Zamora.

A. stratonicæ. Black, with slight blue gloss. ♂: forewing with large orange median area, which at least

beneath reaches the base in the cell, leaves the hindmargin of the wing free and encloses a black discocellular spot; under surface of the hindwing in the basal area striped with orange-red, the stripes sometimes partly grey-yellow, gradually disappearing distally. ♀ larger and paler, the median area of the forewing orange or pale yellow, in the latter case proximally washed over with red-brown and above not reaching the base; underside of the hindwing almost uniformly striped with orange-red, on the disc often grey-scaled. Earlier stages unknown. Distributed from the Sierra de Mérida in Venezuela to Ecuador. — **meridana** Jord. ♂: *meridana*. the orange area of the forewing extends nearly to the base above also, the stripe of this area below the lower median vein is continued basad beyond the base of this vein, but is usually interrupted by a black patch. Beneath the area is grey-yellow with orange-red base; distal half of the hindwing almost entirely without stripes. ♀: the median area of the forewing pale yellow, the basal area as far as the lower median black, washed over with brown-red, the stripe of the median area placed between the two median veins not interrupted, the spot below the second median about 6 mm. in length. Mérida, Venezuela. — **marthae** Jord. *marthae*. ♂ as the preceding, but the stripe of the area of the forewing below the lower median vein more strongly interrupted and hence the distal part of the stripe shorter; the underside of the hindwing is also more uniformly striped. In the ♀ the black spot, which projects from the hindmargin obliquely towards the cell at the proximal side of the pale yellow area, extends as a band beyond the lower median as far as the cell, the basal area proximally to this black band brown-red. Sierra de Sta. Marta, North Colombia. — **acipha** *acipha*. Hew. (82 a, b). ♂: the orange area does not extend so nearly to the base as in the preceding forms, in particular the proximal part of the stripe below the cell is wanting, and beneath the base of the forewing is somewhat less extended brownish orange. In the ♀ the brown-red scaling proximally to the pale yellow median area on the forewing above is merely indicated, and on the underside also the red-brown is more restricted than in the preceding forms. East Cordillera of Colombia, rather common in "Bogotá collections"; from 400 m. upwards. — **stratonice** (82 a). On the whole larger than the preceding forms, the sexes almost *stratonice*. alike in colour, and the orange area beneath but little paler than above and on both surfaces larger and darker than in *acipha*, etc. Central and West Cordilleras of Colombia. In the only ♀ before me from the West Cordillera the area of the forewing on the underside is nearly as pale from the apex of the cell onwards as in *acipha* ♀; our two ♂♂ from the same locality (Rio Dagua, collected by W. F. H. ROSENBERG) agree with the specimens from the Central Cordillera. The ♀ forms a transition to the next subspecies. — **diversa** *diversa*. *subsp. nov.* Two ♂♂ and one ♀ from East Ecuador in the British Museum, type from Baños (Rio Pastaza). The ♂♂ are very little paler than *stratonice*, but the hindwing above has very distinct traces of an orange colour in the basal half. ♀ larger, paler, area of the forewing distally yellow, this colour proximally not sharply defined on either surface, hindwing with traces of orange stripes before the cell; under surface paler, hindwing striped with grey, in the cell and at the distal margin blackish. — **aereta** Jord. One ♂ from *aereta*. Zamora, South-East Ecuador. The discocellular spot of the forewing very large and joined to the costal margin; the orange area reaching to the base and quite near to the hindmargin, beneath paler distally than proximally. Cell of the hindwing beneath striped with yellow-grey. — **carica** Weym. Not known to me *carica*. in nature. Quite similar to *aereta*, perhaps identical with it, though according to WEYMER the stripes on the underside of the hindwing are red. 5 ♂♂ were found by STÜBEL in North Peru between Tambo Almirante and the Rio Negro at altitudes of 860 to 2000 m. The figure, however, certainly represents a ♀.

A. adoxa Jord. This small species is based on a single ♂ from "Bogotá", which cannot be referred to *adoxo*. any known species. Black, with very faint blue gloss, the markings yellowish salmon-colour (similar in tone to those of *A. callianthe*). Forewing with the distal margin more uniformly rounded than in *A. stratonice*; a large area, fading out at its margins, extends from the anterior edge of the cell to the lower submedian, commencing about 5 mm. from the base and widening to a little beyond the apex of the cell; a black discocellular spot adjoins the black costal margin. Beneath the area of the forewing is larger, better defined, and the discocellular spot is entirely enclosed by it; hindwing in the basal half rather strongly striped with reddish, the stripes distally weak, distal part of the forewing almost without stripes. Length of the forewing 23 mm. — Resembles *A. diceus diceus*, but the hindmargin of the forewing is much shorter.

A. callianthe. One of the most beautiful species. ♂ above velvety black; on the forewing a yellowish salmon-coloured or ochre-red area, which does not reach the base or the hindmargin and anteriorly terminates at the subcostal; the bordering of this area (except the costal margin) and also the hindwing from the base to the disc strongly glossy blue, this colour rather sharply defined. Under surface of the hindwing likewise characteristically coloured; the basal area is greenish yellow (dark wax-yellow) to the apex of the cell and usually also nearly to the anal angle, whilst the rest of the wing is of a reddish brown colour. The ♀ quite unlike the ♂; above brown-black, with rather strong blue gloss from the base to the band of the forewing and to far beyond the cell of the hindwing; forewing with dirty white oblique band, which enters the lower angle of the cell, does not quite reach the costal margin and hinder angle and is broader beneath than above. On the under surface of the hindwing the basal area is of a similar yellow to that of the ♂, but not so sharply defined, as the distal area is light-striped; abdomen of the ♀ for the most part red. Distributed from Venezuela to Ecuador. — **alla** Jord. The red area of the forewing narrowed into a band, which is proximally cut off by the base of the lower median, so that the part of the band placed in the cell is almost quadrate. Beneath, however, the area almost reaches the base of the wing. Mérida, Venezuela; only 1 ♂ known to me. — **callianthe** Fldr. (81 d, 82 b). ♂: the area of the forewing paler than in *alla*, extending *callianthe*.

basewards far beyond the origin of the lower median vein, triangular, distally rounded, the black discocellular spot distinct. Many specimens have traces of red on the upperside of the hindwing before and in the cell. ♀ with distinct grey striping on the upperside of the hindwing about halfway between cell and distal margin. East Cordillera of Colombia; rather rare, especially the ♀. — *amoena* *subsp. nov.* (♀ 81 d, as *callianthe*). ♂: the patch on the forewing deeper red than in *callianthe*, similarly shaped, but not extending beyond the apex of the cell, the discocellular spot consequently almost entirely confluent with the black distal area. Beneath the patch as in *callianthe*, but much redder. The hindwing of the ♀ has no stripes on the upperside; the band of the forewing is posteriorly somewhat shorter than in *callianthe* and at the lower angle of the cell somewhat broader; on the under surface the band is distally somewhat more distinctly bordered with black and the hindwing is more conspicuously blackened distally to the cell. West Cordillera of Colombia, found by A. H. FASSL in the Rio Aguaca Valley at elevations of 2000 m. The species flies high and very swiftly and is difficult to catch. — *rufa* *Jord.* ♂: the patch on the forewing is red-ochre, reaches much nearer to the distal margin of the wing than in the other forms, but distally to the discocellular spot there are only a few red scales and the stripe below the lower median is basally much more abbreviated than in *amoena* and *callianthe*. The basal area of the hindwing beneath paler yellow than in the preceding forms and the stripes between cell and abdominal margin indistinct. Rio Zamora, South-East Ecuador, 1800 m., 1 ♂ found by SIMONS in May. The specimen is not in good condition and this is perhaps the reason why the blue gloss is less strong than in the other forms.

A. naura. A small species; breast and base of the hindwing beneath with ochre-red spot, a spot of the same colour also at the costal margin of the forewing. ♂ Forewing with ochre-red triangular basal area, which does not reach the apex of the cell and is sometimes reduced to a cell-spot. Hindwing with red patch in and below the cell and a row of red discal spots; these markings very variable and often entirely absent. Under surface of the forewing similar to the upper, the red area paler; the hindwing and apex of the forewing striped with yellowish grey, with nebulous dark discal band, the cell of the hindwing almost entirely filled in with yellowish grey. ♀ much larger than the ♂, paler. Venezuela and Colombia, rather rare in collections. — *naura* *Druce* (= *ozinta* *Schaus*). Upperside with rather strong blue gloss. Area of the forewing reduced to some subbasal spots, of which the cell-spot is the largest. Forewing more rounded than in the following form. *chea.* ♀ quite similar to the ♂. Mérida, Venezuela. — *chea* *Druce* (81 b). Upper surface with slight blue gloss; the red area of the forewing large, many examples with traces of a red subapical band; markings of the hindwing sometimes united into a rather large central patch, sometimes almost obsolete. In the ♀ the area of the forewing is much paler, at the hinder angle a reddish grey area, from which a narrow macular band, either distinct or very indefinite, runs to the costal margin in a uniform curve; markings of the hindwing reddish grey, more extended than the red markings of the ♂, the abdominal area in particular is also light-striped. Beneath the whole hindwing and an anteriorly broad distal border on the forewing are yellowish grey, finely striped with brown-black. Colombia, in the East Cordillera, found by A. H. FASSL at Pacho (2200 m.).

trinacria. *A. trinacria* *Fldr.* (81 a). Smaller than *A. naura*, the veins intersecting the triangular red area on the forewing somewhat more broadly black, the hindwing without red markings. Beneath the forewing usually bears one or two red spots just distally to the end of the cell, while in *A. naura* a red spot further distad is usually traceable outside the blackish discal band. ♀ unknown. — Colombia. This species is received in "Bogotá collections" and probably occurs in the East Cordillera; more exact localities are not known to me.

tenebrosa. *A. tenebrosa* *Hew.* (82 a). Only a few ♀♀ known; possibly belongs to *trinacria* or *segesta*. Black-brown with slight blue gloss. Forewing with reddish—orange oblique band running from the costa across the apical part of the cell to the hinder angle, where it joins a narrow discal band of the same colour; these markings indistinct above; beneath better developed, the proximal band in particular much broader, hindwing and apex of the forewing yellow-grey, the discal band of the forewing gradually shaded off distally, hindwing with dark nebulous band about the apex of the cell. — Ecuador.

segesta. *A. segesta* *Weym.* (= *dognini* *Schaus*) (82 b). Much larger than *trinacria*, resembling it above. Beneath the hindwing and the distal border of the forewing are striped with reddish; the scaling of these stripes is condensed into a very narrow band at the distal side of the black discal band of the forewing. ♀ similar to the ♂, larger and somewhat paler. — In eastern Ecuador: Huamboya, Zamora, Loja.

flavibasis. *A. flavibasis* *Jord.* (= *diceus* *auct.*) (81 e fig. 4, ♀, erroneously called *ozomene*, 81 g ♂). The material which I have been able to compare since sending off the manuscript of the *Acraeinae* for WAGNER's Lepidoptorum Catalogus makes it probable that the forms enumerated there under *diceus* and *callianira* are geographical races of one species, with the exception of *flavibasis*, which I must now treat as an independent species. This common *Actinote* in "Bogotá collections" does not seem to be confined to the East Cordillera of Colombia, as WEYNER states in "STÜBELS Reise" that this species with yellow base (which he erroneously took for *diceus*) occurs in the Central Cordillera together with the form with red-striped under surface (the true *diceus*). The sexes are similar. ♂: the patch on the forewing orange; no discal band above, while

beneath, on the other hand, this is occasionally more or less distinctly developed: ♂-ab. *fasciata* *ab. nov.* *fasciata*. Hindwing beneath with yellow basal area, striped with black; rest of the hindwing, as well as the distal part of the forewing, at most with traces of stripes. The ♀ much larger than the ♂, the patch on the forewing similar, upper surface usually suffused with black proximally. On the underside the whole hindwing and the distal part of the forewing clay-yellow, striped with black, the yellow scaling especially dense in the cell and at the base of the hindwing; forewing with broad black band, which enters the extremity of the cell and reaches neither costal margin nor hinder angle; at the distal side or even inside the band mostly reddish scales, which often form a narrow band, sometimes distinct on the upper surface also.

A. diceus. Blue-black, abdomen beneath often reddish. ♂: forewing with large triangular proximal area, which does not reach the apex of the cell and varies from orange-red to rose-red; the discal band is always present at least beneath and is placed much nearer to the extremity of the cell than to the apex of the wing. Hindwing above without markings, at most in aberrant examples with traces of red spots. The ♀ paler and much larger than the ♂, similar to it in colouring, or the basal area of the forewing above darkened or suppressed and the always broad discal band yellow or white. Colombia to South-East Peru. The earlier stages unknown, although the species is in many places one of the commonest butterflies. LATREILLE's description of *diceus* is very clear. GODART, however, has mixed up several species under the name (changed into *dice*) and later authors (probably in consequence) have often misidentified the species. It is worthy of mention that the part of HUMBOLDT and BONPLAND's "Recueil" which contains LATREILLE's description of *diceus* as well as the excellent plate (pl. 42) is wanting in most examples of the work and hence has probably seldom been compared. — *amida* Hew. (♀ = *theogonia* Weym.) (81 h). ♂: discal band of *amida*, the forewing broad, above scarcely paler than the proximal area, beneath, however, entirely yellow or only proximally slightly reddish. In the ♀ the basal area is red-brown above, suffused with black, beneath purer red; the discal band yellow above and beneath. Sierra de Mérida in Venezuela and East Cordillera of Colombia. — *diceus* Latr. (♂ = *dice* Godt. part., *aurantia* Weym., *olgae* Rebel; ♀ = *albofasciata* *Therese* nec Hew.) *diceus*. (81 f). ♂: forewing at least beneath always with discal band more or less strongly developed, hindwing beneath striped with rose-red, this striping mostly confined to the basal part, but often occupying the entire wing. The examples may be divided into 3 groups according to the development of the discal band: f. *sinefascia* *form. nov.*, above entirely without discal band; f. *diceus* Latr., the discal band more or less *sinefascia*, developed above; f. *confluens* *form. nov.*, the discal band beneath broadly confluent with the basal area, *confluens*, so that a black discocellular spot is isolated posteriorly and at the sides. These individual forms intergrade one into another. In addition examples occur in which the hindwing bears small red spots in and before the cell: ♂-ab. *rubrosticta* *ab. nov.* WEYMER's description of *aurantia* fits f. *diceus*, but the figure given in STÜBELS "Reise" seems to be incorrect. The ♀ of *diceus* (81 f) is blue-black above and bears on the forewing a narrow yellow-white discal macular band; on the under surface the red basal area is present, but very much reduced. Central Cordillera of Colombia; both sexes found by A. H. FASSL on Monte Tolima at an altitude of 1700 m. Fresh ♂♂ are bright red. — No *diceus* form is yet known from the West Cordillera of Colombia or from West Ecuador. — In north-eastern Ecuador flies *napensis* Jord. ♂: upper surface with much weaker *napensis*, blue gloss than in *diceus*, the basal area reduced from its anterior part, the discal band narrow. Rio Napo. — *albofasciata* Hew. (♂ = *rosaria* Weym.) (81 g ♂). ♂: paler rose-coloured than in *diceus* and the blue gloss *albofasciata*, as weak as in *napensis*, the basal area reduced as in *napensis*, but the discal band always broad. The discal band of the ♀ white, without a distinct yellow tone, somewhat straighter and distally less strongly notched at the veins; underside of the abdomen red. In south-eastern Ecuador: Rio Zamora, Rio Pastaza, etc., and perhaps also in North-East Peru. — *thespius* Weym. ♂ as *albofasciata* ♂, but the markings of the *thespius*, forewing above orange-red, not rose-coloured, the discal band beneath yellow, posteriorly widened and here usually united with the basal area above and beneath, the underside of the hindwing striped with grey-yellow at the base. The ♀ figured in "STÜBELS Reise": basal area red-brown, discal band light yellow, running in a curve from the costal margin to the hinder angle; hindwing above grey-blue, with the exception of the distal margin. Central North Peru: district of Chachapoyas. — *callianira* Hbn. (81 h). ♂: markings *callianira*, of the forewing above bright orange-red, discal band beneath distally yellow, sometimes entirely red, sometimes entirely yellow, rarely confluent with the basal area, the striping of the hindwing beneath on the disc somewhat more distinct than in *thespius* ♂. The ♀ similar to the ♂, paler and larger, on the upper surface with the basal area and discal band orange-red, the latter beneath usually for the most part yellow. Central East Peru: Pozuzo, Chuchuras, Chanchamayo. *ab. stenina* Jord. may be retained for examples in which the *stenina*, discal band is entirely yellow beneath; the name was originally erected for the Chanchamayo specimens, which, however, do not form a well defined subspecies. — *euris* Jord. In both sexes the black band which on the *euris*, forewing separates the basal area from the discal band is broader than in the preceding form, the discal band beneath is entirely orange-red, at most with a slight yellow tinge. Underside of the hindwing entirely yellowish striped with grey, a short median band from the costal margin to the lower angle of the cell and a narrow, sharply defined marginal band black-brown. South-East Peru: Marcapata, Cuzco district, Carabaya.

A. jucunda Jord. (81 h) represents the preceding species in Bolivia, but has the cell of the forewing *jucunda*, longer. Pronotum with orange spot on each side. Markings of the forewing similar to those of *A. diceus* *euris*, but more yellowish, the discal band broken up into spots, and in the ♀ the basal area almost entirely

suppressed above, hindwing without distinct blue gloss. Underside of the hindwing and apex of the forewing in the ♂ striped with brownish orange, in the cell somewhat more grey, in the ♀ the stripes grey, the orange-red discal band of the forewing in the ♀ not sharply defined distally. — East Belivia.

griseata. **A. griseata** *Bltr.* (♀ 81 b, abdomen erroneously spotted with orange). This species flies in East Peru in places where *callianira* also occurs. ♂♀: wings narrower than in *callianira*, the discal band of the forewing posteriorly not widened, distally more regularly notched at the veins, hindwing paler bluish grey. Both the markings on the forewing beneath scarcely paler than above, whilst in *callianira* the discal band is more or less yellow; underside of the hindwing densely striped with grey, with narrow dark distal margin; abdomen beneath and laterally entirely black. — Central East Peru: Pozuzo, Cushi, etc.

anaxo. **A. anaxo**. ♂: upper surface with the exception of the distal margin strongly glossy green-blue; forewing with orange-red discal band from the costal margin to the hinder angle, without orange or red basal area. ♀ not known. East Peru. — **anaxo** *Hpffr.* Under surface of the hindwing only in the basal third distinctly striped with yellowish grey. Chanchamayo. — **comta** *Jord.* (82 d). Band of the forewing broader, underside of the hindwing and distal part of the forewing densely striped with yellowish grey, in *anaxo* the distal $\frac{2}{3}$ of the hindwing and the distal part of the forewing almost pure black-brown. Callanga, province of Cuzco, South-East Peru, taken by GARLEPP at 1500 m.

hilaris. **A. hilaris** *Jord.* (82 a). ♂: collar and breast with small orange or more grey spots, underside of the abdomen marked with orange. Upper surface much as in *callianira*, the discal band shorter and the hindwing less blue. The under surface quite different; the discal band of the forewing edged with white distally, hindwing with broad white discal band, which is proximally bounded by a blackish line and posteriorly joins a large white patch occupying the basal and abdominal areas from the costal margin nearly to the anal angle; there remains thus in the basal $\frac{3}{5}$ only a large triangular brown costal patch, of which the above-mentioned fine line forms the continuation. ♀ similar to the ♂, paler, the proximal area above tinged with black at the base, the white colour yellowish, less pure and conspicuous. In both sexes the lower angle of the cell of the forewing is more produced than in the allied species. — East Peru.

amphilecta. **A. amphilecta** *spec. nov.* In East Ecuador occurs an *Actinote* which stands midway between *A. diceus thespias* and *A. negra*. ♂ somewhat smaller than that of *thespias*, the basal area of the forewing paler orange, dentate on the veins, incurved between. Discal band coloured like the basal area or more yellow, varying in length and breadth, the band-like black interspace posteriorly more oblique than in *thespias*, sometimes broken up into spots in consequence of the greater extent of the orange colour. Hindwing with very faint blue gloss, from the base to just beyond the apex of the cell orange, this area strongly striped with black (in the type the cell almost entirely black), often only orange stripes present, which are placed between the cell and the costal margin. Beneath the discal band of the forewing is yellow or orange, the basal area as above, a basal costal spot on both wings grey-yellow, the base and cell of the hindwing striped with yellow-grey, these stripes as well as the basal spots often distinctly tinged with orange-brown. ♀ larger and paler, the discal band of the forewing yellow, proximally slightly orange, in the single example posteriorly joined to the proximal area; hindwing to beyond the apex of the cell orange, blurred, striped with black. Beneath paler, hindwing and distal part of the forewing striped with yellow-grey, cell of the hindwing almost entirely yellow-grey, round its extremity a dark nebulous band, distal margin likewise blackish, on the disc yellow-grey stripes. Palpus in ♂ and ♀ laterally yellowish-scaled at the extreme base; abdomen beneath with three rows of washed-out yellowish spots; pronotum without spots. Hinder angle of the cell of the hindwing less produced than in *thespias*. — In the British Museum 7 ♂♂ and 1 ♀ from East Ecuador: Gualaquiza (type), Canelos, Sa. Inez and Aguano.

eresia. **A. eresia**. Recalls the *thalia* group in the great extension of the light colour on the upperside. ♂: upper surface pale ochre-yellow to red-orange, with black veins; on the forewing the distal margin, an oblique band distally to the end of the cell, a discocellular spot and a cell-spot black. Underside of the hindwing characteristic: at the base some small orange spots, in the middle a white band, proximally bounded by a black line which is angled at the apex of the cell. ♀ paler than the ♂, the black markings more extended, the markings on the underside of the hindwing standing out less sharply. The two lower radial veins of the hindwing close together and the lower angle of the cell strongly produced. Distributed from Colombia to Bolivia in several geographical races, only known from the east of these countries and rather rare in collections. — **eresia** *Fldr.* (82 d). ♂: the veins of the forewing broadly edged with black, these stripes as thick as the discocellular streak. Ground-colour sometimes much paler than in our figure. ♀ not known. East Cordillera of Colombia. — **leptogramma** *Jord.* (82 c). Variable. ♂: vein-stripes slender, discocellular stripe and black discal oblique band broad and usually united, the distal margin broadly black to the hinder angle; distal margin of the hindwing washed-out black. On the under surface the black discal line of the forewing extends to beyond the lower median vein. ♀ with the black more extended than in the ♂; basal area of the forewing and the hindwing entirely black, or again only the basal third and the distal margin of the hindwing blackened. East Ecuador: Archidona and Baños at the Rio Pastaza. — **eresina** *Hpffr.* (82 c). Paler than the preceding forms, the ♀ sometimes pale straw-yellow, the black reduced, on the under surface the black discal line of the forewing only reaching to the upper median vein. The examples vary considerably in the tone of the ground-colour as well as in the extent of the markings. Known to me from the Rio Palcazu and Rio Marcapata, from Cuzco and Carabaya; examples from Bolivia, the typical locality, I have not been able to compare.

A. desmiala Jord. Nearly allied to *eresia*. ♂: forewing above black with orange-red basal area, which is placed between costal margin and lower submedian, extends furthest distad in the cell, where it reaches the point of origin of the lower median vein and is truncate; a broad discal band of the same colour from the costal vein to the lower submedian, reaching the latter nearly at the hinder angle and touching the lower angle of the cell, the proximal margin of this band anteriorly twice inbent, then almost entirely straight, its distal margin obtusely angled at the middle radial and notched both at this vein and at the lower median. Hindwing likewise black, with a broad diffuse median band, which enters into the cell and is posteriorly extended nearly to the base and the anal angle, the anterior and posterior part of this band grey-yellow, the middle part orange-red, the veins and interneural folds black. On the under surface the forewing as above, but the orange markings paler, the discal band distally bordered with yellowish white and the distal margin shaded with deep orange. Hindwing as in *eresia leptogramma*, but without light scaling proximally to the cell and at the costal margin, the light median band broader, and the distal margin sprinkled with orange-red scales, which form a distinct line. — Archidona, North-East Ecuador, 1 ♂ in the British Museum.

A. laverna Dbl. (82 e). Palpus, collar and breast pure black. Forewing as in the following species with orange basal area and discal band, the costal margin black to the base, the last spot of the discal band (placed below the 1st median vein) small; the black stripes of the hindwing broad, the broad black distal margin not very sharply defined. On the under surface the discal band yellow or yellowish, lighter than the basal area and longer than above; hindwing (as in *A. callianthe*) striped with grey-yellow from the base to the apex of the cell and the anal angle. Rest of the wing striped with reddish brown, especially at the end of the cell, at the margin blackened, often yellowish submarginal spots are present. ♀ (type in the British Museum, figured by DOUBLEDAY): discal band above pale yellow, basal area darker than in the ♂; hindwing washed over with brown-orange. In both sexes the lower angle of the cell of the hindwing more strongly produced than in the next two species. — Larva (in the Oxford Museum, ex coll. KADEN) above brownish with light transverse markings, beneath entirely light, head and thoracic legs black, spines on segments 1, 2 and 3 and the dorsal spines of 11 and 12 dark, all the rest light, the bristles light, the spines about 4 times as long as the distance between two dorsal spines on the same segment. Pupa (likewise in Oxford) chalk-white, with subdorsal longitudinal band of blackish markings, a weaker lateral band and a strong ventral double stripe; spines black, about as long as the distance between the 2 spines on the same segment, anal segment black; between the longitudinal bands weak markings. — Venezuela. Probably this species also occurs in East Colombia, but apparently there are no examples from there in collections as yet.

A. leontine. Palpus with yellowish grey scaling at the sides, collar and breast spotted with red-brown (in examples which are not worn). Forewing above similar to that of *A. laverna*, but the basal area extends proximally nearly to the costal margin. Beneath the discal band is always yellow, not orange, and hindwing densely striped with grey-yellow, the striation either extends to the distal margin or an abbreviated broad discal band, which passes round the apex of the cell, and the distal margin remain dark. Ecuador and North Peru, varying very much geographically. — **leontine** Weym. ♀: according to the figure in "STÜBELS Reise" the proximal area of the forewing is pale orange-yellow (according to the description "red-yellow"), the discal band pale yellow, hindwing as the proximal area of the forewing, the black distal margin broad but diffuse. Beneath the apex of the forewing and the whole hindwing yellowish grey, the discal band of the forewing not sharply defined distally. Here belongs probably a ♂ in coll. GODMAN from Gualaquiza, Ecuador, and a second ♂ in coll. HEWITSON from "Ecuador", both in the British Museum. In these examples the black cell-spot of the forewing is narrow, the discal band pale orange, also beneath scarcely lighter than the basal area, the hindwing above black-brown with quite washed-out orange area, or pale orange with black, posteriorly very narrow marginal band. Under surface of the hindwing at most in the basal half with faint light stripes, the distal half or almost the whole wing as well as the distal part of the forewing blackened, with deep black stripes on the veins and folds, without light scales. — A further form, in the British Museum from Quito and Sarayacu (Rio Pastaza), is very similar to *leontine*. ♂♀: the basal area of the forewing almost as much reduced as in *hypsipetes*, the orange spot in the apex of the cell small, hindwing grey-yellow, strongly striped with black, with or without orange-red tone, distal margin variable in breadth; in almost all examples the proximal area of the forewing dusted with washed-out black at the veins and the hindmargin. — **bulis** Jord. (82 e). ♂: on the under surface the yellow discal band of the forewing not sharply defined distally, the distal part of the forewing and the whole hindwing densely and regularly striped with yellow-grey, the hindwing with faint reddish brown discal band and without black marginal band. ♀ not known to me. South-East Ecuador: Loja, Zamora. — **catochaera** Jord. (82 e). ♂: somewhat darker orange than the preceding form; the black marginal band on the hindwing above more sharply defined and broader. Beneath the distal part of the forewing and the distal half of the hindwing only weakly striped with yellow-grey, but the hindwing bears a marginal band composed of grey stripes. North Peru: San Pablo, and Central South Ecuador: Cuenca, taken by SIMONS at 2000 and 2200 m. — **hypsipetes** Jord. (82 e). In general larger than the last two forms. The orange-red basal area not reaching quite so far distad in the cell and also abbreviated towards the hinder angle, hence the black median band broader than in the preceding forms, the discal band lighter yellow and the black distal border of the hindwing as broad as or broader than in *catochaera*. Beneath the basal area often somewhat larger than above, the apical part of the forewing and the distal half of the hindwing

almost as densely striped with grey-yellow as in *bulis* and *leontine*, the yellow discal band consequently not sharply defined distally, the hindwing without distinctly defined marginal band. ♀ similar of the ♂; upperside of the hindwing with black line bordering the apex of the cell, which is sometimes distinct also in the ♂. Cajamarca, North Peru, taken by O. T. BARON at about 3000 m. in large numbers in May.

A. negra. Whether the two forms referred here constitute an independent species from *leontine* can scarcely be decided from the very few examples yet known. The black median band of the forewing above and beneath narrower than in the *leontine* forms and the orange discal band, which is yellow beneath, correspondingly broader; the black distal margin of the hindwing sharply defined. Underside of the hindwing grey-yellow in the basal half, especially in the cell, otherwise red-brown with dark distal margin, without the dark abbreviated band round the apex of the cell, which occurs in all the *leontine* forms. South-East Ecuador and North Peru. — **euclia** Dogn. Not known to me in nature; perhaps the form is identical with *A. leontine bulis* from the same locality, though the (uncoloured) figure given by DOGNIN does not fit with any of the rather numerous *bulis* examples that I have compared. ♂: the black distal margin of the hindwing above much narrowed anally and beneath only indicated. Loja, Ecuador. — **negra** Fldr. ♂: the black distal margin of the hindwing but little narrowed posteriorly, sharply defined, broad and distinct beneath also. Rio Negro in North Peru.

A. momina Jord. (= *mamina* Jord. laps. typ.) (82 e). Very similar to the following species, occurs together with it and is therefore probably an independent species. Palpus entirely black, collar and breast spotted with red-brown. The basal area and discal band of the forewing above and beneath, as in *A. demonica*, orange-red, of a deeper tone than in *A. leontine*, the orange-red stripe along the hindmargin better developed than in *demonica*, the veins intersecting the discal band more distinctly black; the black distal margin broader than its distance from the apex of the cell, not sharply defined, the black stripes thick, the abdominal margin and the base washed over with black. Beneath the base and cell of the hindwing are striped with yellowish grey, the rest of the hindwing as well as the apex of the forewing more or less dark reddish brown, sometimes with distinct grey submarginal streaks on the hindwing. The forewing bears commonly 1 or 2 light spots in the orange-red discal band both above and beneath. The ♀ above similar to the ♂, but the basal area of the forewing darkened and the hindwing shaded with grey-yellow. The whole under surface of the hindwing and the distal part of the forewing densely striped with yellow-grey, the whole costal margin of the forewing grey-yellow. — East Peru, in the provinces of Huànuco, Junin and Cuzco.

A. demonica. Distinguishable from *A. leontine* by the orange-red colour of the discal band on the underside of the forewing. At most this band is somewhat yellow distally. Palpus laterally with yellowish grey scaling; collar and breast sprinkled with orange. ♂: forewing as in *A. momina*, but the discal band intersected by much finer black veins; the black marginal band of the hindwing sharply defined. Beneath the hindwing is red-brown with darker, broad distal margin, the cell and often a few short stripes before and below it yellowish grey. ♀ larger and paler than ♂, the basal area of the forewing frequently strongly washed over with black; the markings vary in colour from orange-red to pale yellowish grey; beneath the hindwing either as in the ♂ or striped throughout with yellowish grey, as also the distal part of the forewing.

scotosis. Distributed from South-East Ecuador to Bolivia; a common species. The earlier stages unknown. — **scotosis** Jord. ♂: the basal area mostly larger than in *demonica* Hpffr. (82 b), hence the black median area narrower, the discal band longer, as the spot placed between the median veins is larger and there is mostly also a small spot below the lower median; the breadth of the marginal band of the hindwing in the middle greater than its distance from the apex of the cell. ♀ similar to the ♂, paler, the basal area of the forewing not shaded with black. South-East Ecuador. — **sobrina** Jord. ♂: quite similar to the preceding form, perhaps not constantly differing from it. Discal band beneath with distinct yellow tinge; hindwing somewhat more

demonica. distinctly striped. Environs of Chachapoyas in North Peru. — **demonica** Hpffr. (♂ = *nicylla* Hpffr.) (82 b, c). ♂: the orange-red discal band nearly always considerably narrower than the black median band, seldom reaching the lower median and never extending beyond it; the diameter of the black marginal band of the hindwing, measured in the middle, shorter than the distance of the band from the apex of the cell. The ♀ occurs in 3 principal forms, which are connected by transitions. In all of them the basal area of the forewing above is more or less strongly suppressed by black. ♀-f. **aurantia** form. nov., discal band and hindwing orange; **intermedia.** ♀-f. **intermedia** form. nov., discal band yellow-grey, hindwing orange; ♀-f. **demonica** Hpffr., discal band and hindwing yellow-grey. HOPFFER described the butterfly first from the ♀ as *demonica* and then from the ♂ as *nicylla*; as *demonica* was described on p. 345 and *nicylla* on p. 346 the former name takes precedence. *demonica* is common in eastern Peru and Bolivia and is known northwards as far as the Rio Pozuzo.

Section II. Distal half of the costal margin of the forewing beneath clothed with bristles, without scales.

d) *thalia* Group.

Distal part of both wings beneath and above scaled, only at the distal margin with hair-scales; claws of the ♂♂ asymmetrical.

A. antea Dbl. (83 c). Cell of the hindwing beneath without row of bristles. The discal band of the forewing broad,

always paler than the hindwing, nearly always complete, as the last spot but one (between the two median veins) is seldom entirely absent; the basal area is mostly well developed, but in the ♀ often reduced; in the latter case cell-stripe and cell-spot always remain very distinct; the upperside of the hindwing is always brownish orange. Beneath the hindwing from the base to the apex of the cell and a postmedian costal patch are coloured like the proximal area of the forewing, the disc is washed-out brown and the angled median band, which passes round the apex of the cell and in *thalia* and its allies is commonly strongly developed, is only indicated and sometimes entirely absent, the distal margin is slightly darkened. According to the colouring of the upper surface we differentiate: f. **holochroa** *form. nov.*, discal band of the forewing *holochroa*, scarcely paler orange than the hindwing; f. **ochrotaenia** *form. nov.*, discal band pale yellow, proximal area *ochrotaenia*, orange; f. **anteas** *Dbl.*, discal band and proximal area pale yellow, hindwing orange. These colour-forms are *anteas*, not local. *A. anteas* is distributed from Guatemala to Colombia and eastwards to East Venezuela; there are also 2 examples before me from the island of Tobago. A. H. FASSL, who has bred *anteas* from the larva, has presented to the Tring Museum a blown larva and some pupa-cases. The larva is black above except for the spines, the latter light at the base with the exception of those on the prothorax, each spine on a dark spot surrounded by a light circle, each segment with 2 or 3 light transverse lines, the thoracic segments in this example so pressed together that their markings cannot be seen; the bristles on the spines white, those at and near the tips dark; the length of the spines is more than twice the distance between two spines on the same segment. Pupa-cases chalk-white, anal end black, the black spines of the abdomen about as long as the distance between two spines (on the same segment), the pattern of the abdomen consists of longitudinal streaks, namely a subdorsal, a lateral, and a strong ventral double row; in addition to these 10 longitudinal lines (in 5 pairs) the abdomen bears only some very small and not numerous spots. Larva and pupa are quite different to those described on p. 371 (from *limbata*). — In the Cordillera of Mérida (Venezuela) flies a form which will possibly prove to be a local race of *anteas* and which I therefore add here provisionally: f. **straminosa** *form. nov.*, the light parts of the upper surface entirely pale yellow, the hindwing distally *straminosa*, sometimes more or less extended brownish orange, the stripes of the proximal area of the forewing reduced in breadth, occasionally for the most part suppressed, the black stripes of the hindwing on the whole stronger than in *anteas*. Under surface paler yellowish grey than in *anteas*, the hindwing less brown and the angular median line on the whole more distinct.

A. thalia *L.* (83 c). Underside of the hindwing usually without row of bristles in the cell. Wings *thalia*, duller-coloured than in *anteas* f. *ochrotaenia*, which resembles *thalia*, the veins dividing the basal area of the forewing always broadly black, the black stripes on the upperside of the hindwing more strongly developed, the discal ones all extending nearly to the cell, the cell-stripe strongly developed. The underside of the hindwing on the whole darker than in *anteas*, especially in the ♀. The discal band of the forewing always interrupted, the last spot but one being absent or quite small. A ♂ from Paramaribo is distinguished by its colouring: ab. **idiographa** *ab. nov.*, on the upper surface the basal area very much reduced, the postmedian *idiographa*, spot of the cell scarcely indicated, hindwing brown-black, a cell-stripe divided by a black longitudinal streak, a discal band 4 to 5 mm. in breadth composed of stripes and a long, diffuse line in the abdominal area, extending to the base, dirty orange. Beneath as above, but the basal area of the forewing and the markings of the hindwing paler, the band of the hindwing posteriorly still more strongly suffused with black than above. — Surinam and British Guiana. The larva is described and figured by STOLL as cinnamon-brown, with black lateral stripes and cinnamon-brown head. Pupa white, marked much as in *A. anteas*.

A. cedestes. ♂ and ♀ without or ♂ with row of bristles in the cell on the underside of the hindwing. On an average larger than *anteas* and *thalia*; markings of the forewing pale straw-yellow; hindwing with the exception of the base commonly tinged with orange, the lower angle of the cell long-produced, so that the base of the upper median vein is placed much more distally than the upper angle of the cell, above usually entirely without blackish median band, under surface as in *anteas* shaded with blackish in the distal half, especially near the lower angle of the cell, the median band indicated, but not sharply defined. Ecuador. — **suspecta** *subsp. nov.* ♂♀: the basal area strongly suffused with black, washed out, the cell-spot, however, *suspecta*, purer pale yellow. In western Ecuador: Paramba and Chimbo; in the type from Paramba (♂) the hindwing without bristles in the cell on the underside and the disc above brownish orange. — **cedestes** *Jord.* (83 a). *cedestes*, ♂♀: the basal area well developed, the postcellular stripe in particular sharply defined and broad. South-East Ecuador: Zamora.

A. terpsinoë. The largest species of the *thalia* group, except for stunted specimens. Wings broad, especially the hindwing; on the underside of the hindwing the cell always without row of bristles and the light costal patch sharply defined and more distal than in the preceding forms. Peru and Bolivia. The races of *terpsinoë*, *cedestes*, *thalia* and *anteas* replace one another geographically and are possibly forms of a single species. — **terpsinoë** *Fldr.* ♂: on the whole somewhat paler than *crassinia* (82 g), especially the basal area *terpsinoë*, of the forewing beneath, the discal band of the forewing nearly always pale yellow, rarely white, the last spot but one in it mostly indicated. North Peru: Rio Negro and Chachapoyas. — **crassinia** *Hpffr.* (82 g). *crassinia*, Wings very broad, the discal band of the forewing mostly white, more rarely yellowish, its penultimate spot seldom indicated; the black stripes of the hindwing as a rule very short. Basal area of the forewing and the

eupelia. hindwing occasionally paler than in our figure. East Peru and East Bolivia, not rare. — *eupelia* Jord. (83 a), from South-East Bolivia (Dept. Sta. Cruz de la Sierra), is distinguished by the dirty clay-yellow to yellowish grey colouring of the hindwing and the basal area of the forewing, the veins intersecting the latter more broadly black, and the stripes of the hindwing thicker and longer, the discal band of the forewing always white, and the underside of the hindwing greyer than in *crassinia* and *terpsinoë*.

veracruzensis. **A. guatemalena.** Cell of the hindwing beneath with row of bristles. Wings narrow; the markings of the forewing and the hindwing yellow-grey, the latter occasionally brownish orange; the veins in the basal area of the forewing broadly black, the last spot but one of the band absent; the hindwing strongly striped, the marginal band sharply defined, the black median band above at most at the costal margin distinct; beneath without marginal band. Mexico to Colombia; earlier stages unknown. — *veraacruzensis* subsp. nov. ♂. On the forewing the light stripes of the basal area on the whole broader than in *guatemalena*, the discal band likewise broader, the spots in it not separated; the distal margin of the hindwing narrower, the disc in the ♀ sometimes tinged with orange. Veracruz, East Mexico. — **guatemalena** Bates (83 b). The light stripes of the forewing narrow, the discal band separated into narrow spots by the broad black veins. Guatemala and Costa Rica. — **latior** subsp. nov. Somewhat broader-winged than the preceding forms, the hindwing somewhat deeper yellow. Distinguished by the under surface, which is more uniform yellowish grey, so that the black transverse markings stand out more sharply, the light band of the forewing, on the other hand, less contrasted with the apical part of the wing. Magdalena Valley in Colombia.

melampeplos. **A. melampeplos** Godm. & Salv. Very similar to the preceding species, but probably specifically different. Less densely scaled, hence slightly transparent, the hinder angle of the cell of the hindwing much less produced. The light stripes of the forewing very distinct, but somewhat diffuse at the edges, the cell-spot always small, the spot between the median veins likewise small, almost obsolete, the discal band never reaching beyond the upper median, as the last two spots are always absent. The black fold-stripes of the hindwing on the whole narrower than in *A. guatemalena*. Hindwing with or without orange-red tone. — Costa Rica and Ecuador, probably also in West Colombia.

lapitha. **A. lapitha** Stgr. (83 c). A strikingly pale, small, semitransparent species from Panama, in which on the forewing the basal area and the discal band are confluent posteriorly and the blackish median band is very narrow. On the hindwing the median band is always wanting above and the marginal band is very narrow and washed out. Subcostal and 1st radial of the hindwing short-stalked. ♀ quite similar to the ♂. — Chiriqui; in the Tring Museum also from the island of Jicarón off the west coast of Panama.

The study of the *thalia* group of *Actinote* occurring in the Andes, except those which belong to the preceding species, presents such difficulties that we have not yet arrived at any satisfactory conclusions. According to the material before me there are in many districts 3 or 4 forms independent of one another, i. e. specifically different, but their differences are so confused with the characters of the examples from other districts that it is at present impossible to give sharp diagnoses of these species. Many forms are fairly constant in colouring, others on the contrary evidently vary from orange-red to pale yellow-grey; the markings, scaling, wing-contour, genitalia and neuration offer no reliable characters on which one could unite into species the examples coming from different districts. Under these circumstances it seems to us advisable for the present only to name the conspicuous, easily recognizable forms and to attach the others to them as probably varieties, until further investigations on more abundant material and the results of breeding shall have given us fuller enlightenment concerning these doubtful forms. As the pupae before me of two Andes forms have short spines, whilst the pupae of a form from East Bolivia belonging to the Brazilian *A. pellenea* have long ones, I refer to *A. equatoria* the Andean forms under consideration and to *A. pellenea* the forms which occur in the districts east of the Andes as far as the Atlantic Ocean and northwards to the north coast of Venezuela. This purely geographical division will certainly prove incorrect, as no doubt many of the Andes forms likewise belong to *A. pellenea*, but in our present defective knowledge of these *Actinote* it has the advantage that it will render it comparatively easy to find the names of the examples to which localities are attached.

hahneli. **A. equatoria.** We unite under this name the forms which are known to us from the Andes from Guatemala to Bolivia and from the Cordillera from Mérida in Venezuela and the Sierra de Sta. Marta in North Colombia. — **hahneli** subsp. nov. (Stgr. i. l.) flies in Mérida. Pale straw-yellow, basal area of the forewing sharply expressed, not diffuse, but the black vein-stripes intersecting it strong, the costal margin black to the base, above nearly always and beneath always complete. On the under surface the black stripes of both wings strong, the marginal band and the angled band of the hindwing sharply expressed, the light part of the disc between them band-shaped. Together with this light form occurs a second, in which on the upperside the hindwing and the whole basal area of the forewing, or the greater part of it, are brownish orange, while the discal band of the forewing is pale yellow; on the under surface this form agrees with true *hahneli*, as the basal area of the forewing has only quite a weak orange tone: f. **semilutea** form. nov. Both forms also fly in the Sierra de Sta. Marta. — From the East Cordillera of Colombia 3 forms are known to me: one is quite like true *hahneli*, except that the marginal band on the underside of the hindwing is less deep black. A second, commoner form, **perfulva** subsp. nov., is brownish orange above, at most the discal band of the forewing is a little paler, the black stripes of the hindwing are narrow, the stripes in and before the cell

short, narrow or absent. Under surface distinctly tinged with orange, on the hindwing the marginal band black, but usually washed out, the angled band nearly always well developed, the light discal area which it bounds forming a sort of band, as the disc is not or scarcely darkened at the apex of the cell. As a third form we find in the same district f. *flavifascia* form. nov., which is probably a subspecies of *A. pellenca*; in it the *flavifascia*. discal band of the forewing is yellowish and contrasted with the basal area and hindwing, which are orange; the black stripes of the hindwing are longer than in *perfulva*, the subostal and cell-stripes are distinct above, thick beneath, the angled band strongly developed beneath, the light part of the wing distally to it band-like. — From the Cauca Valley I have 2 principal forms before me: *limbata* subsp. nov. represents *equatoria* and probably *hahneli*; ♂: the markings of the forewing are chamois-yellow and the hindwing brownish orange, or both wings are of the latter colour, the discal band always of the same tone as the basal area; beneath the forewing has at most a suggestion of orange-colour, the cell and the subcostal area of the hindwing light, as their stripes are usually short or absent, the distal margin deep black, sharply defined, the angled band mostly linear, often only distinct towards the costa, the disc not darkened at the end of the cell. ♀ pale yellowish grey, marginal band on the hindwing beneath as in the ♂ or densely overlaid with light scales, angled band weakly indicated, the wing very pure in colour as far as the marginal band. A ♂ from Monte Tolima (A. H. FASSL leg.) probably belonging here has the underside of the forewing a deeper orange-brown tone. The second principal form from the Cauca Valley, which lies before me in large numbers from the neighbourhood of Popayan, may be a form of *pellenca*; upper surface brownish orange, the discal band of the forewing either as deeply coloured as the basal area or lighter, the black stripes of the hindwing above and beneath long, the marginal band of the hindwing beneath indistinct, washed out, the disc darkened at the end of the cell, so that a light costal patch is separated off: f. *cauca* form. nov. — In the West *cauca*. Cordillera of Colombia FASSL bred a form which pretty certainly belongs to *limbata*, with the ♂ deep straw-yellow, i. e. nearly as pale as the ♀. The larva, from the two blown specimens before me, has a red-brown (not black) head, black subdorsal stripe and fine black dorsal transverse lines, the spines are light like the body, except on segments 1 to 3 and 11 and 12, where they are dark; the length of the spines exceeds the distance between two dorsal spines on a middle segment by about one third. The spines of the pupa are only about half as long as their distance from one another; the black-brown subdorsal stripes are very strongly developed and about twice as broad as the light dorsal stripe, which is almost entirely without dark markings, the ellipses which form the ventral stripe are very strong; one pupa-case before me is much less strongly marked than the other. On a narrow-leaved, Eupatorium-like Composite. A ♀ from the western slopes of the West Cordillera (Rio Dagua) has the hindwing above tinged with brownish orange. From Nicaragua we have a number of examples which exactly agree with *limbata* from the Cauca Valley. — From the West Cordillera of Ecuador I know only one form, *grammica* subsp. nov., which is similar to *grammica*. the pale *hahneli*, but in the ♂ has often a slight orange tinge, especially on the hindwing. The black vein-streaks are thick, especially on the marginal band of the hindwing. The discal band of the forewing above only reaches to the 1st median, the two posterior spots being always absent, the fold-stripes are short, except the stripes of the abdominal area, the anterior are commonly absent, the angled band is at most quite weakly indicated above. Beneath the distal margin of both wings is black, the hindwing is not darkened at the end of the cell, the angled band always narrow and mostly only anteriorly indicated as a line, the cell-stripe and the discal fold-stripes short or absent. Paramba, Rio Mira, taken in numbers in March by ROSENBERG at about 1000 m. Some larvae collected by R. HAENSCH, probably found at Balsambamba in the West Cordillera, agree well with the larvae of *limbata* from the West Cordillera of Colombia. — On the central plateau of Ecuador, between the West and East Cordilleras, and also in the dry coast districts of West Peru, occurs *equatoria* Bates (83 a). Very pale yellowish grey without any trace of orange. The wide distribu- *equatoria*. tion of this *Actinote* in dry districts suggests that the lighter or darker colour of the *thalia* group of *Actinote* depends on the lesser or greater amount of moisture in the air, i. e. that the light forms are "dry" and the deep orange forms "wet". The discal band of the forewing is nearly always complete, occasionally the last spot but one is wanting; the stripes on the hindwing are well developed, the cell-stripe especially strong, the marginal band very variable in breadth, narrower than in *hahneli* and *grammica*, beneath washed out, and like the distal margin of the forewing light-scaled, angled band always distinct, not filled in, mostly developed above also. The pupa resembles that of *limbata*, but the spines are on the whole somewhat shorter, in one of the four specimens before me the posterior 3 pairs reduced to small humps. The larva, judging by a cast-off skin attached to one pupa, shows no differences from that of *limbata*. — To *equatoria* probably belongs also *mucia* *Hpf.*, described from Chanchamayo and founded on a "pale straw-yellow" ♂, with very *mucia*. narrow black marginal band on the hindwing. — *epiphaea* subsp. nov. In the examples before me from East *epiphaea*. Peru southwards as far as the Rio Perené district (Chanchamayo) the basal area of the forewing and the hindwing are brownish orange and the discal band of the forewing is paler, yellowish; the wings are more elongate than in *grammica* and the following form; the spot placed before the base of the 1st median in the basal area of the forewing is small or absent, the discal band is often complete, the last two spots seem to be especially well developed in small examples (type), the marginal rays of the hindwing, or at least the middle ones, are short and the angled band is more or less distinct above. Beneath both wings are very distinctly tinged with orange, the angled band broad, filled in with blackish brown, the light part of the disc distally to it band-like, rather sharply defined distally also, the distal fold-stripes almost confined to the dark distal

margin (except for the abdominal area). ♀ similar to the ♂; the angled band scarcely indicated above and somewhat paler brown beneath than in the ♂; the discal area of the hindwing beneath usually darkened posteriorly, so that a light costal patch contrasts with the rest of the disc. Type from the Río Palcazu.

adriana. Probably a subspecies of *A. pellenea*. — *adriana* Hpffr., described from Bolivia, has the hindwing strongly rounded. We refer here also examples from South-East Peru, which vary from brownish orange to pale yellowish grey and are paler than *epiphaea* both above and beneath. The colour of the true *adriana* is described as a pleasing clay-yellow, also in typical specimens of this form the distal margin of the hindwing is said to be much broader than in *pellenea*. — From the Andes of Bolivia we know a further *pellenea*-like form, which is somewhat paler than the Peruvian *epiphaea*; the basal area of the forewing is larger, especially the spot between the 1st and 2nd medians, the distal margin of the hindwing is narrower, the angulated band is scarcely indicated and the last spot but one in the band of the forewing is absent, also the fold-stripes before, in and below the cell of the hindwing are strikingly narrow and indistinct. The under surface, as in *epiphaea*, is strongly tinged with orange, the angulated band is distinct, broad and filled in, but paler than

lodis. in *epiphaea*, the light part of the disc distally to it is band-like: *lodis* subsp. nov. Belongs probably to *A. pellenea*.

calymma. **A. pellenea**. Cf. the note inserted before *A. equatoria*. — *calymma* Jord. (83 c), from Paraguay and Argentina, is dark brown-black, slightly transparent, the basal area of the forewing and the hindwing dull orange, diffuse at the edges, the discal band of the forewing pale yellow, occasionally suffused with orange. Under surface dull orange, angulated band of the hindwing extending to the 2nd median or beyond it, in the ♂ mostly very well developed above also. Together with this dirty orange form flies a pale yellowish grey one, in which the markings are sharply defined; angulated band of the hindwing always strongly developed above also: f. *clara* form. nov., type from Paraguay. — *crucis* Jord. (83 c). Deep black, brightly coloured, discal band of the forewing and the distal and anterior parts of the basal area yellow, the rest of the basal area and the hindwing orange, these markings sharply defined and contrasting much more strongly than in *calymma* on account of the purer ground-colour, costal margin of the forewing broadly black, the vein-stripes narrow. On the under surface the basal area faintly tinged with orange at the base, apex of the forewing and the hindwing yellowish grey, marginal band showing through, posteriorly much narrowed, fold-stripes long, angulated band distinct beneath, distally to it a light costal patch. Bred by J. STEINBACH in large numbers at Buenavista in East Bolivia; the examples only vary very slightly. The spines of the pupa as long as the distance between two spines on the same segment or somewhat longer, the three stripes on the mesonotum sharply separated, the light dorsal interspace of the abdomen broader than the subdorsal stripes; tongue-case with very narrow black margins, not almost entirely black as in *A. equatoria* and *limbata*. Larva not known to me, but on one pupa hangs a larval spine, which is brown and nearly as long as the transverse diameter of the pupa. — *pellenea* Hbn. Deeper orange than *crucis*, especially the basal area on the under surface, cell-spot larger. Under surface darker. Occasionally the basal area of the forewing above entirely grey-yellow. South Brazil northwards almost to the mouth of the Amazon. — From the Lower and Middle Amazon no *Actinote* is yet known. — *subhyalina* Stgr. A very small, light, semitransparent form from the Upper Amazon, in which the discal band of the forewing is complete and the angulated band of the hindwing, at least in the ♂, distinct above also. The light parts of the wings are in f. *subhyalina* yellowish grey, at most the forewing shows some orange colouring at the extreme base. Specimens also occur, however, in which

ferrugata. the basal area of the forewing and the hindwing are pale orange: f. *ferrugata* form. nov., type from the

trinitatis. Rio Cachiyaco, a tributary of the Rio Ucayali. — *trinitatis* subsp. nov., from Trinidad and the eastern parts of Venezuela nearest to Trinidad, is very similar to f. *ferrugata*. ♂ deeper black, discal band of the forewing pale yellow, complete, but the penultimate spot often small, basal area distally slightly lighter, hindwing with short fold-stripes at the narrow black distal margin which tapers to a point posteriorly, the fold-stripes in, before and below the cell are absent or quite faint, a black discocellular streak distinct, on the other hand the angulated band only showing through. Beneath the basal area of the forewing slightly orange, distally as pale as the discal band; hindwing uniform light yellowish grey, marginal band indicated, disc not darkened at the end of the cell, angulated band sharply developed, nearly always entirely filled in. ♀ paler than the ♂, the larger distal and anterior part of the basal area of the forewing as light as the discal band, also the disc

subbadia. of the hindwing above somewhat lighter at the marginal band. — *subbadia* subsp. nov. Basal area and hindwing above much deeper orange-red than in *trinitatis*, the former only in the ♀ somewhat lighter distally and in both sexes also beneath much more extended orange than in *trinitatis*, the fold-stripes more strongly developed, the angulated band at least in the ♂ more distinct above, the hindwing much darker beneath, its distal margin broadly black or brown, the angulated band broad, the light part of the disc reduced to a narrow band; in the ♀ the underside of the hindwing lighter than in the ♂, but the distal area still always darker than in the ♀ of *trinitatis*. North Venezuela: San Esteban (type), Valencia, La Guaira. This form approximates to orange-coloured specimens of *A. equatoria hahneli* from Mérida, but the vein-stripes are more slender, the marginal band of the hindwing is narrower above, beneath the forewing is much more strongly orange, the angulated band broader, and the distal margin of both wings less pure black.

In addition to *A. pellenea* there are in Brazil three *Actinote* so similar to one another that they have usually been regarded as forms of one species. Although the differences are not sharp when one compares the examples of one of these forms from different localities with those of another, yet the specimens of the four *Actinote* occurring together seem to be well differentiated and hence I regard these four forms as specifically distinct. As the butterflies are very common it ought not to be difficult to settle the question

on the spot by breeding. Hitherto, however, none of the entomologists residing in Rio and the neighbourhood have undertaken the task. PETERS has bred from the larva two of the butterflies in question and there are water-colour drawings of larva, pupa, butterfly and food-plant in his unpublished contributions to the Brazilian butterfly fauna in the Tring Museum. In one of the larvae, however, a mistake has evidently occurred and the figures of the pupae, as is usually the case with such, are not sufficiently exact for reliable specific differences to be gathered from them.

A. pyrrha *F.* (= ? *euterpe* *Fldr.*) (83 b). The example described by FABRICIUS from the BANKS collection is still in the British Museum, but in very indifferent condition. Very variable in size, length of the forewing 28 to 40 mm. The light markings of the forewing yellow-grey to dirty orange, much lighter than the hindwing; the basal area very much reduced, diffuse, mostly only the cell-spot well defined; the two posterior spots in the discal band are absent or small; the hindwing rarely yellow-grey, yet rather variable in colour, base and abdominal margin commonly grey. The scales of the forewing easily get detached and the basal half of the wing is usually transparent. The light scales in the distal part of the under surface of both wings are dentate. The anal tergite of the ♂ is either sharply pointed or obtuse. — South-East Brazil and Paraguay, common. — The description of *euterpe* *Fldr.* is so indefinite that the name must be allowed to sink, as neither in the Vienna Museum nor in coll. FELDER is there a specimen labelled by FELDER as *euterpe*. *pyrrha.*

A. carycina *spec. nov.* (83 b). A smaller form, length of the forewing 18 to 30 mm. Markings of the forewing grey-yellow, hindwing orange with grey abdominal margin, rarely the hindwing with the exception of the black distal margin and the markings of the forewing grey. The basal area of the forewing broken up into narrower stripes than in the next species by the very broad black veins. Under surface of both wings yellowish grey, without orange tone, the brown-black median band of the hindwing usually well developed as far as the lower median vein, rarely abbreviated. The light scales on the underside of both wings not dentate. — The larva which PETERS (Ms.) figures as belonging here shows a pair of long horns on the neck (or head) and is probably a *Dirphia* larva. The pupa, from which he obtained the butterfly, is more slender than usual and bears 6 rows of spines (?!), which are not quite as long as the distance of one pair from another; the tip of the head is black, the cremaster on the contrary light; an uninterrupted subdorsal stripe black; on the ventral side a pair of black stripes on each abdominal segment. The sketch is probably incorrect. — South-East Brazil and Paraguay, common; name-type from São Paulo. *carycina.*

A. parapheles *Jord.* (83 a). A broad-winged and brightly coloured species. Discal band of the forewing always yellow, sometimes slightly tinged with orange, especially at the veins, the basal area either orange like the hindwing or as light as the discal band. On the under surface the basal area of the forewing and the hindwing either orange (f. **parapheles**) or as pale as the discal band of the forewing (at most slightly tinged with orange); the postmedian costal spot of the hindwing always pale (f. **pallescens** *form. nov.*, name-type from Rio). The light scales in the distal part of the under surface of both wings dentate; valve of the ♂ pointed. — Larva according to PETERS (Ms.) with black head and blackish double lateral line, dorsal surface pale reddish, from the 7th to the 9th or 10th segment white; the spines correspondingly coloured, but the anterior and posterior ones brown. On *Boehmeria caudata*. The larvae when young gregarious and free on the leaves; before pupation they scatter. Pupa more weakly marked than in *carycina*, tip of the head and cremaster in PETERS' figure light, spines shorter than in *carycina*. According to PETERS the butterfly has a swift and powerful flight and is found at Novo Friburgo only in open, unwooded places. The butterfly figured by PETERS seems to belong to this species and to f. *pallescens*, but is possibly a form of *A. pellenae*. — South-East Brazil (very common near Rio), Paraguay, Matto Grosso. Examples with orange on the under surface I only know from Rio, where, however, the pale form also commonly occurs. *parapheles.*
pallescens.

The following forms are sharply defined and certainly specifically different from the preceding.

A. quadra *Schaus* (82 f). A large species, which may be recognized by the large spot at the hinder angle of the forewing and the uniformly grey under surface of the hindwing. The submedian stripe of the forewing is divided by a fine longitudinal line, which is not the case in the preceding Brazilian species; the last spot of the always complete discal band is about as large as the cell-spot or even larger and the submedian stripe correspondingly abbreviated. — South-East Brazil, rare, known from the provinces of Rio, São Paulo and Paraná. PETERS (Ms.) found a larva suspended for pupation on a Composite (*Conyza*); it was entirely yellow-grey, including the head (discoloured?). Pupa thicker than usual, spines moderately long, the lateral stripe consisting of two lines. *quadra.*

A. perisa *Jord.* (82 f). The whole upper surface in ♂ and ♀ yellow, the veins and narrow streaks between them in the distal area black; the black transverse markings, as may be seen from the figure, sharply developed, beneath as well as above. Margins of both wings beneath washed over with grey, apex of the forewing even less black than above. — A pair found by J. STEINBACH in Tucuman. The same collector also sent from there two *Actinote* larvae and two pupae, which perhaps belong here. The larva is similar to that of *A. antea*s (p. 365), but the spines are only half as long. Upper surface including the spines black, the latter light at the base, bristles white, the apical ones brownish, body from the stigmata downwards light (yellow-green *perisa.*

in life ?), above the legs with dark markings; thoracic legs and head black. Spines of the pupa only about half as long as the distance between the two spines on one segment.

A. alalia. In this species also the spot at the hinder angle of the forewing is always rather large and the submedian stripe extends much less far distad than the median spot of the basal area; markings sharply developed; the penultimate spot in the discal band often very small but never quite absent; median band of the hindwing above and beneath distinct. Chiefly distinguished from *A. surima* by having the scales in the distal part of the wings beneath strongly denticulate, while the marginal cellules of the forewing beneath *conspicua*. bear no hair-scales posteriorly to the 3rd subcostal. South-East Brazil. I only know the ♂. — **conspicua** Jord. (82 e). A very large, perhaps specifically different form from the province of Rio (Petropolis, Novo Friburgo). Very deep orange, also beneath. The black median band of the forewing as well as the marginal band of the hindwing broad. Under surface of the hindwing orange-brown. PETERS (Ms.) figures, together with its larva and pupa, a butterfly which resembles *conspicua* on the upper surface, but beneath has the discal band quite yellow instead of orange-coloured (♀ ?). The larva, which was found on *Eupatorium triplinervia* at Novo Friburgo, is dorsally reddish grey with black transverse bands; spines light, the anterior and posterior ones blackish, head grey-green, underside of the body yellow-green. Spines of the pupa short, the longitudinal bands not interrupted, black with small light spots. According to PETERS (Ms.) the butterfly lays its eggs in January in small clusters on the underside of leaves. The young larvae make a common web close to the place where they are hatched, afterwards in the top of the plants, where they draw together and spin over leaves and flowers. They remain in the web from February to October, undergo a moult there and eat little. With the arrival of the first rain they leave the web for good, eat voraciously, grow rapidly and remain together until shortly before pupation. PETERS found the butterflies in 1871 very common in all the clearings, in the following year rare. They shun the woods and when not disturbed fly with weak, slow flapping of the wings like a Heliconian, often hang suspended in the air for a long time, sometimes mount up high, then raise the wings somewhat and sink slowly without moving the wings. They visit the flowers of Composites, *alalia*. Lantana, etc., and are here easy to catch. — **alalia** Fldr. was described from an example without locality, which is characterized by the especially strong reduction of the black markings on the forewing. This specimen and others more broadly black, but undoubtedly belonging to the same species, are distinguished from *conspicua* by the hindwing beneath bearing distally to the black median band a reddish brown band, followed distally by grey longitudinal stripes, while the cell and the abdominal area are light-coloured and the cell of the hindwing has in the middle a short black transverse streak. São Paulo, Paraná, Espiritu Santo.

A. surima (82 f, g). ♂: similar to the true *alalia*, somewhat paler yellow, the black median band of the hindwing above and beneath very strongly and sharply developed, forewing beneath with hair-scales between all the subcostals (at least on the folds), the other scales entire-margined, net dentate as in *alalia*. Underside of the hindwing with orange-brown tinge, distally to the median band somewhat more distinctly orange, this colour, however, not well defined distally as in *A. a. alalia*, but towards the margin gradually overspread with black. The only two ♀♀ before me (from Paraguay) are very pale, as the figure shows (82 g). — South-East Brazil (Paraná) and Paraguay.

e) mamita Group.

Wings semitransparent, with the same greasy gloss as in worn specimens of the preceding group, the distal part of the wings above and beneath with numerous hair-scales and bristles. Claws almost entirely symmetrical in the ♂ also.

A. mamita. Almost hyaline. On the upperside of the forewing in the distal part and on the underside of both wings about half the scales and in the distal part of the under surface nearly all the scales are replaced by bristles. On the under surface the bristles in the distal part yellowish with the exception of those placed on the veins and at the margin, which are black. ♀ similar to the ♂, larger, somewhat paler. Larva according to BURMEISTER dirty clay-coloured, head and the spines on segments 1 to 3, as well as the thoracic legs and a thin lateral line black, the spines on the other segments red; on *Amarantus*, *Evalus* and other low plants. Longitudinal bands of the pupa filled in with black, with round light spots, spines short. Argentina, *mitama*. Paraguay and South-East Brazil. — **mitama** Schaus (82 f), from South-East Brazil, is somewhat deeper orange than the corresponding sex of *mamita*, the forewing a little more broadly black and the under surface less *mamita*. grey. — **mamita** Burm. occurs in Argentina from Buenos Aires to Tucuman, and in Paraguay. The difference in the colouring of the sexes is greater in *mamita* than in *mitama*, at least in the examples before me.

A. canutia Hpffr. (= *pellenea* Geyer nec Hbn.) (82 g). Less transparent than *A. mamita*; the upper surface with the exception of the distal margin much more densely scaled. Under surface, in addition to the bristles which stand on the veins, with numerous black bristles, the marginal area consequently almost entirely black. Cell of the hindwing beneath without bristles. Proximal area of the forewing and the hindwing brownish orange, the discal band much more yellow. ♀ larger and much paler than the ♂. — South-East Brazil and Paraguay. The earlier stages not known.

Subfamily: **Heliconiinae.**

In this group of insects we are confronted with one of the most curious phenomena in the lepidopterous world, in as much as it is in an almost unique manner most closely connected and associated with the other genera of butterflies found in Tropical America. To him who demands scientific proof that for the natural classification of insects structure and anatomy are all-important, whereas colouring and markings play no very great part, one should recommend the study of this group. A limited number of most characteristic patterns are constantly recurring in quite different subgroups of the *Heliconiinae*; and not enough with that, but an exact copy of these patterns is found also in most of those groups of butterflies, which occur more or less frequently in the localities where the models are found. One has the impression that the *Heliconiinae* could but difficultly exist independently by themselves, and that it were necessary for them to associate with a whole number of partly allied, partly quite different forms, in order to hold their own in the struggle for existence.

This most curious fact becomes at once clear to any one who lands at the coast of South America. Whoever takes the road from Rio de Janeiro to the Monte Corcovado, observes, even before leaving the real town, flying along the bamboo-walls of the gardens, *Heliconius narcaea*. But were he to capture all butterflies resembling in colouring, markings and manner of flight this most gaudily coloured form, what would he bring home? Most assuredly a number of this same *Heliconius*; but in addition a whole series of very similar butterflies belonging to the most heterogeneous groups. Surely he will have obtained a few ♀♀ of *Perhybris pyrrha*, some *Eueides dianassa* (which would be its nearest allies), and in addition a whole number of Danaids (that is to say quite a different group of butterflies) which have such a marvellous external similarity to *H. narcaea* that even the most experienced eye of the collector could not discern any difference in them while flying. Such a butterfly occurring around Rio is f. i. *Melinaea ethra* (33 d), which agrees with *narcaea* also in size; *Mechanitis lysimnia* (34 b) is only to be distinguished by its smaller size, and since during certain times one may find at Rio also dwarf specimens of *H. narcaea*, it is absolutely impossible to tell with certainty whether a certain butterfly one there sees flying about or alighting upon a flower, is a *narcaea* or not. Further we observe at precisely the same hour another species, exactly resembling it in its mode of flying and its outward appearance, viz. *Ceratinia euryanassa* (35 b); it is only when we hold it in our hand that we may recognize the delicate wax-like softness of its wings. Also from the ♀ of *Eresia eunice* (91 a) it is difficult to distinguish small specimens of *narcaea*; indeed we may capture day-flying moths, such as *Castniidae*, *Pericopiidae* and others, — all wearing the dress of *Heliconius narcaea*.

A similar experience we may have on landing on the north coast of South America. Here we notice, fluttering about shrubs and bushes, a host of black butterflies with a blood-red spot behind the middle of the wing; playing together they form perfect bands of butterflies, all alike, only some a little larger, others smaller, some flying slowly, others more rapidly. A portion of these butterflies undoubtedly belongs to the *Heliconiinae*, most probably *H. melpomene* (75 a). But what else would we find, were we bent upon capturing all these black and red specimens which here fly at the same time, and often about the same shrub? A swallow-tail, *Papilio euterpinus* (12 c), which dropped its tails and assumed an entirely different shape and mode of flight in order to make the deception effective. Of *Pieridae* we notice above all *Pereute charops* (21 b) which forms the larger, and of *Nymphalidae* *Eresia castilla*, which makes up the smaller members of the uniformed company. In addition a whole number of *Heliconiinae* belonging to quite different groups than *melpomene*, as f. i. *H. guarica*, the northerly form of *vulcanus* (76 c), and *E. viculata* (78 b). Sometimes they still reveal by certain characteristics their origin from quite different groups, as f. i. *H. rubellia* (74 f) by its yellow subterminal band; but these marks are so much reduced that they do not interfere with the mimetic deception. Again we meet at these landing-places in Venezuela or Colombia Acraeids of the genus *Actinote* presenting the same type of colouring, and in addition a whole number of more or less distant Nymphalids, such as *Eresia acraeina*, *Adelpha lara* and others, all of which are mutually closely associated, and present in their outward appearance a similarity which must bewilder any observer.

As to the biological value of this resemblance which in most cases depends on mimicry and not on relationship or physical influences, naturalists are still at variance. But that it is of some advantage to many butterflies to imitate in an almost unnatural manner certain invariable, but not at all simple or easily explained colour-schemes, probably no one doubts. Certain it is that the Danaids are protected against certain enemies by the

poisonous nature of the fluid in their bodies derived from certain plants; and it is equally certain that many *Heliconiinae* are protected against certain other enemies by a most acrid odour of the living insect, which, if the wind was favourable, I not only perceived at a distance of 10 yards, but which in the case of *H. phyllis* may be called just as penetrating as that of a flying bug (*Pentatoma*). Whichever it is, it is certain that this protection must be a most effective one. This is best shown by the habits developed by them in their various functions of life: They fly in open places, alight very frequently, assemble in groups, have a slow, deliberate, perfectly straight and often soaring flight, and are so little shy that many may be almost taken up with the hand. They have a very tough life, enabling them to fly away without any difficulty even after having had the thorax compressed; they display the brightest and most striking colour-patterns that may be imagined, and, notwithstanding the fact that by means of their broad wings they can easily gain the tops of the trees upon which they pass the larval stage, they descend very often to lower heights, or fly near the ground.

If, leaving aside the colour-scheme, we consider their relationship from a systematic point of view, we meet with two theories. One, considering the neururation to be the only valuable criterion for the classification of lepidoptera, separates the *Heliconiinae*, i. e. the two genera *Heliconius* and *Eueides*, as a family of their own, contrasting it with the *Nymphalidae*, a number of which have the cell of the hindwing open. But it must not be forgotten that a great number of Nymphalid genera have the cell of the hindwing also closed, as f. i. *Argynnis*, *Hypanartia*, *Vanessa*, *Pyrameis*, *Kallima*, *Ageronia*, *Callithea*, *Amnosia* and many others, among them also a number of genera considered to be closely allied to the *Heliconiinae* (*Cethosia*, *Terinos*, *Atella*, *Euptoieta* etc.). During the process of development in the chrysalis, the tubular discocellular, commonly called the cross-vein, is always present, disappearing as a rule in the best fliers (*Apatura*, *Doleschallia*, *Junonia*, *Catagramma*) either entirely, or at least in the hindwings (*Colaenis*, *Cirrhochroa*, *Araschnia*, *Melitaea* etc.). Beyond that the venation fails to afford us any possibility of effectively separating the genera *Heliconius*, or *Eueides* (a genus with very short antennae) from the *Nymphalidae*. Of much greater importance seem their habits and earlier development, and these closely connect the *Heliconiinae* with the New World genera *Colaenis*, *Metamorpho* and *Dione* and even more so with *Cethosia* of the Old World. Already FRITZ MÜLLER observed that a group of structurally more or less similar genera, among them the American *Heliconius*, *Eueides*, *Metamorpho*, *Colaenis* and *Dione*, live in the larval stage almost exclusively on the leaves of Passiflorae, for which reason he comprised them all under the name of "Maracujá-butterflies" (from the Brazilian name of those plants). This group to which would have to be added the Old World genus *Cethosia*, would be followed by the *Argynnininae*, comprising the genera *Argynnis*, *Melitaea*, *Euptoieta*, *Cirrhochroa*, *Atella*, *Terinos*, *Cynthia*, the African *Lachnoptera* etc.; thereafter would come the *Vanessinae*, the *Limenitinae* etc., the *Charaxinae* and *Apaturinae* concluding the series. HAASE, although separating the *Heliconiinae* as a subfamily, united them with the group of *Nymphalinae* (comprising all other Nymphalids), as well as with the *Acræinae* into the main group of the *Acræomorphae*. Here we only wish to point out these differences of opinion, since it would exceed the limits of our work to introduce new points of view; on the contrary we think it best to retain the old system in order to render it easier to readily find the described forms. For that reason we also give the Heliconids in the same sequence adopted in the classical treatises of WEYMER's and RIFFARTH's. The latest monography (STICHEL and RIFFARTH, das "Tierreich", Heliconiidae) is only a recent, rather more complicated edition of RIFFARTH's earlier Work, embodying but a few changes. For practical reasons we will refrain from introducing any changes in RIFFARTH's system, without, however, agreeing to it in every instance. Thus we would not place *passithoë* after *novatus*, nor *hortensia* after *clissonimus*, their resemblance being merely mimetic. But on the whole RIFFARTH's system clearly shows, in the chaos of colour-resemblances the natural relationship, for which reason we follow it without essential changes. Only for the genus *Eueides* we have adopted a system which seemed to enable the student to find more readily the desired forms.

Judging from RIFFARTH's Work which within recent years has been supplemented by some new additions, the number of known *Heliconiinae* amounts to 420, of which 360 belong to *Heliconius*, and 60 to *Eueides*. They are entirely limited to Tropical America, neither passing in the North the boundaries of Texas and Florida or going (except as a great rarity) as far south as Buenos Aires. In the Antilles, notwithstanding their favourable climate, only one species is known. On the whole there are not so very many separate species, but every one of them has developed a large number of frequently quite unsimilar forms, mimicking the outward appearance of some other protected species occurring in the same locality, as we have already mentioned above. The other genera of the subfamily barely comprise a dozen of species.

I doubt if any species of *Heliconius* is really scarce. Often I have observed in certain localities of South America certain *Heliconiinae* to be rather scarce, but I invariably found later on, that the species first considered so rare would, at some more distant place, at some other time or in a certain limited locality, suddenly appear in great numbers,

proving thereby that it is only at the limits of its range of distribution or outside of their normal time of appearance that they become really scarce. In curious contrast with the often enormous commonness of the *Heliconiinae*, is our very deficient knowledge of the earlier stages, which seems to be due, as also in the equally common and equally little known larvae of the Indian Euploids, to the fact that the caterpillars are living upon trees. A few isolated observations, however, which I have been able to gather, are of interest. The eggs are of a peculiar bottle-shape, produced by the originally spindle-shaped ovum being affixed to the leaves endwise, having thereby its lower extremity compressed. As they are always deposited singly, the larvae live also singly and widely dispersed. I observed *narcaea*, *phyllis* and *apseudes* fluttering always at noon around the vines of Passiflorae, depositing their eggs, in the same manner as the allied Nymphalid *Colaenis julia*, on the under surface of the vines, with the wings fully extended.

The larvae are covered with spines, two of which, placed immediately behind the head, are longest. Also the pupa is armed both at the back and in front with fine, hook-shaped spines, that of *apseudes* with a heavy crest of fine ventral spines. The second and third abdominal segments project distally, and the head is frequently provided with two wing-shaped appendages above the eyes, generally called „hare's ears". The duration of the pupal stage varies greatly; as a rule it is only 8—14 days, but may, during the dry season, be very much prolonged.

The life-time of the imago may be quite considerable; for I have seen certain individuals showing some characteristic defect, daily during four weeks flying at about the same place; I observed their lovely fresh colours fading, and the delicate downy covering of the body give way to the chitinous gloss of the bare thorax. It seemed, moreover, curiously obvious that, unless there was some good reason for their flying away, they remained steadily in the same locality, and in small openings I could observe day by day the love-sick ♂♂ flying up and down in that characteristic fashion which I have elsewhere called „promenading". This habit of flying for hours or half days at a time up and down for a certain distance, turning sharply about at a certain point and returning the same way, is shared by many species of butterflies, but is nowhere quite so distinct as in the genera *Eueides* and *Heliconius*, and a few isolated Indian species; I have observed it especially in *Eueides aliphera*, *dianassa*, *Metamorpha dido* and *Cethosia nietneri*.

Many Heliconiids fly all the year round, since in South-America, on account of the more equally distributed rains, seasonal forms, which are quite common in India, are as a rule not observed. In Central and Southern Brazil (Bahia, Rio, Santos), however, I found, that in the wet spring-time, particularly in the beginning of November, aberrative forms with more profusely black markings were more frequent than in the drier late summer. But it is not impossible that different conditions prevail at the more arid westcoast. The genus *Heliconius* s. s. is not at all represented in the rainless districts of Chile; otherwise its range of distribution is rather uniform, so that, notwithstanding the great number of forms, there are but few localities known, where more than 8—12 *Heliconius* and 2—3 *Eueides* may be found at the same time; for the numerous forms are distributed over an immense region, and, a few far-spreading species excepted, the greater number inhabit a very limited area.

This fact permits us to hope that a large number of good subspecies may still be discovered; this is almost certain to be the case with regard to the so-called intermediate forms. OBERTHÜR in his beautiful Work *) has shewn with the help of a very large number of illustrations the gradual changes which the subspecies, races and aberrations undergo, and, although the position of some forms may seem somewhat forced, still the comparison of varieties and local forms clearly illustrates the manner in which certain forms entirely different from one another in their extremes, may be proved to be allied to each other by their intermediate forms. On the other hand, the many complications that are met with in the study of said treatise, render it advisable not to go beyond the purpose of our present Work, but, refraining from all critical remarks, to limit ourselves to enumerating and characterizing the known forms, without entering upon the pros and contras of their specific rights. The great abundance of figures by which we illustrate no less than 220 forms, renders it superfluous to give a tabular division into chief and subgroups, sections or subgenera **).

1. Genus: **Heliconius** Latr.

Rather large-sized butterflies of most characteristic appearance. Head large, frons broad, eyes large, distended, naked. Palpi fringed with hair, moderately long; tongue always well developed; thorax narrow and elongate, slender, but considerably stronger than in the delicate Danaid species of the *Ithomiinae* which they resemble in their outward appearance. Antennae very long, uniformly thin, at the tip but slightly thickened; forelegs aborted to mere brushes, the middle and hindlegs stouter and far shorter than in the *Ithomiinae*. Abdomen cylindrical and rather slender, differing in length, scarcely projecting beyond the tornus. Forewings

*) Variation des *Hel. thelxiope* et *vesta*. Ét. d'Ént. Livr. 21.

**) The following treatise has been written some years ago, and it is over twelve months ago that the plates illustrating *Heliconius* and *Eueides* were published. Meanwhile descriptions of several new forms have appeared, the more important of which could be incorporated with the text; the rest, however, will be published in the supplementary notes on the *Nymphalidae*.

very long, much broader at the apex, rather soft and always displaying gay, often very bright colours. Only of one species (*Helic. erato*) I know an aberrative form having the forewings entirely black, without any markings. Hindwings oval with evenly rounded, very seldom feebly undulate termen. As in the Indian *Euploea*, we find on the inner margin of the forewings beneath and in the costal area of the upper side of the hindwings a friction surface, frequently displaying a silky gloss, but never any tufts or pencils of hair as are characteristic of many *Ithomiinae*. The subcostal is five-branched, the system of radials complete and intact, displaying no tendency to dissolve or give way to an higher development of the costal or median systems of veins. In the forewing the cell is mostly broad and about half the length of the wing, in the hindwing short and narrow; the former frequently has near the base a median spur; the submedian is single at the base; but the hindwings lack the anal fold found in most other Nymphalids, serving to receive the abdomen when at rest.

All the species of *Heliconius* eagerly visit flowers, many displaying a decided predilection for certain blossoms; they are anything but shy, and even when frightened, fly so slowly that they are without any difficulty captured unless they fly too high. Once in the net, they generally keep quite still, so that it is easy to have perfect specimens. The colouring is mostly yellow, brown-yellow or red upon a black ground, more rarely blue and very seldom green. The pupa often with silvery spots.

narcaeae. **H. narcaeae** Godt. (= eucrate Hbn.) (72a). The typical form is that from Southern Brazil, distinguished by its large size, a white apical spot, lemon-yellow subapical band, and brown-yellow, black-marked discus of the forewings; hindwing with a bright yellow longitudinal band. — ab. **connexa** (72 a) ab. nov. is the name I have given to the small, generally dull coloured form having the brown-yellow discal markings of the forewing reduced to such a degree that the subapical band is separated from it by a black transverse bar. — *polychrous.* In ab. **polychrous** Fldr. (72 b) the black and lemon-yellow tints are greatly increased, with a corresponding reduction of the brown-yellow. — As in all the brightly coloured *Heliconius*, there occur, especially towards the end of longer periods of rain, specimens suffused with black, offering all possible grades and transitions to the typical form; in other species they have received special names, as f. i. *subnubilus* Stich. and *obscurior* Stich. (belonging to *novatus*), but unjustly, as they cannot be either strictly defined nor limited to one species or subspecies. — ab. **satis** Weym. (= infuscata Stgr.) (72 a) resembles typical *narcaeae*, but on the hindwing the longitudinal band is not pale yellow, but brown-yellow, and the apical spot of the forewings mostly suffused with fuscous. — *flavomaculatus* Weym. (72 a) refers to a local form distinguished by having the apical spot of the forewing lemon-yellow; I have never taken this form together with *narcaeae* or any one of its aberrations with white apical spots; it is only found in Central Brazil, as f. i. near Bahia and in Espiritu Santo, together with the likewise yellow-spotted *Mechanitis nessaea*; *narcaeae*, on the other hand, flies exclusively in Southern Brazil, in company of *Mechanitis lysimnia* which also has white spots. — Besides greatly varying in colour, the species also deviates in the markings which may vary in either direction. Only one form shall be specially named: ab. **physcoa** ab. nov. (72 b). This form which I took occasionally at Santos, where it was, however, always scarce, has the yellow band on the hindwing very much broader, which enables one to distinguish it even when flying, notwithstanding its great resemblance in colouring to *polychrous*. — *H. narcaeae* is one of the commonest *Heliconius* and butterflies altogether. It is limited to the eastern parts of Central and Southern Brazil, the form *flavomaculatus* occurring more in the North, *eucrate* in the South. Localities where, as it is stated in "Tierreich" (Vol. 22, p. 40), both occur side by side, are not known. Occasionally they come even into the gardens, and are found in the suburbs of Rio. — The egg is conoidal, lemon-yellow; the larva feeds on various species of Passiflora; it is brown-yellow, later on whitish with black markings and black spines, those at the head longer and slightly curving backwards. Pupa with rather long wing-shaped appendages at the head, and black dorsal spines, yellow-brown, marked with fuscous; abdomen adorned at the sides with faint silvery spots. The imago is found throughout the year, without any interruption, in open spots, along garden-hedges or bamboo-walls, sipping the honey from a great variety of flowers, generally keeping the wings closed, whereas other *Heliconius*, as f. i. *phyllis*, keep them generally wide open; the species is exceedingly common and, unless flying too high, easy to capture.

isemenius. **H. isemenius** Latr. (= fritschei Möschl.) (72 b) is found in Colombia, where it is in certain localities very common; it is an exact copy of *Melinaea messatis* (33 d) with which it associates, undergoing all the variations in colouring to which this Danaid species is subject. — ab. **immoderata** Stich. has on the hindwing an uninterrupted, black median band of greater width than in typical *isemenius*, whereas in ab. **defasciatus** Neust. this band has been reduced to mere traces left at the apex of the hindwing. — Intermediate between these two is ab. **fasciatus** Godm. and Salv., which is found farther north, in southern Central America; here the black band on the hindwings is complete, but not increased in width. — **faunus** Stgr. (72 c), likewise found in Colombia together with the typical form, has on the forewing the apical spots yellow instead of white; — in **hermanni** Riff. these are greatly reduced in size. In the ♂ we still find traces of the white macular band traversing the wing behind the cell. Not scarce, but local.

telchinia. **H. telchinia** Dbl. (72 b). This, the largest species of *Heliconius* known, is by most authors united with *isemenius*; but, although connected with it by intermediate forms, it is of quite different appearance. The dis-

cal area of the forewing, and the hindwings are those of a gigantic *narcaea* ab. *satis* (72 a), but the very broad apex of the forewings has two rows of sulphur-yellow spots. From Colombia to Honduras. — *clarescens* Btlr., *clarescens*, from the Volcano of Chiriqui and Panama, lacks on the forewing the dash connecting the discal spot with the base, and the median band on the hindwing has almost entirely disappeared. Locally very common.

H. hippola Hew. (72 c). Ground-colour bright rufous, both wings with quite narrow black termen, the *hippola*, spots on the forewing greatly reduced. — **lyrcaeus** Weym., probably from Peru, like the preceding, has the *lyrcaeus*, black spots somewhat larger, the median band on the hindwings, however, reduced to mere traces. — The species seems to be very local or to occur only in places whence we do not often receive material, for it is very rare in collections.

H. numata Cr. (= *pione* Hbn.). Easily recognized by the uncommonly broad black termen of the *numata*, hindwings which, together with the likewise very broad median band, gives the hindwing an almost black appearance. Guayana. — ab. **guiensis** Riff. has the median band of the hindwing club-shaped, beginning quite *guiensis*, narrow at the anal margin, and widening towards the apex; British Guayana. — In **melanops** Weym. (72 c) *melanops*, the median band of the hindwing confluesces with the black termen, rendering the lower half of the wing entirely black; likewise from Guayana. — **superioris** Btlr. (= *maecenas* Weym.) has on the forewing the oblique band *superioris*, narrower or broken up into spots, the median band of the hindwing separated from the black termen by a streak of the brown-yellow ground-colour. From Amazonas. — A similar form is **gordius** Weym. (72 d) from the Up- *gordius*, per Amazon, but here the apex of the forewing is very broadly and contiguously sulphur-yellow, spotted with brown-yellow. — ab. **isabellinus** Bates (72 c) has the sulphur-yellow apical half of the forewing tinged with brown- *isabellinus*, yellow, very much like the ground-colour; in **mavors** Weym. the latter is deeper and duller brown. Both these *mavors*, yellow-brown forms come from the Amazon. — **praelautus** Stich. is a form from the Ucayali, having the broader *praelautus*, discal band united with the subapical spot, both being of the same colour. Apparently less abundant than *narcaea* although much less scarce than *hippola*. — **geminatus** Weym. (= *superioris* Riff.) (72 d) is characterized by the *geminatus*, very brilliant white-yellow apical spots; on the hindwing the band is not only completely separated from the still very broad, black termen, but dissolves into barely connected triangular spots; the apex and termen occasionally with small pale yellow spots. — **nubifer** Btlr. from Fonteboa has the ground-colour mahogany-brown, *nubifer*, with broader black bands, but without the whitish spots visible in the apical area or on the under surface of *geminatus*. Widely distributed on the Amazon: Para, Santarem, Obidos, Tefé; locally common.

H. silvana comprises more than half a dozen of forms. Wings very long, smaller than in the preceding species; the sulphur-yellow band of the forewings gradually shades into the ground-colour, without being separated by black. From the typical **silvana** Cr. (= *clara* Hbn.) (72 c), from Venezuela, Guayana and North-Brazil, *silvana*, **ethra** Hbn. (= *dryalus* Hpffr., *zuleika* Buch., *hopfferi* Neust.) (72 e) is at once distinguished by the very heavy *ethra*, black markings; on the hindwing the band is deep black throughout, not interrupted, very slightly denticulate, its outer edge encroached upon by rays emitted from the broadly black termen. The costal band of the forewing is tinged with brilliant sulphur-yellow, the wedge-shaped discal spot large, drawn-out to a sharp point near the base of the cell. In its entire appearance it is so much like *narcaea flavomaculata* that they can hardly be distinguished from one another when flying. I also took it at Bahia near the cemetery, in the same places as *flavomaculata*. — **brasiliensis** Neust. (72 d) is intermediate between *ethra* and *robigus*. — In **robigus** *brasiliensis*, Weym. (72 d), from Southern Brazil, the forewing is divided into a black apical half and a brown-yellow *robigus*, inner half, gradually shading into lemon-yellow distally, with an almost isolated, generally not very large, discal spot; when flying it may be mistaken for *narcaea satis* on account of the absence of the lemon-yellow band of the hindwing. — **diffusa** Btlr. refers to the Para form, hardly to be distinguished from typical *silvana*; *diffusa*, the median band of the hindwing is completely cut off from the black termen, but contiguous and outwardly denticulate. — The most northerly form is **metaphorus** Weym. (= *antioquensis* Stgr., *ocanna* Buch.) from *metaphorus*, Colombia and Ecuador; Costa more deeply black, the discal spot larger, the yellow transverse band of the forewing more sharply separated from the ground-colour, the median band of the hindwings reduced to a mere trace at the apex. — Farther south, along the west-coast of South-America, we find in Peru **mirifica** Stich., *mirifica*, which has on the forewing the outer spots subhyaline and partially suffused with blackish; the median band of the hindwing consists of triangular, isolated spots, giving it a superficial resemblance to *mirus*, which has, however, the spots of the forewings not transparent. — **adela** Neust. has the shape and apical macular band *adela*, of *silvana*, but otherwise rather resembles *narcaea*; indeed its author considers it to be a species of its own; from Iquitos. Of all these forms I have only observed in nature *robigus* and *ethra*, which in Brazil associated, though always singly, with the other brown-yellow *Helionius*.

H. eucoma. The twelve forms which are known of this species, inhabit the Amazon Valley and Peru, extending northward as far as Panama. The figured **metalilis** Btlr. (= *metabilis* Ky.) (72 e) resembles in its *metalilis*, outward appearance a small-sized, faded *telchinia*, together with which it is found in Colombia. But it also occurs in Venezuela and even on the island of Curaçao. Whether specimens from these localities resemble in every respect the figured specimen, I cannot decide, having none from the island at hand. —

semiflavida. **semiflavida** Weym. (= *daguanus* Stgr.) has the transverse band of the forewing very brilliant lemon-yellow, the black median band of the hindwing broader than in *metalilis*; from Cauca and Dagua (Colombia). — **claudia** Godm. and *Salv.* from Panama is distinguished by the darker ground-colour, which is mahogany instead of yellowish-brown. This, together with the reduced median band of the hindwing, gives it a great resemblance to *Hel. clara*, with which this form associates in Panama. — **eucoma** Hbn. Typical specimens as found on the Lower Amazon, are yellow-brown; forewing with the apex black, enclosing minute yellow spots; the costal margin united with the discal spot; on the submedian vein always a broad streak; the median band on the hindwing contiguous, differing in this from *claudia*; otherwise resembling *tyndarus* Weym. (72 e), but not so dark, rather yellow-brown; occurs in Bolivia. — **aërotome** Fldr. (72 f, wrongly named *gradatus*), from Peru and the adjacent parts of Brazil, has the ground-colour likewise dark, deep chestnut-brown, sharply contrasting with the yellow band of the forewing and the small apical spots. — ab. **flavofasciata** Weym. is an unusual aberration of the typical *eucoma*, found with the latter at Pará; hindwing with a yellow anterior band, giving it a close resemblance to several *Itomiinae* occurring with it at the mouth of the Amazon. — **ethilla** Godt. which also belongs here, is probably identical with **flavidus** Weym.; should this prove true, it would be the first-described form of the group as well as the type. It resembles exactly *semiflavida* Weym., but has not only the forewing largely sulphur-yellow, but also on the hindwing, between median band and costal margin, a broad streak, the brown-yellow ground-colour being limited to the veins at the base of the forewings and a streak along the inner margin; from Venezuela. — **cephallenia** Fldr., which is unknown to me, is said to have the entire hindwing black-brown, with the exception of a narrow yellow-brown band behind the costal margin; from Surinam. — **juntana** Riff. from West-Colombia closely resembles *semiflavida*, but has the apex altogether black, without any light spots. — **mentor** Weym., from Cauca is not unlike the figured *metalilis* (72 e), but of broader build; forewings with clear sulphur-yellow spots, that are neither hyaline nor dusted over with fuscous, but smaller and more isolated; on the forewing the black apical area is bordered with sulphur-yellow; on the hindwing the median band frequently dissolved into spots. — Finally there remains to be mentioned **numismaticus** Weym. (72 e), which is sufficiently characterized by our figure; from the Lower Amazon. All the forms of this species seem to be rather scarce, and are comparatively rare in collections.

gradatus. **H. gradatus** Weym. (73 b) closely resembles *numatus* and *melanops* in the broad median band of the hindwings which is scarcely separated from the equally broad black termen. Forewings with deep black apex, inwardly bordered by a clear yellow band interrupting the brown-yellow ground-colour which is but slightly spotted with black; from Pebas on the Amazon. — **thielei** Riff. from Cayenne has 3 yellow subapical spots.

sulphureus. **H. sulphureus** Weym. (72 f) from the Rio Negro in Brazil has the ground-colour pale sulphur-yellow, only the veins and the black submedian band slightly shaded with ferruginous.

paraënsis. **H. paraënsis** Riff. closely resembles *eucoma*, but is larger, and the yellow band of the forewings is more denticulate distally and less sharply defined; the black submedian streak traverses the entire forewing; on the hindwing the black terminal border is at the middle broader than in *eucoma*, the median band continuous, not denticulate, in the outer half about 3 mm. wide, slightly tapering towards the inner margin. Upper surface of the forewing with apical spots, of the hindwing without terminal spots; these however are present underneath, where the basal area is almost entirely sulphur-yellow. Para. — **latus** Riff., from Itaituba on the Rio Tapajos, has on the forewings above the submedian stripe broader, and the yellow band, especially on the veins, dusted with brownish; on the hindwing the median band considerably broader.

aulicus. **H. aulicus** Weym., from Venezuela, is closely related to *eucoma*, but the black apex of the forewing lacks the yellow spots, and the sulphur-yellow transverse band is, like that of *latus*, feebly denticulate, also distally; the black spot at the end of the cell irregular, occasionally separated from the black costa; the submedian stripe beginning as a narrow line, gradually growing broader towards the termen. The median band of the hindwing made up of elongate, proximally confluent spots, at the apex united with the black costa. — **zobrysi** Fruhst. from Matto Grosso chiefly differs from typical *aulicus* Riff. in having on the forewing, the basal streak in the cell reduced and on the hindwings the black bands broader.

schulzi. **H. schulzi** Riff. Forewing with very broad, sulphur-yellow band, costa and submedian finely black, the wedge-shaped spot small, oval, not drawn out to a point; hindwings almost as in *silvana* (72 c), but the median band not curved, separated at the inner margin and broken up into small spots; at the apex 2 or 3 large sulphur-yellow spots. Pará.

vetustus. **H. vetustus** Btlr. differs from the figured **metellus** Weym. (72 f) in having the ground-colour brilliant orange, not chestnut-brown. The forewings resemble those of *schulzi*, but have the yellow oblique band narrower; from Guayana; *metellus* from the Lower Amazon has on the forewing the black spots larger, likewise the apex and anal angle more black.

mira. **H. novatus**. Among the forms referred to this species, the most lovely is **mira** Weym. (73 a) from Peru.

The black apical area encloses numerous small sulphur-yellow spots arranged in two rows and continuing somewhat on the rufous discal area. Hindwing with a series of isolated black spots crossing the middle of the wing; the apex black, with a light tear-shaped spot. — A very similar form, **novatus** Bat. (= *illustris* Weym., *novatus* spadicarius Weeks) (72 f) from Bolivia and Peru, has the brown-yellow ground-colour paler, rather dull ochreous, and the black markings of the forewings partly reduced, giving way to a sulphur-yellow band. Hindwing precisely as in *mira*. — In **leopardus** Weym. (73 a) from Bolivia the oblique band of the forewing is quite broad, brilliant lemon-yellow and fairly well defined, sharply contrasting with the duller, more chestnut-brown ground-colour. — ab. **subnubilus** Stich. from Peru, and ab. **obscurior** Stich. from Bolivia, refer to darker specimens suffused with fuscous, such as are known among all the yellow-brown species of *Heliconius*; such melanisms are especially common and pregnant among the various forms of *narcaea*, without, however, having received any special names. *leopardus*.
subnubilus.
obscurior.

H. urania Müll. (= *pasithoë* Cr., *hecale* F.) (73 a). This easily recognizable species is referred to in the three latest works under its three synonyms. MÜLLER gave this name to a *Heliconius* which is unmistakably recognized from his figure, and which cannot be confounded with LINNÉ'S *Papilio urania* (a *Tenaris*). For that reason we follow WEYMER. Two forms are known, both black with a dull white, black-spotted band crossing the forewing and with three whitish subapical spots. The typical form of Guayana has the groundcolour above coal-black, whereas in **fulvescens** Lathy (73 a) from Demerara the inner half is suffused with brown. This species is one of the less common *Heliconius*. *uranias*.
fulvescens.

H. aristiona. It is doubtful whether the 20 forms described all belong to one and the same species, the greater number of them being distinctly separated geographically. This seems less to depend upon the climatic conditions of their home than upon the models which they find there, that is to say upon the outward appearance of the Danaid species which occur in the same locality. The typical **aristiona** Hew. (73 d) comes from Bolivia and Peru, being only found, although not everywhere, where the exceedingly common *Melinaea mothone* (32 e) occurs; there we find also *Mechanitis deceptus*, *Hyposcada fallax* (38 c), *Ceratinia semifulva* (34 d), *Eresia murena* (91 c), a very similar *lampeto*-form of the genus *Eueides* etc.; indeed in some localities the majority of all the more common butterflies look like *H. aristiona*, and it is only after their capture that one realizes that but few of them really belong to that species. Very similar to this quite unmistakable, typical *aristiona* is the form **bicolorata** Btlr. (= *peruana* Hpffr.) (73 d), likewise from Peru; the black apex is cut off pretty straight from the rufous discal area, and the brown colour reaches the termen in cell 1 and 2 (between submedian vein and the median nervules). — **splendida** Weym. (73 d). Like *aristiona*, but with the base of the forewings and the apex of the hindwings dusted with dull chestnut-brown; from Bolivia. — **timaeus** Riff. (73 d) from Peru resembles in the forewing *aristiona typica*, being somewhat more profusely spotted with black; but the hindwing is not black, but brown-yellow, with an incomplete band similar to that found in the forewing, and an equally interrupted series of median spots, both obsolete before the apex. — **phalaris** Weym. (73 e), from the Brazilian Rio Madeira, has the entire hindwing deep black, only the apical area being brilliant rufous whereas the apex of the forewing is laved with rufous just from the tip inwards. — In **seraphion** Weym. (73 c) from Iquitos the apex of the forewing is black, with a yellow-brown subapical band, sharply separated from the likewise yellow-brown discal area by a black oblique band. On the hindwing a black median band separated from the black termen by the yellow-brown ground-colour. This is undoubtedly due to the influence of certain forms of *Heliconius* belonging to other groups flying in the same locality, giving rise to such a great similarity that when flying neither can be distinguished from the other. — **arcuella** Druce (73 c) from Ecuador is quite similar, but more brilliant yellow; in its markings it almost exactly coincides with the following *aurora*, only the apex of the forewing is quite different. — **aurora** Bat. (73 b) would be like *aristiona*, were it not for a lemon-yellow oblique spot in the apex of the forewing which gives it an entirely different look. — **elegans** Weym. (73 c) from Peru, Bolivia and Amazonas, possesses likewise the lemon-yellow apical streak; but this is not separated from the brown-yellow apical area by a broadly black band, but gradually shades into it, only a few black scales occasionally indicating their line of contact. From *aurora* it is easily distinguished by having on the hindwing the black median band separated from the black termen by a streak of the yellow-brown ground-colour. — **euphrasius** Weym. (73 b) from Colombia and Ecuador probably does not belong here, but rather to the next following group. Forewing like that of *novatus*, but lacking the apical spots; the hindwing is traversed from the anal angle to the middle of the costal margin by a dirty brown band, leaving the base of the hindwings as well as a large spot in the lower half of the same wing suffused with black; also the forewing obscured with sooty black. — **lenaeus** Weym. (73 e) from Ecuador, Peru and Colombia has the forewings marked as in *euphrasius*, but the ground-colour is yellow-brown, not suffused with black, the lemon-yellow band is narrower, the black discal spots smaller, the submedian band greatly reduced. The hindwings, however, are quite different, uniformly yellow-brown, occasionally traversed by a dark median row of dots, which give it a surprising resemblance to *Melinaea zaneka* (32 e) which also flies in Ecuador. In exactly the same way the form **tarapotensis** Riff. from Tarapoto coincides with its model *Melinaea tarapotensis* Haensch, a form of *Mel. menophilus* (32 e) flying in the same locality; the base of the hindwings is adorned with rows of black dots, which, however, only reach to *bicolorata*.
splendida.
timaeus.
phalaris.
seraphion.
arcuella.
aurora.
elegans.
euphrasius.
lenaeus.

euphone. the middle of the wing. — *euphone* Fldr., widely distributed in north-eastern South-America, resembles *Hel. tarapotensis*, but the black markings are heavier, more profuse, and the band of the hindwings is not made up of an incomplete row of spots, but forms a complete and contiguous median fascia, recalling a strongly marked *Melin. menophilus*. — This similarity exists also in *pretiosus* Weym. (72 e); hindwing with the band almost complete, the apex of the forewing laved with rufous; from Sarayacu in Peru. — *staudingeri* Weym. (73 e) is somewhat larger, with the black spots on the forewings more contiguous; Huallaga. — *messene* Fldr., one of the more common of Bogotá-butterflies, particularly abundant in the higher, more open districts of Colombia, represents a melanotic form of *euphone*; forewing with the entire apical and basal areas black, leaving only an inwardly brown, outwardly yellow band; hindwings chiefly brown-black. It thus closely resembles *Mechanitis messenoides* (33 f) and *Melinaea messenina*, two Danaiids named after it, the latter very much like *mothone* (32 e), but differing from it in having on the forewing the band outwardly lemon-yellow. *Hel. messene*, *Melin. messenina* and *Mech. messenoides* are always found together, being on the wing only distinguished by their size. — *idalion* Weym. is closely allied to *euphone*, the only chief differences being the very distinct apical spots of the forewings, the 3 upper ones of which are nearly united, whereas the lower one, as well as the broader submedian band and wedge-shaped cell-spot are small. Colombia. — The last form is *floridus* Weym. (73 c), widely distributed through northern South-America, especially also in Bolivia and Peru. It may be recognized by having in the apical area of the forewing two lemon-yellow macular bands, separated from one another by the brown-yellow ground-colour.

ithaka. *H. ithaka* Fldr. (73 f) from Colombia resembles in the forewing *euphrasius* (73 b), but has the ground-colour clearer yellow-brown, less obscured with fuscous; the hindwing, however, is completely black, with the exception of a transcellular dash of rufous and 3—5 small white anteterminal spots. — *ab. vittatus* Btlr., likewise from Colombia, has the forewing as in *ithaka*, but the hindwings lighter, not quite black, but only with a black median band made up of spots which are confluent above. — In *ab. marius* Weym. (73 b) the black colouring is even more reduced, the spots of the forewing are smaller, those of the median band of the hindwing separated; from Colombia, especially Muzo, San Martin; formerly often found in so-called "Bogota"-collections. — *cajetani* Neust. resembles typical *ithaka*, but the black median spot is bisected, confluent with the termen in cell 4, where it cuts off a sulphur-yellow spot of the oblique band. The terminal spot in cell 3 likewise very large, being united with a portion of the upper median spot; forewing with 3 yellow apical spots. Colombia. — *ithaka* seems to be rather common in the valleys surrounding Monte Tolima.

H. pardalinus and its forms seem to take farther south the place of the preceding species, inhabiting the Amazon-Valley, Ecuador, Peru and Bolivia. — *dilatatus* Weym. (73 e) from Ecuador and Peru is dull yellowish-brown; the forewings strongly spotted with black, the apex yellow-brown, with lemon-yellow spots of variable number and size and dissected by black veins. — *radiosus* Btlr. differs but very slightly in the somewhat duller colouring, and the broader black border and median band of the hindwing. This, especially if the lemon-yellow apical spots of the forewing are rather large, gives it a deceptive resemblance to the form *floridus* of the preceding group. — *pardalinus* Bat. from the Upper Amazon is like *radiosus*, but the ground-colour is even darker brown, more strongly contrasting with the generally broader, whitish-yellow transverse band of the forewing; the apex itself entirely black, whereas in *radiosus* and *dilatatus* it encloses on the forewing some dashes of ferruginous. — *lucescens* Weym. from the Lower Amazon (particularly from Santarem where a great number of *Heliconius* are found), but occurring aberratively also on the Upper Amazon, together with the typical form, has the apex much more profusely adorned with lemon-yellow of which occasionally a bright band extends to beyond the submedian vein, sometimes faded to bone-white. — *maeon* Weym. (habitat not known, but without any doubt the Amazon) resembles *dilatatus*, but has the brown oblique band of the forewing narrower and rather broken up into spots, the black discal spots large, confluent, and on the hindwing the median band dissolved into triangular spots. — *tithoreides* Stgr. from Peru resembles *radiosus*, but is of larger size, the wings are broader, the black markings increased, more confluent, on the hindwing the median band more regular and continuous.

H. fortunatus. On account of the great variability of the markings characteristic of the genus, it is difficult to decide whether the two forms referred to this species should not rather be classed with some other group. — *spurius* Weym. (74 a) from the Lower Amazon closely resembles *floridus* (73 c) in all but the apical area, which displays a series of lemon-yellow spots and is separated from the yellow-brown discal area by an oblique band, remarkable on account of its unusually horizontal course from the middle of the costa to the middle of the termen. — *fortunatus* Weym. from Villa Bella on the Lower Amazon, possesses also this almost horizontal band, but lacks the apical row of spots, and has on the hindwing the black median band strongly denticulate.

sergestus. *H. sergestus* Weym. (74 a) is probably the southern representative of the preceding group, being found in Peru, where GARLEPP discovered it at Tarapoto. Resembles the preceding, also in the brilliant rufous colour-

ing, the apex being always immaculately black as in typical *fortunatus*; on the forewing the lemon-yellow band somewhat steeper and narrower; the hindwing very bright rufous, with narrow median band and narrow, black, inwardly frayed termen.

H. ennus Weym. (74 a), from Amazonas, is black, yellowish-brown and lemon-yellow, the colours being distributed very much as in the preceding; but it is easily distinguished by the band of the forewing being steeper, slightly curved and not so close to the termen at the middle. It is followed by a subapical row of small white spots, and again, immediately before the termen, a series of pale spots, rather complete in the typical form, but interrupted or entirely obsolete in the much blacker form **nigrofasciatus** Weym. (74 a) from the Rio Madeira; this latter has also the curved lemon-yellow transverse band reduced by the increased black colouring, with its inner edge irregularly defined. But the hindwings are in both forms alike, having a rather broad, isolated, distally dentate median band and the termen inwardly deeply dentate, broad, with white terminal spots arranged in pairs. *ennus.*
nigrofasciatus.

H. quitaleña displays in its typical form a pattern which is somewhat different from that of the hitherto described forms; the ground-colour of **quitaleña** Hew. (73 f) is not bean-yellow or ochreous-brown, but a brilliant orange-red; the black apical area of the forewings contains two lemon-yellow macular bands placed at about equal distance from the termen, from the red discus and from one another; on the hindwing a greatly reduced, although contiguous, median band, and white terminal spots, arranged in pairs on the narrow black terminal border. — In **felix** Weym. (74 b) from Bolivia and Peru the forewing has in addition on the termen a third row of spots, and the median band of the hindwing is broken up into small black wedges. — **consors** Weym. (74 b), although on the whole more black, has the markings still thin enough not to interfere with the brilliant fulvous ground-colour. But on the forewings the light apical spots are greatly reduced, being only represented by one row and traces of a second; like the preceding, from Peru and Bolivia. — **sisyphus** Salv. from Peru resembles *felix*, but has the ground-colour duller and darker, the transverse band of the forewing not sulphur-yellow, but like the ground-colour. — **jonas** Weym., likewise from Peru, also resembles *felix*, but with deep yellow-brown ground-colour and the black markings diminished to such a degree that they do not encroach upon the oblique band which is broadly and uninterruptedly yellow. — **versicolor** Weym. (74 b) from the Rio Madeira is at once distinguished by the ochreous spots on the apex of the forewing, which latter appears in consequence mottled with brown, black and lemon-yellow, recalling *dilatus* (73 e). *quitaleña.*
felix.
consors.
sisyphus.
jonas.
versicolor.

H. anderida. The forms which are referred to this group, differ greatly in colouring and markings from each other, and it is probable that the study of their anatomical structure which unfortunately has not been made as yet, will separate some of them. The name-type **anderida** Hew. (73 f) is bright red-brown, with the basal area of the forewing brilliant fulvous. Both the apical and transverse bands break up into a number of isolated pale spots; the submedian band a fine line, the median band of the hindwing narrow. The species has a wide range extending from Venezuela to Colombia, and in Central America to Honduras, but seems rather local. — Quite a different aspect is presented by **clara** F. (= *melicerta* Bat.) (73 f) from Guayana, Colombia and Panama, which undoubtedly has undergone some mimetic change that has rendered it so unlike the type. Ground-colour much duller brown, the forewing with very slightly spotted, broadly black apex and an irregular oblique band dissected by the discocellular spot; hindwing without any median band, but with broadly black termen. It associates with the very similar *Melinæa idae* (33 c), *Mechanitis macrinus* (34 b) and *Callithomia beronilla* (36 c). — **semiphorus** Stgr. from Colombia resembles *clara*, but has on the hindwing the terminal border narrower, with a median band branching off from it at the apex, dissolving into spots towards the middle. — **holcophorus** Stgr. (74 b) from Colombia reapproaches the type again, but the median band is very brilliant lemon-yellow, irregularly dentate, but only reaching to the lower median nervule, where it is sharply separated from the dull rufous ground-colour. — **annetta** Riff., likewise from Colombia, has the forewings marked as in *anderida*, whereas the hindwings display the peculiar pattern of *semiphorus*. — **albucilla** Bat. from Panama exactly resembles *anderida*, but the apical spots and the oblique band are white instead of yellow. — **zuleika** Hew. (74 c) from Central America has undergone such a complete mimetic change that it is hard to believe it to be the same species as *anderida*. Although of larger size, it closely resembles the (in Central America) so greatly favoured models of *Callithomia Lezia* (36 b), *Ceratinia callispila* (35 a) and *Dircenna celestina* (37 c). Forewing deep black, dusted with red-brown at base and inner margin, the apex heavily spotted with yellow or white, the latter form being ab. **albipunctata** Riff., especially found on the Volcano Chiriqui. — **chrysantis** Godm. and Salv. from Nicaragua has on the forewing the spots united into a chain, and the cell of the hindwings traversed by a sulphur-yellow band. — **xanthica** Bat. from Panama resembles *zuleika* (74 c), but has not only the basal area of the forewing, but its entire inner half brown, even the black discocellular spot being surrounded by the brown ground. — **jucunda** Bat., likewise from Panama, is like *xanthica*, but has the ground-colour darker brown, with white, instead of yellow, apical spots. — A completely black ground-colour we find in **fornarina** Hew. (74 c) from Guatemala, only interrupted on the forewing by the apical spots and the brilliant lemon-yellow, strongly dentate transverse band. — **discomaculatus** Weym. is in a way intermediate between *zuleika* and *fornarina* (74 c); resembling the latter, but with brown hindwings and similar *anderida.*
clara.
semiphorus.
holcophorus.
annetta.
albucilla.
zuleika.
albipunctata.
chrysantis.
xanthica.
jucunda.
fornarina.
discomaculatus.

muzoënsis. submedian spots on the forewing; from Honduras. — ab. *muzoënsis* *Neust.*, from Muzo in Colombia, is more like *clara*, but has on the forewing a second row of 5 yellow subapical spots. Most of these forms are, wherever they occur, rather common.

H. cydno. In this group to which RIFFARTH in his classical Work on the *Heliconiidae* refers about 20 forms, we find, with a single exception (*galanthus*), on the hindwing a pale, white, lemon-yellow or light blue band which, however, may greatly vary in its position upon the otherwise black wing. Forewings black, often with a lovely blue lustre, nearly always with lemon-yellow or white bands or spots. — *hermogenes* *Hew.* (74 d) from the Cauca Valley has the apical area of the black forewings spotted with white, as in the white-spotted variety of *zuleika*; hindwing with a pale yellow submarginal band, about 3—4 mm from the terminal border. This gives it a close resemblance to *Tithorea humboldti* (32 a) or, if the spots are clear white, to its aberration *albomaculata* *Hsch.* but only on the upper surface (there being also another *Heliconius* mimicking the under surface of that Danaid species). — *galanthus* *Bat.* (74 d) from Central America (and Peru?) is above a lovely black-blue; forewing with a broadly white, wedge-shaped band, hindwing with a terminal row of white spots. Above it is a true representation of *Hel. leuce* (77 e), which, however, lacks on the hindwing the terminal spots; but underneath it looks entirely different, with brown curved stripes crossing the cell and accompanying the termen. In Honduras both species which, although not closely allied, cannot be distinguished when flying, are generally met with on the same bush or even on the same blossoms. — *zelinde* *Btlr.* (74 d) is another form from Western Colombia, having on the under surface of the hindwing the white marginal spots very distinct, but above only faintly shining through from underneath. — *stübeli* *Riff.* has on the forewing the band more regular, not projecting into the cell, but in addition two rows of white terminal spots Costa Rica. — *diotrephe* *Hew.* Forewings with white marginal spots above, hindwings with a yellow costal streak underneath; otherwise like *galanthus*. From Nicaragua and Guatemala. — *chioneus* *Bat.* (74 c) has the white band of the forewing narrower, more uniform than in *galanthus*; on the hindwing the marginal spots are united into a submarginal band, likewise white. West Colombia and Panama. — In typical *cydno* *Dbd.* and *Hew.* (74 d) the band of the forewing is yellow; widely distributed and very common in Colombia, every lot of "Bogotá"-butterflies containing it. — *hahneli* *Stgr.* (74 c) from Merida (Venezuela), discovered by Dr. HAHNEL, has on the forewing the yellow band narrower, with a few spots directly before the apex. — *alitheia* *Hew.* from Ecuador is almost like *hahneli*, but on the hindwings the submarginal spots form a broad terminal band, without any black between them and the termen. — *broneus* *Stich.* has in the place of the regular band of the hindwing some triangular terminal spots. — *haenschii* *Riff.* from Balzabamba (Ecuador), a discovery of Dr. HAENSCH's, is an *alitheia* with white instead of yellow band of the forewing. — *temerinda* *Hew.* (= *tamarinda* *Ky.*, *temerinda* *Riff.*) from Colombia has the band of the hindwing lemon-yellow, but rather distant from the termen; the band of the forewing resembles that of *hahneli*, but is somewhat curved, either white or lemon-yellow (= *flavifascia* *nom. nud.*); apex often with a few dots. — *epicydnides* *Stgr.* (74 e) from Rio Dagua and the Cauca Valley has on the forewing the band divided into two lemon-yellow oblique stripes; the band of the hindwing occasionally margined with black spots. — in *subeydnides* *Stgr.* from the same locality the white band is on the hindwing even farther distant from the termen; in *cydnides* *Stgr.*, likewise from Colombia, it is placed at about 1 mm. from the termen, being about as broad as in *cydno*. — *weymeri* *Stgr.* (74 e) from the southern Cauca Valley and the Rio Dagua, resembles in the forewing *epicydnides*, but the hindwings lack the marginal border, having on either side a straight, broad, somewhat pointed median band traversing the cell directly behind the base. — Occasionally the forewings have in the place of the bands a larger, white median spot, and both wings underneath a row of round white submarginal spots: ab. *submarginalis* *Fassl* i. l. (74 e); on the other hand the forewings may also be on either side quite black as in *weymeri*: = ab. *gustavi* *Stgr.* (74 f).

pachinus. **H. pachinus** *Salv.* (74 f). This most characteristically marked species stands quite by itself. Upper surface black, forewing with two oblique bands, hindwing with one submarginal fascia. From the Volcano Chiriqui.

heurippa. **H. heurippa.** This small group forms a transition from the cydno- to the melpomene-group, the yellow oblique band of the forewing showing some red. In *heurippa* *Hew.* (75 a) from Colombia this band is broad, half yellow and half red. — *wernickei* *Stgr.* (75 a) resembles the preceding in the bi-coloured band, which is only somewhat more regular; hindwing with a broad, clear white submarginal band. — *emilius* *Weym.* (74 f as *fassli* *) has the bi-coloured band of the forewing narrower and that of the hindwing suffused with grey-blue. — In *rubellius* *Sm.* and *Ky.* (74 f) finally, the yellow portion of the quite narrow band has almost completely disappeared, and the hindwings are entirely black; all are found in Colombia.

melpomene. **H. melpomene** *L.* (75 a). The typical *melpomene* is found in Guayana, Northern Brazil, Ecuador, Peru and probably also in the adjacent parts of Bolivia. When fresh, it is brilliant black with a scarlet oblique band. But these colours fade very easily into black-brown and minium-red. In this state

*) This specimen had been sent to me as *fassli* *Weym.* i. l. Since, however, after the plate was printed, but before its publication, another *Heliconius* was described as *fassli*, this one received the name of *emilius* *Weym.*

they are frequently caught, but never leave the chrysalis like that; even while alive, this butterfly rapidly fades under the influence of sunshine and rain, a fact which is not often observed among tropical insects the colours of which generally resist for a long time to the weather. At the same time of the year and in the same localities we find together with *melpomene* a large number of butterflies belonging to the most heterogeneous families, as *Papilio*, *Pierids*, *Adelpha*, *Eresia* etc., all of which display on the forewing in the same place a carmine band on black ground. Whether all the *Heliconius* that have been described as local, seasonal or aberrative forms of *melpomene*, really belong to one and the same species, is neither proved nor likely. RIFFARTH, in his Monography on "Heliconius", after an exact study of this group, refers to it about 40 forms, some of which deviate considerably, and not in colouring alone. Other systems outside that of RIFFARTH not being recognised, we follow here his most painstaking Work. — In *melpomene* L. (75 a) the oblique spot is moderately large and blood-red (in the collections generally scarlet or minium-red), starting directly under the costa and descending below the first median nervule, where it is cut off almost parallel with this and projects outwardly to near the termen. — ab. *atrosecta* Riff. (75 a) is an aberrative form mentioned by RIFFARTH from Obidos, by OBERTHÜR from French Guayana, but which surely occurs within the entire range of the species; the red band is divided into segments by the black veins. — ab. *melpomenides* Riff. (75 b) has the spot much narrower, outwardly convex and likewise frequently interrupted; mentioned from Guayana. — *lucinda* Riff. (75 b) from Guayana and the Amazon, has the band irregularly defined inwardly and its upper portion proximally laved with lemon-yellow. — In *karschi* Riff., likewise from Guayana and the Lower Amazon, the band is yellow above and red beneath. — *lucia* Cr. (75 b) has the band outwardly and below red, inwardly and above yellow, preceded by a lemon-yellow spot traversing the cell. Guayana, Amazonas. — *melanippe* Riff. (75 b) has both the oblique cell-spot and the generally narrow band yellow, often with traces of red; therein it approaches the form *timareta* from western South America, but may be easily distinguished by the shape and position of the yellow spot. Surinam. — *diana* Riff. (75 c) from Guayana has both cell-spot and band lovely red, with additional red rays from the base of the wings, greatly varying in extent. — *deinia* Möschl. (mutabilis Btlr.) (75 c) is quite similar, but the cell-spot is very large and lemon-yellow; Guayana. In *funebria* Möschl. from Surinam only the fiery-red basal rays are remaining, cell-spot and band having disappeared. — *faustina* Stgr. resembles the following *cybele*, but has the cell spot margined with red distally. — *cybele* Cr. (75 c) from Guayana and Amazonas has nearly the entire basal half of the forewings brilliant red, the cellspot and the oblique macular band yellow; hindwing with a red subcostal streak. — *tyche* Bat., from Amazonas and Guayana; almost exactly like *diana* (75 c), but the hindwing with red rays radiating from the base below the red subcostal streak towards the termen. — *hippolyte* Bat. (75 c) from the same locality is similar, but lacks the cell-spot and has the oblique band as well as the other markings of the forewing red. — *angusta* Riff. (75 d) is very similar to *tyche*, but has on the forewing the band inwardly yellow, outwardly red; from Guayana. — ab. *aglaopeia* Stgr. (75 d) from Guayana has the entire distal half of the forewing black, at the most with only a few traces of red, whereas the basal half of both wings and the rays on the hindwing are beautifully red and well developed. — *thelxiope* Hbn. (75 d) from the Amazon has the basal half of the forewing and the entire hindwing red, in some localities vermilion (Pará), in others rather minium-red (Manaos); but the system of spots in the outer half of the forewings is lemon-yellow. — *thelxiopeia* Stgr. from Guayana has the red markings arranged as in *thelxiope*, but very deep and dark, even brown-red or violet. — In *aglaope* Fldr. (75 d) the red markings resemble those of *aglaopeia*, but are more brownish, and the black distal half of the forewing encloses a pale yellow, hook-shaped semi-band; occurs on the Amazon all the way up to Peru. — In *niepelti* Riff. the colouring is brilliant crimson, with a fine black dot in the cell of the forewing. — *isolda* Niep. has this spot, particularly in the ♂, larger, the apical spot white, slightly edged proximally. Ecuador. — In *rubripicta* Niep., likewise from Ecuador, the apical macular band as well as that part of the discal spot which is not red, is heavily dusted with red scales. — *adonides* Niep., from Ecuador approaches *plesseni* fa. *adonis*; on the forewing the discal spot within the cell yellowish, densely sprinkled with black scales; "the apical macular band distally edged with red, broadly shaded with yellow proximally; the *aglaope*-pattern red, the red basal colouring of *niepelti* very extensive as in *aglaope*, likewise the fiery rays; underneath it resembles *isolda*, but, like *aglaope*, with a transverse streak of rufous over the red rays, which is not found either in *isolda* or *niepelti*". — *gisela* Niep. is quite similar, "representing a transition from *aglaope* Fldr. to *plesseni pura* Niep.; the spots on the upper surface of the forewings white, the discal one proximally sprinkled with black scales and defined by a heavy, black spot. Hindwings as in *adonides*"; Ecuador. — *elevatus* Nöldn. from the Upper Amazon looks almost precisely like a typical *aglaope*, but the red basal colouring extends somewhat farther on the forewing and the lemon-yellow semi-band is rather broader. — *anna* Neust. is the form from Ecuador, distinguished by having the white band of the forewing slightly margined with red distally. — *equadoriensis* Neust. from Sarayacu has this white macular band reduced. — ab. *dione* Neust., likewise from Ecuador, has the outer macular band of the forewing yellow edged with brown; cell 3 and the middle cell tinged with brown. — Another form from Ecuador described by NIEPELT as "fraterna" I am unable to identify; the forewing is said to have a white apical spot, edged with red proximally, and a discal spot "which, being strongly encroached upon by the black ground-colour, has its entire inner portion red". —

rubra. **rubra** Stich. from Cuzco has the basal red deeper than in typical *aglaope*. — **gratiosa** Niep. is marked like *rubra*, but has the apical spot white, edged with red distally. — **bari** Oberth. (75e) from Guayana has the lemon-yellow discal spots rather spread about, and in addition a chain of apical spots. — In **mirabilis** Riff. from Peru the sub-apical band is very short, sulphur-yellow; but otherwise the colouring of the upper surface is entirely black, without any basal red. According to O. MICHAEL it is found always together with other forms of *aglaope*, in some localities more abundantly, otherwise always singly; it represents only a more or less perfectly developed melanism. — **unimaculata** Hew. (75 f) has the subapical band feebly edged with red distally, but both wings without the basal red. — ab. **rufescens** Stich. and **riffarthi** Stich. both resemble *hippolyta*, but have the forewings more profusely marked with red, the hindwings less so; *riffarthi* has, moreover, also the discal red well reduced. — **vicina** Mén. (75 e) resembles *aglaope*, but has in the place of the lemon-yellow semi-band a series of spots, the lower of which at the end of the cell is lemon-yellow, the semi-band projecting downwards; from the Upper Amazon. — ab. **rufolimbata** Btlr. (75 c) has the yellow band margined with red distally, and the cell-spot generally larger. — In the same way as this is related to *aglaope*, the form **amor** Stgr. (75 f) is related to *unimaculata* Hew., that is to say the yellow, outwardly red-margined semi-band is broken up into a number of spots; otherwise the entire upper surface is black-brown; both have a somewhat different shape, for which reason I assume that they do not belong here; from the Massauary. — **eulalia** Riff. (75 f) from Guayana has the forewing as in *vicina*, but less brilliant red, and the lemon-yellow spots more compact; on the hindwing the red transverse basal stripe is reduced and the red rays are altogether wanting above. In his original description RIFFARTH states that the lemon yellow spots on the forewing are edged with red. But one year afterwards he corrected this statement, expressly observing that the spots are not margined with red. Thus we figure in accordance with the author as *eulalia* a specimen without any red margin. — However there do exist such specimens, the figure of which, like most of our figures of *melpomene*, is taken from OBERTHÜR's excellent illustrations of this most variable species. But since RIFFARTH expressly dissociates this form from the name *eulalia*, I give it a new name: ab. **fascinatrix** nom. nov. (75 f). — **penelope** Stgr. (76 a) from Bolivia closely approaches *vicina*, but has the red of the upper surface strongly tinged with brown, and the lemon-yellow spot on the forewing often shaded with black along its periphery. — In ab. **margarita** Riff. (76 a) which, together with typical *penelope*, flies on the Rio Juntas, the transverse band under the costa of the hindwing is bright yellow, densely dusted with red, particularly on the veins. — **penelamanda** Stgr. has this band of the hindwing almost clear lemon-yellow, but on the forewing the otherwise yellow discal spot bright minimum-red; Bolivia. — **penelopeia** Stgr. (76 a) likewise from Bolivia, is intermediate between *penelope* and *penelamanda*, having the discal spot either red with yellow center, or, as RIFFARTH expressly observes, entirely red. — Also in Ecuador we find a number of allied forms of *melpomene* resembling *aglaope*. The most characteristic is *timareta* Hew. which has the upper surface completely black-brown, with only the spots in the discal area of the forewing lemon-yellow, thus being related to *penelope* in the same way as *unimaculata* is to *aglaope*; it closely resembles our figure of *pluto* (76 a), lacking only on the forewing the red spot above the anal angle, and on the hindwing the yellow band which also in *timareta* is nearly obsolete. — ab. **virgata** Stich., occurring together with the following aberrations in Ecuador, in the same localities as typical *timareta*, has the terminal area of the hindwing intersected by nail-shaped red rays. — In ab. **contigua** Weym. these stripes are at the base confluent, and in ab. **richardi** Riff. (76 b) preceded by a red transverse band; ab. **peregrina** Stich. has on the forewing instead of the yellow spots of *timareta* a yellow semi-band. — **pluto** Stgr. (76 a) from Bolivia is likewise a copy of *timareta*, but has a fine red spot on the lower median nervule of the upper surface of the forewing, about 2—3 mm. from the termen, and on the hindwing a transverse band half concealed under a scaling of fuscous. — **erebia** Riff. is undoubtedly also an aberrative form from Ecuador, differing from *timareta* in having the lemon-yellow spots on the forewing outwardly edged with red, as in *unimaculata* (75 f) and *amor* (75 f). — **amandus** Sm. and Ky. represents a distinct transition to the *amaryllis*-group, in that the yellow median stripe extends to the discal spot which is almost completely red, only occasionally faintly dusted with yellow inwardly; Bolivia, Peru. — The last form is **aphrodyte** Stgr. (76 b), likewise from Bolivia; ground-colour uniformly dark, only interrupted on the forewing by a frayed red transverse band similar to that of *melpomene atrosecta*, preceded by a yellow, more or less red-tinged discal spot. — Nearly all the forms of *melpomene*, those at least representing local races and not isolated aberrations, are in certain localities extremely common. Although we have here recorded all the names given by RIFFARTH, NIEPALT, STICHEL and others to quite unimportant aberrations, we are far from attaching importance to all of these. Applying the same principles, one might, following OBERTHÜR's work on *melpomene*, *vesta* and *telxiope* alone, invent dozens of new names, all of which would have more or at least as much value as many of the above mentioned forms. It is easy to see that such liberality in giving names does not add to clearness, but rather obstructs it, considering that dozens of such forms are found at the same time and in the same locality. Any work which reduces this jumble of names to a reasonable measure, would be of much more value than the introduction or description of further "formae novae".

rosina.

Of *H. amaryllis* we know several forms ranging from Guatemala and Venezuela to Peru: **rosina** Bsd.

(= *amaryllis* Dist., *petiverana* Godm. and Salv.) (76 b) resembles above, as may be judged from its synonyms, *petiverana*, *columbina*, *demophoon* etc.; forewing with narrow red transverse band, hindwing with yellow pointed subcostal streak. From Costa Rica, Panama and Colombia. — *amaryllis* Fldr., the name-type, from *amaryllis*, Peru and the adjacent parts of northern Brazil, resembles the preceding, but has the red band of the forewing much broader; on the under surface there are fewer red basal dots and the costal stripe is absent. — *euryas* Bsd. (= *melpomene* Bat.) and *euryades* Riff. (76 b) are mere aberrations of the preceding form, lacking above on the hindwings the yellow band, which only faintly shines through from underneath; *euryas* represents the form *rosina*, *euryades* *amaryllis*; hindwings without the yellow band. The former occurs in Central America, Colombia and Venezuela, *euryades* in Colombia, Venezuela and Trinidad. All the forms of this species may or may not display a blue iridescence. — *amaryllis* flies the whole year round, and counts in its home (f. i. at Tarapoto) among the commonest butterflies, but is especially abundant during certain periods (May and October). Specimens found in the mountain-forests are said to be larger than those from the arid plains. Several different aberrations are known, having f. i. the band of the hindwing white instead of yellow.

H. vulcanus Btlr. (76 c). The typical form above like *euryas*, but with very short white fringe of the wings. Forewing beneath with traces of a yellowish-white median line; Colombia and Panama; said to range as far as Guayana, but this must be a mistake. — In fa. *cythera* Hew. (76 d) which in Ecuador flies together with the very similar *Hel. cyrbia* (78 a), the hindwings have the distal border whitish, the forewings the red transverse band edged with yellow proximally. — *modesta* Riff. from Paramba in Ecuador stands midway between *vulcanus* and *cythera*; on the forewing the band is as narrow as in the latter, but the termen of the hindwing shows no white at all or very little. — In *concinna* Stich. the band of the forewing is half yellow, the termen distinctly spotted with white; from Balzabamba.

H. xenoclea. The forms belonging to this group have on the forewing two bands, one behind the other, a characteristic distinguishing them from most other red-banded *Heliconius*. But the similarity of their forms is partly depending on mimicry, and they have no more to do with each other than *cyrbia* and *cythera*. If, as sometimes happens, both bands flow together, they of course show only one spot, which is, however, so broad that with the exception of the apex and base the whole wing is occupied by it. We know two quite similar forms, both above black, marked on the forewing with 2 red semi-bands or spots, the upper one of which is vase-shaped, the lower one obliquely oval; both fly simultaneously at the same places in Ecuador and Peru, but differ from one another in that the ♂♂ of one have the costal area of the hindwing greyish-white, and on the under surface of the forewing the inner margin glossed as far as the median vein (scent-organ), whereas the ♂♂ of the other, otherwise quite similar form have no gloss on the under surface of the forewings, and the costal area of the hindwing is brown above. To which of these the type belongs which was named *xenoclea* by HEWITSON, was for a long time doubtful. The specimens in HEWITSON's collection are set so low, that the costal margin of the hindwings remains invisible. RIFFARTH evidently believed, — probably misled by HEWITSON's figure, — that the ♂ of HEWITSON's *xenoclea* had the costal margin of the hindwing brown, and called therefore the form with glossy white-grey anterior margin "*batesi*". Later investigations, however, seem to have proved this to be an error; for the type of *xenoclea* in HEWITSON's collection has actually a pale costal margin, for which reason the specimens with brown costal margin of the hindwing have been named *microclea* Kaye. As we do not attempt to arrange the groups from a systematic point of view, but only wish to render an easy recognition of the forms possible, we here bring both forms together, naturally as separate species. In recent years a good many aberrations were described of both forms, but partly in a manner that leaves it doubtful whether they belong to *xenoclea* or to *microclea*. — *confluens* Lathy (76 d) has the red spots broadly confluent. The water-coloured illustrations of PLOETZ's show a specimen with very broad apical spot, and specimens having the apical spot broadly, the discal spot quite narrowly bordered with red distally, but otherwise white, are named *superba* (76 b) by LATHY. — *plesseni* Riff. (= *pura* Niep.) from Ecuador has the spots altogether white, instead of red; the extracellular portion of the unshaped discal spot may be inwardly margined with brown-red (= *corona* Niep.), or the portion within the cell may be crimson (*diadema* Niep.). — *adonis* Riff. has on the forewing the spots dusted with yellow, the posterior one narrowly edged with red proximally. — In *rubicunda* Niep. they are all dusted with red. All these forms are, wherever they occur quite common. — The typical form *xenoclea* Hew. (= *batesi* Riff.) from Ecuador and Peru has both spots on the forewing bright minium-red. Of all the above named forms as well as of others we know transitions from red to almost white spots, either the outer or the inner spot being affected.

Of **H. microclea** Kaye (= *xenoclea* Riff.) we know some particularly white specimens that were named *microclea notabilis* Salv. and Godm.; both the apical and discal spots are clear white, only a very narrow streak at their inner margin remaining red.

H. nanna Stich. (76 c) bears the same relation to the common Brazilian *phyllis*, as *xenoclea* Hew. to *nanna*, *microclea* Kaye. But above it shows the characteristic difference that the discal band is not sharply cut off

at the lower median nervule as in *phyllis*, but extends somewhat beyond it. Underneath the hindwing lacks the yellowish-white apical spots, some of which are always found in *phyllis*. The figured specimens has been set especially high on purpose in order to show the silky grey-white costal area of the hindwings. Central and Southern Brazil.

beschkei. **H. beschkei** Mén. (76 c) closely resembles the preceding above, but may be at once recognized by the red line bordering the termen of the hindwings. Southern and Central Brazil, from Sa. Catharina (f. i. Blumenau) to Espiritu Santo.

atthis. **H. atthis** Dbl. and Hew. (76 e) from Ecuador mimics *Tithorea pavonii* (32 b) with which it is found in the same localities, to such a degree that only the transverse streak of the hindwing remains to point out its relationship with the hitherto mentioned species; the forewings are spotted with white.

crispus. **H. crispus** Stgr. resembles the preceding; but since it is found in the Cauca Valley of Colombia, it does not mimic the Ecuador species *Tithorea pavonii*, but the Cauca form *descandollesi* of *Tith. bomplandi*. It is larger than *atthis*, and the hindwings have besides the oblique band two rows of yellow dots. Described from Antioquia.

hecuba. **H. hecuba** Hew. (76 d) likewise mimics a *Tithorea* of the *humboldti*-group; this form has the band of the hindwing pretty regular. — In *choarina* Hew. from Ecuador, captured by HAENSCH in January at an altitude of about 4800 ft., the band is rather dull yellow, placed nearer the termen and tapering strongly towards the oval margin. — The lovely *tolima* Fassl, a wonderfully exact copy of *Tith. bomplandi* (32 b) both above and on the most complicated under surface, was discovered by FASSL on Monte Tolima in Colombia. The forewings lack the pale median band, and on the hindwing the band is rather curved and narrower at either end. — *cassandra*. **cassandra** Fldr. (76 e) differs above but slightly from *tolima* in that on the hindwing the apical and anal spots of the yellow band do not grow suddenly smaller than those in the middle.

hecalesia. **H. hecalesia** Hew. (76 e). This Columbian form which is not at all scarce in the Cauca Valley, copies a *Tithorea* with brown marked upper surface of the hindwings, flying with it in the same localities and at the same time. Thus it resembles in colouring a whole group of Danais, of which we only mention *Ceratinia peridia* (35 d) and *Callithomia tridactyla* (36 b). As it is a most exact copy of *Tithorea hecalesina* (32 c), further description is unnecessary. — In Central America its place is taken by the form **formosus** Bat. (76 f) which, particularly in Costa Rica, flies together with the similar *Tith. pinthias* (32 b). From its Columbian ally it differs in the same way as the Central-American *Tith. pinthias* from the Columbian *Tith. hecalesina*, having nearly the entire hindwing, with the exception of the black termen, brilliant red-brown. — *gynaesia*. **gynaesia** Hew. (habitat not known) has forewings like *hecalesia*, but on the hindwings the red-brown colouring is confined to a broad median band encroaching upon the end of the cell and preceded by a row of yellow submarginal spots. — These forms are less common than most other species of *Heliconius*, or are less often captured since they do not descend to the ground.

octavia. **H. octavia** Bat. resembles *gynaesia*; on the forewing the spots are united into short oblique bands; above and below the median vein brown stripes. Central America.

longarena. **H. longarena** Hew. Like the preceding, but larger, the wings more elongate, the median vein and entire hindwing crossed by very brilliant red brown bands, the yellow submarginal spots divided longitudinally by the black veins. Colombia.

godmani. **H. godmani** Stgr. from Colombia differs from *gynaesia* in having also in the cell on the forewing a yellow spot, whereas in *gynaesia* all the spots are distributed over the apical area without entering the cell.

metharme. **H. metharme** Erichs. (= *thetis* Bsd., *methame* Ky., *erato* Salv. and *Godm.*) (76 f). Above black with a bone-white semi-band across the cell and before the apex. Both above and beneath some characteristic white longitudinal dashes before the termen of the hindwing. Occurs throughout northern South America, but rather singly.

aoede. **H. aoede** Hbn. (76 f) resembles, like the members of the following group, at first sight the forms of the *aglaope* and *thelxiope*-groups, but the spots and streaks are quite different. In the *aglaope*-group which is figured on Pl. 75, c, d and e, we find on the hindwing, obliquely traversing the cell, a red band from the margin of which nail-shaped rays radiate toward the termen; here, however, the system of rays as a rule follows the veins; the cell is filled with red, the red streaks starting from its periphery. The typical *aoede* (76 f) has an aggregate of lemon-yellow, deeply frayed discal spots, the base of the forewing and the ray-like streaks

of the hindwing minium-red; from Amazonas and Guayana. — *astydamia* *Erichs.* (= *emmelina* *Oberth.*) from the same locality, is brighter red, but on the hindwings the rays are only well developed in the basal half. — *lucretius* *Weym.*, from Guayana, Venezuela and Amazonas as far as Bolivia, has on the forewing the yellow discal spots not frayed as in *aoede*, but united into a large compact spot. — In *bartletti* *Druce* (= *vedius* *bartletti* *Stgr.*) (76 f) the sulphur-yellow markings of the forewing are reduced to a short band, preceded by a small bi-or triangular cell-spot. The red rays on the hindwing very fine. Amazonas and Ecuador. — *cupidiaeus* *Stich.* from Peru has the yellow subapical band of the forewing narrower and more oblique, the upper surface more intensely red. — *faleria* *Fruhst.* from Matto Grosso resembles *bartletti*, but the stripes of the hindwings are more delicate. *aoede* and its allies are distinguished by their-violet-like odour.

H. xanthocles *Bat.* (77 b). The name-type from Guayana differs from the following *vola* (77 b) in having the base of the forewing not rufous, but brilliant vermillion-red. — *vola* *Stgr.* (77 b), likewise from Guayana, has on the forewing the base rufous, and before the apex a short sulphur-yellow subapical band. — *paraplesius* *Bat.* resembles *vola* also in the colouring of the base of the forewing, but has the lemon-yellow transverse band broader and the adjacent spots smaller; on the hindwing the cell is filled with flame-red and the red rays are very broad. — *melete* *Fldr.* (77 b) from Colombia, Bolivia and Peru has the lemon-yellow spots on the forewing united into a large discal spot which is only interrupted by the black veins and the crescent-shaped discocellular; on the forewing the red rays are well developed, but suffused with brownish. — In *melittus* *Stgr.* which stands midway between *melete* and *melior*, the yellow spot forming the end of the cell is very much reduced, in consequence of which the discal patch appears smaller; the red colouring is lighter than in *melete*. From Peru. — *cethosia* *form. nov.* (77 a) is the name given to a new form from Colombia sent to me by H. FASSE; the yellow is confined to a small band behind the cell, which is entirely black; the basal red greatly reduced, although very brilliant; underneath the red rays have completely disappeared, the colouring being uniformly black-brown, with a narrow whitish discal fascia. — *melior* (77 a) *Stgr.* from Ecuador and Peru is very bright fulvous, the lemon-yellow band at the beginning broad, growing rapidly narrower; on the hindwing a red band before the broader ends of the rays gives it some resemblance to the forms of the *penelope*-group.

H. burneyi deviates in its appearance not inconsiderably from the other *Heliconius*, being closely allied to the following *egeria*-group. Its size is much larger than that of the average *Heliconius*, often reaching 10 cm. in expanse. It is about the only *Heliconius* which in some localities is really scarce, so that outside of the typical *burneyi* none are regularly met with in commerce. It seems that their whole life is passed in the crowns of the trees, for only incidentally and very seldom one sees one of them descend to some more easily accessible height. — *hübneri* *Stgr.* (77 a), is distributed from Guayana throughout Amazonas to Peru and Bolivia. On the wing it resembles a large-sized *aglaope*: Both wings with red-brown basal rays, the forewings with a yellow transverse blotch composed of 3 spots, and with small subapical spots. On the hindwing the red rays end in very sharp points in the distal half, in contradistinction to *lindigii* *Fldr.* (77 a), where they do not enter the outer half, but at the most reach the height of the end of the cell; Colombia; especially near Muzo. — *catharinae* *Stgr.* has on the hindwing the red-brown colouring even farther reduced; the 3 spots making up the discal patch are widely separated by heavy black bars of the ground-colour. From Guayana and the Amazon. — The name-type *burneyi* *Hbn.* found southward as far as Peru, closely resembles *hübneri*, but has on the forewing the 3 lemon-yellow spots farther apart; the subapical spots, which in *hübneri* are very small or entirely obsolete, are larger, frequently united, and the comma-shaped terminal striae on the under surface of the hindwings, which in *hübneri* are always distinct, are much fainter. In the North *burneyi* and *hübneri* are always found together in the same localities; and since there occur all kinds of intermediate forms, *hübneri* might be taken for an aberration of *burneyi*, if it should be found to occur also outside of Peru.

H. egeria *Cr.* (= *isaea* *Hbn.*, *ergatis* *Godt.*) bears the same relation to the forms of *burneyi* with which it might well be united into a special group, as *thelxiope* (75 d) to *aglaope* (75 d): The lemon-yellow discal spot of the forewings breaks up into numerous isolated smaller spots. In typical specimens these are very small, and the entire inner half of both wings is suffused with purplish-red. From Guayana and Amazonas. — *egerides* *Stgr.*, likewise from Surinam and Amazonas (Manaos), has on the forewing only a purplish-brown subcostal band. — In *hyas* *Weym.* from Amazonas the basal area of the hindwings is rather yellow than brown-red, emitting thin, far spreading rays almost to the termen; *astraea* *Stgr.* has the yellow spots of the forewing again united, as in *burneyi*, thus recalling *aglaope*; but the forewings are more pointed and lack the subapical spots.

H. doris is one of the most variable species of the genus, which for a *Heliconius* is saying a great deal. Above all it is remarkable on account of the hindwings varying from red to blue or green and, as if the aberrative combinations thereby possible did not suffice, all the forms may be more or less, or even

totally obscured. Neglecting these latter melanisms, the forewing nearly always shows a tapering, discal band of bone-colour, and a smaller subapical streak composed of dull yellowish-white dashes. The oldest described form is *doris* L. (= *quirina* Cr., *erato* Salv. and Godm.) (77 b). The discal band of the forewing ends clean at the lower median nervule. In the hindwing the cell is filled with blue, sending out very short blue rays which hardly reach the middle of the wing; before the termen a more or less extended row of white dots.

— In ab. *metharmina* Stgr. (= *doris nigra* Stgr.) (77 c) the basal blue of the hindwing has disappeared, giving it a likeness to *metharme* (76 f) and, less superficially, also to the forms of the *rhea*- and *sara*-groups. Also the forewings may be obscured with black, both in the red and the blue forms. If quite black, or at the most only adorned by a few subapical dots, we have ab. *obscura* Weym. (77 c); if the discal spot is still distinct, being only dusted over with black, we have *tecta* Riff. (77 c). *doris* is, together with its subforms, distributed over the entire northern part South of America, but does not go farther south than North-Brazil and in the West to Peru and Bolivia. In Colombia and Ecuador it is replaced by various local forms, but it must be said that the mentioned aberrations are not confined to the main form, but may occur also in all the subforms. Thus the figured ab. *obscura* is a melanism of the Colombian *eratonius*; *tecta* (77 c) a dark form of *aristomache*. — Regarding first the green forms, we have one, with yellow-green rays on the hindwing, known for a long time as *doris viridis* Stgr. (77 c); from this RIFFARTH has separated the form *luminosus*, distinguished by the rays having the points "whitish". Equally unnecessary was the separation by STICHEL of "*viridana*", with deep green instead of yellow-or blue-green base of the hindwings. If we would consider all such, often purely individual deviations, we could have at least 50 names for the forms of *doris* alone; one would have to separate above all the "blue-green forms" from the "yellow-green", of which STAUDINGER gave us a figure. There are specimens of *viridis* which have the tips of the green rays very feebly yellow, and others having the entire inner half of the cell sealed with yellow. On the forewing the yellow median streak may be entirely or almost absent, the terminal dots of the hindwing may vary in number and intensity, and all this may be the case in the green as well as the blue and red forms. — Therefore we mention only the named forms with short characteristic notes: Besides the green forms there are also red ones: *delila* Hbn. (= *erato* Cl. nec L., *doris Blanch.*, *mars* Stgr.) (77 c), from Guayana throughout northern Brazil as far as Ecuador, Peru and Bolivia; forewings with a short blunt semi-band and, like the hindwing, with heavy red basal rays. — *eratonius* Stgr. (= *erato* Btlr.) (77 d). Ranges from Central America to Venezuela and Colombia. On the hindwings the red basal rays reach within 4—5 mm. to the termen; — *transiens* Stgr. (77 d) very closely resembles *eratonius*, but the rays are shorter, separated by black, not reddish veins as in the preceding. This is the most northerly form, ranging from Colombia to Mexico, and altogether one of the most northerly *Heliconius*. — *amathusia* Cr. (= *crenis* Hbn.), a most striking form, having on the hindwing the red rays partly suffused and edged with blue; also their terminal continuation is blue. Ecuador; taken by HAENSCH at an elevation of about 2000 ft.; mentioned also from elsewhere, but apparently nowhere common. — *aristomache* Riff. (= *doris* Weym.) (77 d), ranging from southern Central America southward to Ecuador, is much more blue than typical *doris*. Like the colour of the hindwing, thus also the bone-yellow discal band of the forewing may vary, from being very broad, to being obscured to such an extent that it disappears almost completely. The material before me shows such a degree of variation in this that among over 40 specimens I can hardly find two that are alike. For that reason it is a mistake to separate the narrow-banded blue specimens passing in commerce as *doris*, under the name of "*caeruleata*" Stich., simply because the width of the band does not coincide with that of LINNÉ's type. To base new forms on the difference in the width or shape of the bone-yellow discal band would, if applied to the forms already established, add at least 100 further names. — Nearly all the forms of *doris* are, wherever they occur, exceedingly common; flying throughout the year, they are in the dry period when but few Lepidoptera are seen, beside the *Catopsilia* frequently the only striking butterflies enlivening Nature by their numerous appearance.

hierax. H. *hierax* Hew. (77 d) from Ecuador resembles *transiens*, one of the red *doris*-forms, but has the yellow discal band steeper and, like the apical spots, differently arranged than in *doris*; the basal half of the hindwings is also purplish-brown, but of a clearer tone, and irregularly bounded by the darker outer half, but not drawn out into ray-like streaks.

clytia. H. *clytia* Cr. (= *antiocha* Hbst.). Upper surface deep black, largely suffused with an intense blue iridescence. Hindwings without any markings, forewings with two bands, one oblique through the middle, the other narrow, often partially obsolescent, before the apex. Typical specimens have these bands white. From Guayana through Amazonas to Peru. — *flavescens* Weym. (= *clytia* Stgr., *sara* Godt.) (77 d) has the bands brilliant pale yellow; likewise from Guayana, North-Brazil and Peru. — In *wallacei* Reak. (77 e) the oblique discal spot is contracted into a band, the subapical fascia relatively broad; from the very similar *sprucei* etc. it may be distinguished by having on the under surface of the hindwings a red costal stripe and pale radiating subter-

minal striae. The width of the yellow discal band is rather variable, all transitions occurring connecting it with *flavescens*. Guayana, Amazonas and Colombia. — **mimulinus** Btlr. from Colombia refers to specimens which above resemble *wallacei*, but show less intense blue iridescence and have the yellow cell-spot within the band nearly square. — **elsa** Riff. resembles *wallacei*, but has the bands white instead of yellow. Surinam. — ab. **parvimaculata** Riff. refers to specimens of *flavescens* having the discal band divided into spots by the black veins. — In **colon** Weym. the discal band is only indicated by two small white spots. — All the forms of *elytia* belong, wherever they occur at all, to the commonest butterflies; they are met with on broad forest-roads, nearly always in company with similarly coloured forms of other groups, as *Heliconius antiochus*, *sara* or *leucadia*, from which they cannot be distinguished on the wing; but besides the genus *Heliconius* no other mimics or their models are found.

H. sappho has, like the preceding, the upper surface suffused with a deep blue lustre; forewings with one broad, or two narrower, white, somewhat translucent, transverse bands. **leuce** Dbl. (= *sappho* Hbn.) (77 e). On the forewing the band broadly white, interrupted on the discocellular vein by a black tooth-like bar and by a similar projection from the termen between the median nervules. The hindwings have only the apex and fringe faintly white. Central America, especially Honduras; generally found together with *H. galanthus* (74 d) which it greatly resembles above. On the wing the species cannot be told from one another; but *galanthus* has on the under surface of the hindwings a number of discal arches, *leuce* some large red basal spots only separated by the veins. The nearest allied form **eleusinus** Stgr. (77 e) from West-Colombia is above black, not steel-blue; the black spot at the end of the cell is nearly met by a black tooth from the termen at the middle, almost dividing the white patch into two. — In **primularis** Btlr. (77 e) from Ecuador this division is complete, the two component spots being widely separated; hindwing with broadly white-yellow terminal border almost reaching the middle of the wing. — In **eleuchia** Hew. (77 e) from Colombia the terminal border of the hindwing is clear white; on the forewing the discal portion of the transverse spot, which is likewise cut into two, is narrower. Ecuador, common in the plains, taken by HAENSCH as high up as 2500 ft. — **sappho** Drury, the name-type, has on the forewing only one band, which is broadly white, at the costa divided by the black discocellular spot, slightly curved inwards toward the anal angle, leaving the termen black. From Colombia and Ecuador; not scarce.

H. hewitsoni Stgr. from Chiriqui (Costa Rica) is a copy of *H. pachinus* (74 f) which flies in the same locality. Forewing with 2 oblique yellow bands, hindwing with only one curved band placed at about 5 mm. from the termen. Differs from *pachinus* in that the discal band crosses the cell at the end, whereas in *pachinus* it passes beyond it.

H. congener Weym. (= *paranapuræ* Stgr.) exactly copies *wallacei*, *sara*, *apseudes* etc.; like these, the upper surface is black, the inner half of both wings suffused with a bright lustre of steel-blue. May be distinguished from all these by the sulphur-yellow discal band, which on either side is quite irregularly bounded by fine teeth and lunules of the black ground-colour. Ecuador and Peru, ascending to above 3000 ft.

H. antiochus L. (= *araneides* Stgr.) (77 f) ranges nearly over the entire North of the South-American continent; the type is found in Guayana and Amazonas as far as Peru. Above black with blue iridescence, with two white transverse bands and a yellow streak on the median vein. Hindwings with a red wedge-shaped subcostal streak underneath. — ab. **alba** Riff. (77 f) very closely resembles the name-type, but on the forewing the bands are less pointed at the ends, and the yellow median streak is absent. — **aranea** F. has on the forewing the bands paler yellow; — **zobeida** Btlr. (= *divisus* Stgr.) has the white discal band interrupted on the median vein. — **ocannensis** Stich. (= *ocannus* Stich.). Like *zobeida*, but the bands yellow instead of white; North Colombia. — A rather different appearance has **salvinii** Dew. from the Orinoco. Forewing as in *antiochus*, but the hindwing with a yellow band similar to that of *phyllis*, *chestertoni* and many other Heliconids.

H. leucadia resembles the preceding, but with very brilliant lustre of blue above; the subapical band much shorter, the oblique discal spot not extending beyond the lower median nervule, frequently composed of only two spots, one large, placed above the median, the other below it in cell 2. — **pseudorhea** Stgr. (77 f), from Amazonas, Ecuador and Bolivia, has the hindwings quite dark. — **leucadia** Bat. comes from Ecuador and the Upper Amazon. Hindwing with rather large white terminal spots.

H. sara F. (= *magdalena* Bat., *rhea* Btlr. and *Druce*) (77 f). Very much like the preceding species, but the discal band of the forewings narrower, more pointed at either end. Hindwings with numerous red basal dots underneath. From Panama, Colombia and Venezuela. — ab. **albimaculata** Stgr. from Colombia has on the forewing the bands white, not pale yellow as in typical *sara*. — **apseudes** Hbn. (= *sara* Luc.) (77 f), which is the commonest species coming to Europe from Southern Brazil, where it may be seen even in the gardens of Rio de Janeiro, has the discal band sulphur-yellow, and nearly twice as wide as in *sara*. — In **albula** Riff. from La Guayra this band is of the same width as in *apseudes*, but white. — **brevimaculata** Stgr. has the subapical and shorter and the discal band divided into two. From the Rio Dagua (Colombia). — **sprucei** Bat. (78 a)

from Ecuador is above like *sara*, but with unusually brilliant blue lustre and uncommonly long white fringe of *rhea*. the hindwings. — In *rhea* Cr. (= *thamar* Hbn.) (78 a) the discal band is an almost regular oval, the sub-*albinea*. apical band shorter; both bands yellow. From Guayana throughout Amazonas to Peru and Ecuador. — *albinea veraepacis*. Riff. from Surinam has the bands as in *rhea*, but clear white. — *veraepacis* Bat., an alpine form of Guatemala, unknown to me, has the subapical bands whitish, slightly curved, and interrupted; the discal band yellow in *theudela*. the middle, angular, enclosing a yellow, nearly square cell-spot. — *theudela* Hew. from Panama, Colombia and Venezuela resembles *sara*, but the transverse band almost reaches the anal angle, the hindwings with yellow *fulgidus*. low terminal dots. — *fulgidus* Stich. (78 a) from Costa Rica has the same intensely blue lustre as *sprucei*; the fringe shorter, but more brilliantly white, the discal spot as broad as in *apseudes*.

himera. **H. himera** Hew. (78 a) does not fit in with any of the larger groups. It is a rare species of Ecuador, copying in its outward appearance *H. clysonimus* (79 b) with which it associates in the same localities. Its scheme of colouring is the reverse of *colombina* (78 b), being red where that is lemon-yellow, and vice versa.

cyrbia. **H. cyrbia** Godt. (78 a) is one of the plainest and at the same time most elegant forms of this magnificent genus. The wings are black with steel-blue lustre and white fringe. Forewings with a semiband of purplish pink, hindwing with bluish-white terminal spots, growing shorter towards the apex. Ecuador; some specimens, *difformata*. including the original of our figure, were taken by HAENSCH even at altitudes of 2500 ft. — *difformata* Riff. has on the forewing the red band much broader, on the hindwing the terminal spots frequently dusted over with darker, the light median band of the under surface nearly twice as wide as in *cyrbia*. From Paramba (Ecuador). *venus*. — *venus* Stgr. from Colombia has the red band even broader, twice as broad as in *cyrbia*; but it lacks the white *juno*. terminal spots of the hindwings. — *juno* Riff. which above resembles *venus*, is said to be without the blue lustre of the upper surface; the hindwings with the median band obsolete underneath, but with red costal streak. Described from a specimen in RIFFARTH's collection, locality unknown.

favorinus. **H. favorinus** Hpffr. (= *pseudamaryllis* Stgr.). Forewing with blood-red, almost round spot, which is, however, cut off almost straight on the lower median nervule. Hindwing with yellow discal band, tapering at both ends, in the middle broader, underneath rather longer, ending in a point about 3 mm. before the termen. Peru.

petiverana. **H. petiverana** Dbl. and Hew. (= *demophoon* Bat.) (78 b) closely approaches *phyllis*, but lacks on the forewing the yellow median streak, like *rosina* (76 b); differs from all other similar forms in having the yellow costal streak of the hindwing very narrow. Ranges from Mexico throughout Central America as far as Colombia and Venezuela. — *demophoon* Mén. has the yellow band of the hindwing broader; thus it approaches *rosina* as well as *columbina*, but differs in the characteristic shape of the red spots of the forewings as well as of the yellow band of the hindwing, which is nearly straight, whereas in *colombina* its outer edge is distinctly curved *tristis*. upwards behind the cell. From Central America and Colombia. — ab. *tristis* Riff. from Panama and Costa Rica lacks above the yellow band of the hindwings, which is underneath faintly indicated by an obsolete shade.

colombina. **H. hydara** is connected with the preceding group by the form *colombina* Stgr. (78 b), but easily distinguished from it by the characteristics mentioned under *demophoon*. The curving up on the hindwing of the outer *antigona*. margin of the yellow band is largely due to the band swelling in the middle. — ab. *antigona* Riff., likewise from Colombia, is distinguished from the preceding by the blue iridescence of the upper surface. — In the *hydara*. name-type *hydara* Hew., likewise occurring from Costa-Rica to Venezuela, the hindwing lacks the yellow band; it resembles *melpomene*, but the red spot on the forewing is much broader, almost as in *euryas* or in *vicina* *guarica*. (75 e). — ab. *guarica* Reak. from the same locality is an aberration with steel-blue lustre, every grade of intensity being known. — HEWITSON lays stress upon the fact that typical *hydara* have also on the hindwing in the middle a small spot of scarlet, which appears so distinct in his figure that there can be no doubt about the character of his *hydara*; for this reason I have named all specimens in which this spot is not present, although *adana*. they are the more common, ab. *adana* nom. nov. This form closely resembles *melpomene typica* in all but the much *molina*. broader and more brilliant red band of the forewing. — ab. *molina* Sm. looks like *guarica*, but has the red band on the forewing interrupted by black. — In the same way as in this the hindwings may lack the yellow band, whereas the red band on the forewing is strongly developed, it may vice-versa happen that the latter *chestertonii*. disappears and the former is retained. This is *chestertonii* Hew. (= *damysus* Hpffr.) (78 b), which somewhat resembles *cydno fa. gustavi* (74 f), with the same blue iridescence, but lacking the rows of white submarginal dots, *nocturna*. and on the hindwing the yellow band reaching underneath almost the apex. — *nocturna* Riff. from Venezuela looks like *chestertonii*, but the yellow band of the hindwings is obsolescent, and there is a white spot above *magnifica*. the end of the cell in the forewing. — *magnifica* Riff. resembles *guarica*, but is larger; the blue lustre is not confined to the black-brown ground-colour, but also suffuses the red spot of the forewing. Guayana, Ecuador, *viculata*. Peru. — In *viculata* Riff. (78 b) the spot of the forewing is large and broad, traversing almost the entire width of the wing; but it is pale red, of a shade only seen in *hydara* and *melpomene* specimen-

when exposed to sunlight for any length of time. — **amphitrite** *Riff.*, from Peru, has on the forewings the spot *amphitrite*, even larger and paler, orange-red.

The last-named forms represent a transition to the group of **H. phyllis** in which we again trace *phyllis*. quite a number of the most various Heliconid patterns, as f. i. of *rosina*, *besckei*, *lindigii*, *thelxiope*, *aglaope* etc. — In **callycopis** *Cr.* (= *callicopis auct.*) (78 c) from Guayana and Para the red spot in the forewings, which in *callycopis*. *hydara* is compact, appears frayed out and broken up into a larger, upper curved spot and two smaller ones below it. — In **callista** *Riff.* (78 c) from Guayana these spots are united into a sort of ring, the upper of the *callista*. two posterior spots being uncommonly large. — **dryope** *Riff.* (78 b) from Surinam and the Amazon River, *dryope*. has the red spot broad and long, as in *viculata*, and in addition, the entire basal area of the forewings brilliant red. — **coralii** *Btlr.* (= *palantia Möschl.*) from Guayana and the Lower Amazon has on the forewing the dis- *coralii*. cal spot broken as in *callista*, but the basal area red as *dryope*. — In **elimaea** *Erichs.*, likewise from Guayana *elimaea*. and the Amazon, the discal blotch of the forewing is broken up into a number of small red spots, and the basal area is red. — **cybelina** *Stgr.* (78 c) from Manaos, one of the loveliest *Heliconius*, has the entire inner half of the *cybelina*. forewing, as well as the basal portion of the costa beneath, beautifully red; the discal spot replaced by a lemon-yellow, slightly curved, oblique band. — **amalfreda** *Riff.*, from Guayana and Amazonas, resembles *cybelina*, *amalfreda*. but has a lemon-yellow spot at the end of the cell. — **erythrea** *Cr.* (78 c), from Guayana and the Amazon *erythrea*. River, resembles on the forewing *dryope*, only the discal spot is somewhat smaller; but the hindwings with red rays in the anal half. — **tellus** *Riff.* from Cayenne looks like *erythrea*, but has the discal band yellow instead *tellus*. of red. — **udalrica** *Cr.* (= *ubrica Hbn.*) (78 c), one of the commonest forms, has on the forewing in the place *udalrica*. of the minium-red discal spot a much cut-up, somewhat paler red blotch; basal area of the forewings and some rays on the hindwing likewise red. From Guayana. — **andremona** *Cr.* (78 d), from Guayana and Amazo- *andremona*. nas resembles *callycopis* (78 c) in that the discal blotch is composed of a larger, horseshoe-shaped upper spot with 1—2 smaller ones below it; but all these are largely laved with yellow or may even assume a yellowish flesh-colour; base of forewings and rays on the hindwings light red with slightly brown-yellowish tone. — It is the extreme of this form from the mouth of the Amazon River, reproduced, as many of our figures of *Heliconius*, from the beautiful illustrations of OBERTHÜR's, to which we give the Amazon name ab. **androdaixa** *nom. nov.* (78 d). All the red markings are heavier, the rays on the hindwings twice as broad; all the spots and stripes brilliant light red, only the spot at the end of the cell more dull. — **leda** *Stgr.* (78 d) from Guayana *leda*. closely approaches the preceding, but the lovely light red discal spots are replaced by 3—4 rather small, lemon-yellow spots, preceded by another curved spot at the end of the cell; occasionally even these may be reduced to mere traces, leaving the entire outer half of the forewing black: = ab. **oberthüri** *Riff.* — In **vesta** *Cr.* (= *cynisca Godt.*) these yellow spots are greatly increased; the hindwing with red rays, but the forewings *vesta*. without any red at the base. Guayana. — **amazona** *Stgr.* (= *vesta Hbn.*, *philadelphus Ky.* [in "HÜBNER"]) *amazona*. (78 d) from Pará exactly resembles *androdaixa* (78 d) in colouring and markings, but has the discal spots not red, but lemon-yellow, otherwise unaltered in shape and size. — In **etylus** *Salv.* (78 d) from Ecuador the group of discal spots *etylus*. is reduced to a lemon-yellow, obliquely oval subapical spot, — in **estrella** *Bat.* (= *vestalis Stgr.*), from Ama- *estrella*. zonas and Ecuador, to a lemon-yellow semifascia, which in ab. **emma** *Riff.*, from Ecuador and Peru, is uncom- *emma*. monly narrow. — If on the other hand, this sulphur-yellow discal band projects outwardly, with its lower portion cut off as a separate spot, we have **palmata** *Stich.* Peru. — **aquata** *Stich.*, like the preceding from the *palmata*. Ucayali, resembles *estrella*, but has the subapical band lemon-yellow instead of red, and placed nearer the apex. *aquata*.

— **simplex** *Riff.* differs but very little from *aquata*; unknown to me in natura, as is also **ilia** *Niep.*, which is said *simplex*. to resemble *estrella* in its ochreous markings, but with the discal spot of *notabilis*; the apical band "reduced to one half of its length distally, somewhat concavely excised towards the apex". Described from a ♂ taken at Canelos (Ecuador). — **feyeri** *Niep.*, likewise from Canelos and described from a ♂, is intermediate between *feyeri*. *estrella* and *rosacea*; the *estrella*-pattern brilliant brick-red; the large semicircular apical band as in *rosacea*. *Riff.*, but clear white, feebly margined with red proximally. — **ochracea** *Riff.* has the spots uniformly ochreous; *ochracea*.

— **rothschildi** *Niep.* Like the preceding, but with the apical band white. — **diva** *Stich.* has the red markings *rothschildi*. gorgeously scarlet, but reduced, and widely separated by black, the oblique discal band yellow, dusted with blackish *diva*. distally. — This dark shading is even more intense in **demeter** *Stgr.* (78 e) from Peru; but all the markings *demeter*. are here pale red, not scarlet; on the hindwing the rays coalesce at the base and unite with the red cell.

bouqueti *Nöld.* (= *buqueti Riff.*). Like *demeter*, but with the lemon-yellow discal band reduced to a number *bouqueti*. of small yellow spots surrounding the black discocellular spot. Mentioned from "Cayana" (?). — **lativitta** *Btlr.* (78 e), from the Amazon, Bolivia and Peru, has the red markings reduced, the lemon-yellow discal blotch *lativitta*. large, almost enclosing the black discocellular spot; on the hindwing the rays well separated. — **venusta** *Salv.* (78 e). Forewing red from the base to the yellow discal band, which latter, being encroached upon by the *venusta*. black apical area, appears behind the end of the cell contracted, whereas in *lativitta* that portion is broader.

donatia. Bolivia. — **donatia** *Fruhst.* from Matto-Grosso looks like *venusta*, but has the yellow discal spots behind the cell longer, the red basal stripes on the forewings shorter, those of the hindwing more brilliant red, widening towards the anal angle. — **anactorie** *Dbl.* has the yellow discal spot dusted with red distally. Bolivia. — In **sanguinea** *Stgr.*, likewise from Bolivia, this discal spot is entirely brick-red or vermillion. — RIFFARTH mentions a specimen from Rio Juntas (Bolivia) in which the discal spot confluesces with the red base to form a single large blotch of red: = ab. **confluens** *nom. nov.* — Some forms have on the hindwing the red rays intersected by the yellow band characteristic of *phyllis*: = **anacreon** *Sm.* and *Ky.* (78 e), with red, — **ottonis** *Riff.* (78 e) with yellow discal band of the forewing; both from Bolivia and Peru. — The name-type **phyllis** *F.* (= *roxane* *Cr.*, *phyllus* *Prittw.*) (78 f) ranges from Argentina and Paraguay throughout Southern Brazil to Peru, northward to far beyond Rio de Janeiro; it is, next to *narcaeus*, the form most frequently seen in Europe. Extremely common, especially on the coast, in Rio, Santos etc., it lends a wonderful charm to the landscape. Everywhere, on roads, in openings in the forest, near wood-fellers' camps, even in the yards and gardens, they may be seen flying, or resting on some flower, and often shrubs with quite insignificant blossoms are covered with the gaudily-coloured *phyllis*, — frequently accompanied by the much more wary *Colaenis julia* and *Dione vanillae* —, to such a degree that they appear to be in full bloom. The odour of *phyllis* is probably the most penetrating and disagreeable which I have noticed in any Heliconius. The thorax being crushed this odour may be perceived in the open air even at a distance of 10 yards; it reminds one of the smell emitted by many of our European Pompilids and Ichneumonids, perceived f. i. when one crushes or rubs the thorax of the road-wasp (*Psammophila*) or of a large *Trogus lutorius*; at least it struck me that way at the time when I examined in Brazil the Heliconids as to their odour. *phyllis* flies in Rio and Santos the year round, appearing particularly fresh after heavy rains, but becoming comparatively scarce in January and February, at which time one meets at Santos only worn specimens. At that time the Nymphalid *Eresia lansdorfi* (91 a) is pretty common, a species which, — curiously enough —, does not copy a fresh, but a worn and faded *phyllis*.

artifex. — Of other forms belonging to the *phyllis* group we mention: ab. **artifex** *Stich.*, from Southern Brazil and Paraguay, distinguished by some red dots below the yellow band on the hindwing. — ab. **phyllidis** *Sm.* (78 f) has on the hindwing the yellow band shortened, especially near the inner margin, and dissected by the black vein.

amata. — In **amata** *Stgr.* this band is even more heavily obscured, and at the same time the yellow median streak of the forewing is obsolete. Bolivia. — The larva of the typical *phyllis* from Southern Brazil exactly resembles the figure of *melpomene* given us by SEPP (Pl. 4). Head with 2 longer horns; the first segment with 2, the second with 4, the following with 6 spines each. Pupa brown, with very fine, long dorsal spines and 3 silvery spots on either side of the thorax. Head with 2 short ear-shaped horns which are covered with spines.

hermathena. **H. hermathena** *Hew.* (78 f) appears to combine the markings of *phyllis* and *charithonia*, resembling the latter in the hindwing and in the basal half of the forewing; forewing with a red oblique band in the outer half, differing somewhat from that of *phyllis* in shape as in colouring, being minium-red, not blood-red as in *phyllis*. From the Amazon. Good specimens are rather rare in European collections.

charithonia. **H. charithonia** *L.* (79 a). This species, known in North America as the "Zebra butterfly", is the only *Heliconius* found in the United States and the Antilles. A median band, angled upwards, a subapical and apical oblique band, on the hindwings the characteristic *phyllis*-band and a partially double row of dots are pale yellow. Very common throughout the Gulf-States, Antilles, and from Mexico to Colombia and Venezuela, but at the most northerly limits of its range, as in Texas, Georgia and Florida, only locally abundant. — In Peru we find a dwarfed form having the bands of the forewing reduced: **peruviana** *Fldr.* (79 a); occurs at Lima and at the landing-places in Callao; in Ecuador HAENSCH took it at an elevation of 2500 ft. above the sea.

nattereri. **H. nattereri** *Fldr.* (78 f). This species I have never seen alive, and if the habitat "Bahia" refers to our Bahia of to-day, the full name of which is San Salvador de Bahia de todos os Santos, it must be very scarce indeed; for I have never taken a single specimen, although I collected near there in January, February, April, July, August, October and November. Also in collections one sees it but rarely, and all the known specimens are ♂♂; they differ from *charithonia* in having on the hindwing the yellow band broader and the terminal dots suppressed; on the forewing both oblique bands are replaced by a broad irregular discal spot. — A number of ♀♀ distinguished from *nattereri* by having the median bands dusted with brown, were described as **fruhstorferi** *Riff.* Possibly they represent a variety or even the normal ♀♀ of *nattereri*. If the locality is correct, the species seems to range in Eastern Brazil from Bahia south to Rio grande do Sul.

telesiphe. **H. telesiphe** *Dbl.* (79 c, d), from Peru and Bolivia, has on the forewing a pinkish-purple subapical and transverse band, on the hindwing a white median band which in fresh specimens has a bluish shade. The

figure given in STAUDINGER's "Exot. Tagfalter", showing the bands of the forewing brown and that of the hindwing sky-blue, is hardly recognizable. It flies together with *Colaenis telesiphe* (84 d) from which it cannot be distinguished at all in the air; only the bluntly projecting forewing, the dentate outer margin of the hindwing and the totally different under surface betray *Colaenis*. But above they agree so exactly in colouring that one cannot doubt the mimetic connection between the two. A further proof of this seems to be the fact that in Ecuador we find a form of *Colaenis* having the band on the hindwing yellow instead of white, viz. *Col. tithraustes* (84 d); now we meet in the same localities also a *Heliconius telesiphe* which is yellow-banded, and indeed this band is exactly 1—2 mm wider than in typical *Hel. telesiphe*, even as in *Col. tithraustes* it is somewhat broader than in *Col. telesiphe*. To try to explain such astonishing coincidences by "chance" or by "physical laws", seems indeed too much to ask of the reader. — The name of the yellow-banded Ecuador form of *Hel. telesiphe* is *sotericus* Salv. (79c); it is found in Peru wherever *Col. tithraustes* flies. HAENSCH captured it in October near Sa. Inez in Ecuador at an altitude of 3800 ft., STÜBEL in January at Riobamba and Huamboya. *sotericus*.

H. hortense Guér. (= *hortensia* Dbl.) (79c). On the forewing the band irregular, pale yellow, on the hindwing curved, broadly ochreous-brown. Under surface most peculiar, with a faintly violet-pinkish median band, the veins and intranervial rays very dark. From Honduras to Colombia and Ecuador. Associates with a number of species partly belonging to *Heliconius*, partly to *Eueides*, but all with similar upper surface, such as *Hel. clysonimus*, *Eu. ricini* etc. *hortense*.

H. clysonimus Latr. (79b) resembles above in colouring *hortense*, with which it associates; but all the bands are narrower, those of the hindwing more brilliantly red. From Venezuela to Ecuador, where HAENSCH found it as high up as 3800 ft. above the sea. — A dwarf form, hardly half as large as the Colombian *clysonimus*, is ab. *micra* form. nov. (79a, b); on the forewing the oblique band approaches nearer to the termen, on the hindwing dull cinnamon-brown. From the Llanos of Venezuela. — An intermediate form from the mountains of Costa Rica and Panama is *montana* Salv. which has on the hindwing the brown band considerably broader than the black terminal area. — *hygiana* Hew. (79a) from Ecuador has on the forewing before the apex a second small yellow spot, and the median vein dusted with yellow. *clysonimus*, *micra*, *montana*, *hygiana*.

2. Genus: **Eueides** Hbn.

Closely allied to *Heliconius*, but at once distinguished by the shorter and more distinctly clubbed antennae. The majority of species do not reach the average size of the *Heliconius*. Head relatively broader; palpi larger and more porrect; abdomen of ♀ stouter, but not so long as in many *Heliconius*, never projecting far beyond the anal angle, frequently not even reaching it. In their whole appearance they rather approach the *Argynninae*, especially *Eresia* or *Melitaea*, than *Heliconius*; for which reason FELDER separated them from the latter altogether, uniting them with the *Nymphalidae*.

About 60 forms are known which have an even more limited range than those of *Heliconius*. In the North they do not pass beyond the Neotropic limits, in the South only to Southern Brazil and Paraguay. Wherever they occur, they are very common; their flight is elegant, swimming, but not rapid; they have a very tough life, and love to visit flowers. Flying throughout the entire year they seem but little influenced by the seasons. Their greatest enemies are the spiders, in the webs of which large numbers of *Eueides* daily lose their lives. In Bahia I often found in the webs of large spiders dozens of them dead which had been either too weak or too awkward to liberate themselves.

In the woods they are but rarely met with, never in the dense forest; they prefer the open country, sun-lit openings, hilly slopes, the borders of broad roads and flower-covered meadows, where they associate not only with their own kind, but with a host of butterflies belonging to quite different families or genera, all coloured and marked alike. No other larger genus of *Lepidoptera*, not even the *Heliconius*, mimic other models to such a degree as the *Eueides*, and their models are found among the Pierids, Danaids, Acraeids, Nymphalids, Erycinids, Castniids, Pericopids etc. Indeed one may say that no *Eueides*, without any exception, has a character of its own, but that for every *Eueides* we find in one or the other genus at least one, often even a whole series of analogous forms. Thus one may separate the *Eueides* into those that copy the *Heliconius* of the groups of *narcaea*, of *melpomene*, of *thelxiope*, of *clysonimus*, those that mimic the Danaid genus *Lycorea*, or the genus *Actinote*, or *Colaenis julia*, and finally those which in the ♂ copy one species, in the ♀ another.

The eggs resemble in shape a wine-bottle; they are deposited singly or in clumps on the underside of the leaves of *Passiflora*, which form the food of the larva. One species (*Eu. cleobaea*) is said to live in the larval

stage on Asclepiadeae; this, however, must be an error due to mistaking it for *Lycorea cleobaea* (31 b), a Danaid closely resembling *Eueides* in colouring, but in no manner related to it.

The caterpillars of *Eueides* resemble those of many of our *Argynnis*; when young they are ringed, later on quite black, the spines moderately long, those behind the head slightly curved and diverging. The pupa has a peculiarly dried-up and shriveled appearance, with more or less long spines and knobs at the back, resembling the asci of fungi one frequently sees in South America on dead caterpillars and chrysalids, which probably are to lead the enemies of the pupa to believe it to be unpalatable. The pupal stage lasts about 14 days; after emerging, the imago remains for some time quietly in its place before flying away. Imperfectly developed specimens are but rarely met with.

ricini. **E. ricini** L. (79 d) closely resembles in colouring *Heliconius hortense* (79 c) and *clysonimus* (79 b). Forewing with a pale yellow, hindwing with an ochre-brown median band; in addition a small subapical band-like that of *H. hygiana* (79 a), but in size approaching *micra* (79 a, b). Associates with the respective forms of *clysonimus* and *hortense* in Guayana and certain parts of Amazonas, also in Venezuela; specimens from *insulana.* Trinidad have the red-brown basal area of the hindwings much narrower: = **insulana** Stich. Not scarce. Larva on *Passiflora laurifolia*.

procula. **E. procula** Dbl. (79 d). Above very much like *Helic. clysonimus*; forewing with a pale yellow, spindle-shaped band, hindwing with a band of fulvous; distinguished, aside from the antennae and the entirely different under surface, by the fulvous band extending somewhat beyond the hindwing and appearing on the forewing as a red dash at the inner margin. Flies in Venezuela and Colombia together with *Hel. clysonimus*; not scarce; associates in Colombia also with the much larger *Helic. hortense* (79 c).

E. edias is the first of a group of *Eueides* copying the forms of an entirely different family, viz. *luminosus.* *Danaids* of the *eutresis*- and *olyras*-groups. They also approach *procula*, and the form **luminosus** Stich. (79 e) of which we figure the type, has the hindwings just as in that species, but on the forewing the oblique band replaced by a number of isolated yellow spots accompanying a basal streak of fuscous. From *euryaces.* Venezuela. — In *euryaces* Hew. the ground-colour contrasts less sharply with the spots which on the fore-*vulgifformis.* wing are united to a contiguous band. Ecuador, all the way up to Quito. — On the other hand **vulgifformis** Btlr. and Druce has these spots reduced and farther separate than in *luminosus*, the basal stripe not visible. From *edias.* Panama to Guatemala. — The name-type **edias** Hew. (= *kuenowii* Dew.) (79 d, e) occurs in Colombia. On the forewing all the spots, particularly in the ♂, are much larger and semi-translucent, giving it, together with the much larger size, a great similarity to *Olyras theon* (31 d) and *Eutresis theope* (31 e), also to certain species of *Dircenna* as well as the Nymphalid *Eresia prisca* (91 e) and other forms of western South America.

E. lampeto copies the *aristiona*-group of the genus *Heliconius*, as well as its numerous followers. — *carbo.* **carbo** Stich. from Ecuador has the hindwings nearly completely black, likewise the apex and 2 large, broad basal streaks on the forewing. It is found together with *Hel. bicoloratus* (73 c) and *lenaeus* (73 e), the Nym-*fuliginosus.* phalid *Eresia murena* (91 e), *Ceratinia semifulva* (34 d) and *Hyposcada fallax* (38 c). — ab. **fuliginosus** Stich., likewise from Ecuador and Peru, has the apex less black, leaving the discocellular spot as well as another *amoena.* spot in the middle of the termen standing quite alone on the yellow-brown ground. — ab. **amoena** Stich. (79 f), intermediate between the former two, is more black than *fuliginosus*, but less so than *carbo*. Found *acacates.* together with the others. — **acacates** Hew. has the terminal spot covered over by the much broader apical blotch, but the discocellular spot still isolated; hindwing brown, banded with black. Found in Peru, together *lampeto.* with the very similar *Mechanitis deceptus* and *huallaga* (34 a). — **lampeto** Bates, the first described form, from the Upper Amazon River. Forewing brighter fulvous, apex and costal margin narrowly black; 2 spots in the middle and at the end of the cell, and a stripe on the submedian vein black. Hindwing fulvous with black subcostal *copiosus.* streak and border. A macular band crossing the wings. — **copiosus** Stich. Ground-colour brown. Forewing with the median area behind the cell paler. Costa, two streaks, one within and one beyond the cell, an oblique row of confluent spots and the apex black. Hindwing with an oblique, often interrupted, discal band, a narrow subcostal streak and broad termen black; a terminal row of small white dots. Pataro (Essequibo), captured by RICH. HAENSCH in March and April. Unknown to me. Also of this species many forms are not easy to capture, being among the large numbers of very similar *Ithomiinae*, *Heliconius* and *Nymphalidae* only recognized with difficulty.

E. vibilia copies in its various forms the Acraeid genus *Actinote* (Pl. 83), but its ♂♂ mimic in part also the common Nymphalid *Colaenis julia* (84 b), displaying in consequence some superficial similarity with

E. aliphera, another follower of *julia*. **vibilia** Godt. (= mereani Hbn.) (79 e), the name-type; ♂ bright fulvous, *vibilia*. bordered with black; on the forewing a black wedge in the cell, an oblique band and submedian stripe. ♀ more gaudily coloured, almost like a very bright *edias*, especially on the under surface, which is also that of *procula*. Widely distributed and common in Brazil, but difficult to recognize among the innumerable *Actinote* flying about in July at Rio de Janeiro. The ♀ resembles these so much that, although flying slowly, it cannot be distinguished, until one sees the under surface. The flight of the ♂ is more rapid; it generally associates with the very similar *Dione junio* (84 e), *Megalura petraeus*, the numerous *Eresia* etc. — ab. **pallens** *pallens*. *Stich.* refers to a ♀ form with whitish-ochreous ground-colour and broader and heavier black markings. — **vialis** *Stich.* (79 f) is the northern form of Colombia and Central America. Ground-colour more brilliant fulvous, on the forewings the spots brighter yellow and deeper black. — **vicinalis** *Stich.*, based upon a ♀ from *vicinalis*. Ecuador, with duller ground-colour and reduced spots. — **unifasciatus** *Stich.* (79 f) has the entire apical half of *unifasciatus*. the forewing and the termen of the hindwings broadly black. From the Upper Amazon.

E. pavana Mén. (= thyana Fldr.) (79 e) resembles *Actinote pellenca* even more closely than *vibilia* ♀; *pavana*. differing from it only in the intranervial rays encroaching upon the yellow-brown ground-colour of the hindwings, which peculiarity it also shares with the *Actinote* ♂♂. ♀ coloured and marked like the ♂, but larger. Rio de Janeiro, Espiritu Santo.

E. lineata Salv. and Godm. (79 f). Almost precisely like *vibilia* ♂, but without the oblique bar crossing the cell. Ground-colour rather deeper yellow-brown. Central America and Mexico. Copies some species of *Colaenis* and *Dione*. — In the form **libitina** *Stgr.* from French Guiana the submedian stripe does not reach *libitina*. the anal angle.

E. lybia F. (= hypsiphe Cr., cinereomaculatus Goeze, fasciatus Goeze (80 a). Like *lineata*, but the black *lybia*. terminal border of the hindwings narrower, not frayed out inwardly. Common anywhere from Guayana and Amazonas throughout the eastern part of South America as far as southern Brazil. Generally met with on flowering shrubs, in the company of numerous species resembling it, such as *Colaenis julia* (84 b), *Dione junio* (84 e), *Eresia philura* (91 c). — **lybyoides** *Stgr.* (80 a) has the apical spot which is separated by the subapical band. *lybyoides*. paler than the ground-colour; on the under surface the forewing lacks the red basal line, and the red dots on the hindwing are absent. — **olympia** F. (= leucomma Bates) (80 a) has the apical spot quite white on a *olympia*. black ground. Central America and Colombia, together with the Nymphalid *Eresia emerantia* (91 d) which it exactly resembles.

E. tales Cr. (= thalestris Godt.) (80 b). Forewing red-brown at the base, traversed by black veins; *tales*. some bone-coloured discal spots surrounding the apex of the cell which is black. Hindwing with veins red in the basal half. Found in Guayana with its counterpart *Hel. vesta (erilo)*; also in Amazonas. — At the mouth of the Amazon we find **pythagoras** Ky. (= heraldicus *Stich.*), distinguished by the stronger yellow markings *pythagoras*. of the forewings; the cell-spot touching the red basal area, and the rays marking the veins on the hindwings are brighter. From Para to Santarem. — In **calathus** *Stich.* the discal spots on the forewing are united into a *calathus*. semi-band, the lower end of which points towards the base, not outwards as in *Eu. eanes*. — **surdus** *Stich.* *surdus*. (80 b). Rather larger, the red colour of the forewings much more intense, vermilion or almost purplish red, on the hindwings reduced to a mere trace at the very base. From Obidos on the Amazon and from Guayana. ab. **aquilifer** *Stich.* represents a transition to the preceding; the yellow spots on the forewing larger, but the *aquilifer*. red colour of the hindwings diminished. Likewise from Obidos.

E. heliconioides Fldr. (= cognata Weym.) (80 b). Forewing with a large, bone-yellow discal spot enclosing *heliconioides*. the rather small black spot marking the end of the cell; at the base only a few rays of red. Underneath the veins partially red; hindwing with 2 terminal rows of white dots. Colombia and Ecuador. — In **xenophanes** *xenophanes*. *Flidr.* from Colombia the forewing lacks the yellow spot in the cell, and of the red basal rays but a few traces are left.

E. eanes. All the forms belonging to this species have on the under surface of the hindwings the veins red, but only one row of silvery-white terminal spots, not two. The typical form **eanes** *Heur.* (80 c) has on the *eanes*. upper surface the basal streaks minium-red, and in the discus a pale yellow transverse band. From Peru and Bolivia, where it flies together with *Hel. vesta*, which it resembles so exactly that they cannot be distinguished when flying. — In ab. **farragosa** *Stich.* from Peru the basal red is diminished; — in **riffarthi** *Stich.*, like *farragosa*. *riffarthi*. likewise from Peru, also from Bolivia, the basal area shows no red at all and the yellow discal band is broken up into single spots. — **eanides** *Stich.* (80 c) has the rays distinct but brown-red; to the yellow discal band *eanides*. is added a spot at the apex of the cell, marking a sort of yellow star, as in *heliconioides*. It mimics exactly certain forms of *Hel. aglaope*, with which it associates in Bolivia and Peru. — In **aides** *Stich.* (80 c), from Bolivia *aides*. and Peru, all the red colour has disappeared from the upper surface. Flies in Bolivia with its double *Hel. pluto*. — Also of this species we know a form **pluto** *Stich.* (80 c), of which we figure the type. Differs from *aides* in the *pluto*. complete absence of the red markings on the base and the rays, and in the rosy-pink tinge of the discal

spot. It flies in Peru in company of the similarly coloured *Hel. melpomene* as well as of some *Actinote* and *Pieris* which resemble it. — A transition from the last described form to canides is **felderi** *Stich.*, which closely resembles *E. pluto*, but still retains the red rays. None of these forms are scarce, but not easy to recognize among the numerous *Heliconius* flying about; indeed it is only after one has learned to distinguish the *Eueides* from *Heliconius* by the slower motion of the wings, that one may hope to capture larger numbers of them.

cleobaea. **E. cleobaea** *Hbn.-G.* received its name from its close resemblance to certain species of *Lycorea*, although *Lycorea cleobaea* itself possibly was not its model. Forewing brown-yellow, intersected by black longitudinal stripes. The type is found in Cuba and Porto-Rico. — **zorcaon** *Reak.*, ranging through Central America as far north as Mexico, differs but little, in having the black apical markings of the forewing increased, in consequence of which the bands, which are somewhat lighter and in the ♀ rather pale yellow, are broken up into several more or less separate spots. — **adusta** *Stich.* (80 g) is an inconstant intermediate form, from Chiriqui and Honduras; hindwings with the band dissolved into a series of spots. Not scarce.

E. isabella resembles somewhat the preceding species, but the longitudinal striation of the wings is less regular. The forewings have the apical half more profusely marked with black, often black throughout; on the hindwings the median band is as a rule broken up. All the forms shade quite imperceptibly into one another so that the names given them have but little value. We figure here all the distinct forms, taken for the most part from the original types. As a rule the difference in colour is only due to the fact that in the several localities they have followed different models. The name-type **isabella** *Cr.* (80 d) occurs in the eastern portion of South America from Guayana to Central Brazil, according to reports as far as Bahia (where I found, however, only *E. dianassa*). Before the black apex an isabel-coloured oblique band similar to that we find in much worn or faded specimens of *dianassa*; but it differs from *dianassa* in having the large white or sulphur-yellow subapical spot replaced by a row of 3—4 small, pale coloured, isolated spots. In typical *isabella* the hindwings have the median band uninterrupted, whereas in **dissoluta** *Stich.* (80 f), from Peru and Bolivia, this is dissolved into isolated spots. — An intermediate form is **arquata** *Stich.* (80 g), having the median band also divided into spots which, however, are still touching one another; on the forewings the yellow subapical spots larger. Colombia and Panama. — **imitans** *form. nov.* (80 f) approaches *dissoluta*, but the sulphur-yellow oblique band is absent, being replaced by the ground-colour. — In **hübneri** *Mén.* (80 f) the oblique band is dissected into 3 spots separated by black; from Colombia. — **dynastes** *Fldr.* from Venezuela has the band loosely connected, in the ♀ yellow-ochreous, similar to that of **pellucida** *Srnka* (80 f) from western South America, distinguished from the others by having the median band reduced to a row of small oval spots. — Very similar is **seitzi** *Stich.* (80 f), from Colombia and Ecuador. Upper surface only marked with two colours, the oblique band as well as the apical spots being replaced by the ground-colour, whereas in **vegetissima** *Stich.* the sulphur-yellow band and apical spots stand out clearly upon the deeper ground-colour. From Ecuador. — **hippolinus** *Btlr.* (80 e) from Peru resembles *seitzi*, but has the apex of the forewing entirely black, without any spots. — The same is the case in **margaritifera** *Stich.* (80 e), which has, however, the median band of the hindwing broken up into oval black spots. — **personata** *Stich.* (80 e) resembles the latter, but has on the forewing the black colouring so much increased that it not only covers the entire apical area, but spreads to the middle of the wing where it confluesces with the black spot at the apex of the cell. Peru. — **brunnea** *Stich.* (80 e) is again like *personata*, but has on the forewing the black apical area interrupted by a chain of spots marked like the ground-colour. Likewise from Peru. — ab. **spoliata** *Stich.* from the Cauca Valley is based upon a ♀ in which the black markings are so much increased that on the forewing the ground-colour is almost completely obscured, and on the hindwing interrupted by an unbroken, heavy median band. *isabella* is, wherever it occurs, very common.

dianassa. **E. dianassa** *Hbn.* (80 d). Very much like the preceding; the forewing with a generally sulphur-yellow oblique band which in worn specimens fades to dull ochreous. At the apex a snowy-white, obliquely oval spot, occasionally tinged with yellow or dusted with black and followed (before the very apex) by a few white dots faintly shining through from underneath. Typical *dianassa* exactly copy *Hel. narcaea* (72 a) with which they associate. At Santos where the latter has the costal streak of the hindwings dusted with red, that band is also in *dianassa* generally tinged with ochreous, and **decolorata** *Stich.* (80 d) which accompanies the similarly coloured *narcaea* f. *satis*, lacks on the hindwing the pale yellow band altogether. In the company of *dianassa* we find, besides *H. narcaea*, a great number of similarly marked butterflies, such as *Protogonius drurii*, *Melinaea ethra* (33 d), *Mechanitis lysimnia* (34 b) and *nessaea* (34 b), *Ceratinia euryanassa* (35 b) etc., all of which occur in

Southern and Central Brazil near the coast, and it is necessary to be well acquainted in those regions in order to recognize this species among the host of similarly coloured Lepidoptera. It is rather common, but I have never observed it in great masses or swarms.

E. aliphera Godt. (80 a). Upper surface bright fulvous, with black terminal border, forewing with black *aliphera*. subcostal and median stripes and black oblique band; under surface buff, the veins dark. Widely distributed from Southern Brazil to Central America, along the east-coast, and far into the interior of the Continent to Bolivia and Peru. It is one of the commonest butterflies, varying but little since it exactly copies the very constant *Colaenis julia* (84 b). Only towards the northern limits of its range of distribution we find specimens having the colouring rather buff and with hardly any black on termen and transverse band, analogous to the form *C. julia cillene* (84 b) which also flies there; I call this form *ab. cillenula ab. nov.* (80 b). *aliphera* always *cillenula*. associates, aside from *Col. julia*, with the following similarly coloured species: *Dione juno* (84 c), *Megalura petrea*, *Eresia aveyrana* (91 d); undoubtedly also the Erycinid *Lymnas thyatira* of Guayana has adopted the protective pattern. — In Mexico and Central America we find another copy of the narrow, bordered form of *Col. julia* flying there; upper surface brilliant fulvous, the black terminal border narrower, but more sharply defined, the intranerval points stronger: = **gracilis** Stich. — Larva on Passiflorae; white, at the back yellow, marked *gracilis*. with brown and armed with black spines. Pupa dirty white, with dark spines and humps, the back and wing-cases marked with brown.

3. Genus: **Metamorpha** Hbn.

The only species of this genus, *Metamorpha dido*, was formerly united with *Colaenis*; but the most superficial examination of the shape of the insect and its wings, of the venation and in some respects also the earlier stages, shows us at once that it is an American representative of the Indian genus *Cethosia*. This fact becomes even more evident in the living insect. On approaching in the forests near Rio some larger clearing, one may notice a large, pale-coloured butterfly, flying slowly in a straight line, with a peculiarly slow, dream-forlorn motion, from one end to the other of the open space; suddenly, just before reaching the far end of the clearing, it turns around with a jerk, returning the same way in the opposite direction. This game is being continued for hours, for days, even for weeks, and one may observe its colours which in the beginning were quite fresh, fading and being rubbed off, may see the tears and rents in its wings growing larger after each shower. Sometimes it disappears for an hour or two, to rest on some vine or to sip honey from one of the neighbouring blossoming trees. In larger clearings one may occasionally observe two or more of these butterflies, each enjoying the same game; as soon as they see one another, they interrupt their flight for a moment, circle a few times around each other and then each returns to its post again. If one captures one of them, its place is, after a few days, generally taken by another one. These butterflies are *Metamorpha dido*.

Among Indian butterflies I know none that offers the same spectacle in so characteristic a manner as *Cethosia nietneri*. Anyone who has observed in the open air the two insects which in their outward appearance widely deviate from each other, must be struck with the close analogy in the habits of these two species which are separated by such enormous distances. But also their structure offers a good many analogous features: The broad head, the stout, densely haired palpi, the naked eyes, the long antennae in which the clubs are wanting, the shape of thorax and abdomen, the curved and dentate hindwings, as well as the venation, agree most closely in almost every point. Many have pointed out the difference in the cell of the hindwing which in *Metamorpha* is open, in *Cethosia* closed, but this is more than counterbalanced by the many analogies. Thus *Metamorpha* has on the forewing the first subcostal nervule arising before the end of the cell, just as in most *Cethosias*, whereas in *Colaenis julia* it originates exactly at the end and in *Col. phaerusa* behind it. The caterpillars are armed with spines, one pair of which, placed behind the head, is stronger than the rest; the pupa bluntly angular, the abdominal segments with dorsal prominences. The larva feeds on Passiflora; it grows very rapidly, the entire time required to mature the imago from the egg occupying less than 6 weeks.

M. dido. Wings transparent green, bordered with black; black bands crossing the forewings from the apex of the cell to the middle of the termen, the hindwing from apex to inner margin. Under surface with the bands and margins grey-fuscous, shaded with darker. Distributed throughout the northern part of South America and Central America, from Honduras to southern Brazil, Bolivia and Peru. — **ostara** Rüb. (84 a) is *ostara*. by far the largest form, ranging from Colombia to Peru, distinguished by the pale yellow-green colouring. — **diatonica** Fruhst. replaces the preceding in the north, from Honduras to Panama; much smaller than *ostara*, *diatonica*. its colouring intermediate between this and the blue-green **dido** L. of Surinam; this is found as far south as *dido*. Bolivia, but is on the Lower Amazon replaced by **pygmalion** Fruhst., characterized by the broader black *pygmalion*. bands both of the upper and lower surface; differs from *vernickei* in having the apex crescent-shaped instead of rounded, and on the hindwing the green ground-colour reduced by broader black bands. Ranges to Venezuela. — **vernickei** Rüb. (84 a) has the green ground-colour and the black bands deeper black, underneath the brown- *vernickei*. grey bands more uniform and rather narrower than in *ostara*. Southern Brazil and Paraguay. — Larva pale

grey-brown, the markings dark when young, paler when full grown. Some specimens ringed with dark brown like many *Cethosias*. Lives on *Passiflora*. The pupa resembles in general those of *Heliconius*, but lacks the wing-shaped appendages at the head, and the spines are replaced by blunt projections. Its colour is grey, marked with darker, the humps partly black, partly white; segment 1, 3 and 4 with silvery spots. The imago is always met with singly, although it does not anywhere appear to be scarce. It visits flowers, and I have seen it on Monte Corcovado near Rio associate with the quite similarly coloured *Victorina steneles*.

4. Genus: **Colaenis** Hbn.

The three species comprising this genus are all characterized by the fiery orange-red colouring of the upper surface which is bordered and banded with black. Structurally they differ in the course of the subcostal nervules so much that it is impossible to apply a general scheme. They are for the most part extremely common and may be considered as characteristic of the Neotropical Fauna, because they are as a rule the first large, brightly coloured butterflies greeting the new-comer on his arrival in South America. They rather remind us of the *Argynninae* which are connected with this group by the next following genus *Dione*. Their separation from *Dione* is an artificial one, one species displaying on the under surface of the hindwings some traces of silver. The larva closely resembles that of *Metamorpha*, feeding, like these, on *Passiflorae*. Pupa very much like those of our *Argynnis*, with a deep depression at the back, the head ending in a blunt conical point, the abdominal segments with dorsal projections. — The imago has as a rule a very rapid flight, holding the wings wide open when sipping on flowers. They fly the whole year round and often assemble at certain places in enormous numbers.

- julia*. **C. julia** F. (= *alcionea* Cr., *luteus* Goetze) (84 b). From Texas in North America throughout Central and South America to Peru and Paraguay; also in the West Indies. ♂ above brilliant fiery red, typical specimens slightly obscured at the base. From the costa at the middle a black oblique band to the black termen; ♀ with an additional black streak from the base of the forewing through the submedian area to the anal angle.
- litio*. Under surface buff, with whitish spots at the anal angle, edged with fuscous. — The Bolivian form **titio** Stich. has according to its author in the ♂ the ground-colour suffused with fiery red, a peculiarity occasionally shared by Brazilian specimens. — **delila** F. lacks on the forewings the black subapical streak, and the ground-colour is frequently more buff. From Central America, the north-coast of Colombia and Venezuela, and the West Indies outside of Cuba. — ab. **moderata** Stich. Dull ochreous, the black markings reduced; found together with the typical form. — **cillene** Cr. (84 b) is the form from Cuba; paler red, the forewing without the black marginal border, the transverse band only indicated at the costa. — **nudeola** Stich. is related to *cillene* in the same way as *moderata* is with the type; ground-colour dull buff. — Larva pale grey or grey-brown, the incisions darker, the fore part of the head marked with darker, the spines blackish; on *Passiflora vesper-tilionis*, *P. ichtyura* etc. Pupa coloured like the caterpillar, pale grey or pale yellowish-brown, with whitish projections and darker markings. Very common throughout eastern Brazil; in many localities one may see flowering shrubs just covered with these butterflies so that at a distance they appear as if adorned with fire-lilies. Their flight is very rapid; when resting they hold the wings widely expanded.
- phaetusa*. **C. phaetusa** L. (= *phaerusa* L.) (84 c). ♂ fiery red, ♀ greyish red, the black markings as in *dido*. Occurring from Central America to Argentina and Peru, but only locally, and in many places scarce. — **stupenda** Stich. (84 c) refers according to its author to particularly brilliant red specimens (probably only ♂♂?) said to be found in Panama. — In **deleta** Stich. the bands are said to be quite faded. — **lutulenta** Stich. refers to ♀♀ with dull yellow ground-colour; their home is "Paraguay and Dutch Guayana". This species has not developed any good subspecies. In contradistinction to the preceding which frequent roads and dry slopes, it inhabits the moist plains which it never seems to leave. Its flight is quite different from that of *julia*, much slower, the motion of the wings more irregular. Nothing is known of the earlier stages.
- euchroia*. **C. euchroia** Dbl.-Hew. (84 c). Upper surface, particularly in ♂, marked and coloured like the preceding, but underneath the colour resembles that of a dried-up, shriveled leaf, with a slight trace of silver. Widely distributed, and very common, from Venezuela and Colombia to Ecuador, Peru and Bolivia. — Specimens with dull buff ground-colour, especially common at higher altitudes in Colombia and Ecuador, are ab. **mellosa** *telesiphe* Stich. (84 d). — **telesiphe** Hew. (84 d), from Ecuador, Peru and Bolivia, has on the hindwing a yellow longitudinal band, on the forewing two bands of minium red. Occurs together with the similarly coloured *Heliconius tithraustes*. **telesiphe** (79 c). — **tithraustes** Salv. (84 d), closely resembling the preceding, found together with *Helic. sotericus* (79 c), it has the band on the hindwing bluish instead of yellow. Underneath all the forms resemble one another, but vary much individually and according to the locality. They are not very scarce, but are confined to certain localities, where the corresponding *Heliconius* also abound; at least I have never received any from elsewhere.

5. Genus: **Dione** Hbn.

This genus, formerly known as *Agraulis*, is outwardly characterized by the frequently very rich silvery of the under surface of the hindwings, traces of which we have already found in the last described species of the preceding genus. The venation is not constant and cannot serve to characterize the genus: thus in *moneta* the 1. subcostal nervule is emitted at the end of the cell, in *vanillae* behind it. Neither can the larva or pupa serve to distinguish the two genera; only a slight difference is to be observed in the structure of the antennae and in the palpi, which are distended like those of *Argynnis*. But for that reason to unite it with these, or on account of the open cell in the hindwing to separate it from the *Heliconinae* and class it with the *Argynninae*, I do not judge to be right, considering the many analogies existing between *Dione* and the *Heliconians*, as to their mode of life, distribution, structure, the spines of the larva, the food-plant, the scent-organs, the stink-glands of the ♀♀, the puffed up extremity of the ♂ abdomen, the bottle-shape of the eggs etc. But few, rather closely allied species are known.

D. juno Cr. (84 e). Above very much like *Col. julia*, together with which it is found. Under surface *juno*. with numerous silvery spots which, however, are neither so large nor so bright as in *moneta*. Not much is seen of these, when the butterfly is flying or when, the wings flatly extended, it sips honey from some flower, preferably some composite plant. The ♀♀ are often very much larger than the figured ♂, and vary individually as to the extent of the black markings, so that one can at the same time capture specimens with broad and with narrow border. At Santos in South Brazil I have even taken specimens with some fine reddish spots within the black terminal border; the figured specimen which likewise shows these, came from Rio. Specimens taken in Ecuador by HAENSCH during January, are very brilliantly coloured, above bordered with jetblack, on the under surface the ground-colour dark brown, not buff. On the forewing the beginnings of a third, pre-apical, black band, starting from the costa. Otherwise these specimens agree almost exactly with *andicola* *andicola*. Bates, described from Chimborazo, differing, however, from the form *huascama* *huascama*. *Reak.* (84 e), occurring from Mexico throughout Central America to Colombia and Ecuador. Here the black markings of the upper surface are reduced, the preapical band is obsolete and on the hindwings the termen interrupted by curved spots of the ground-colour. — Larva, like that of *Colaenis*, on Passiflorae, but living gregariously; at first black, later paler with dark markings and black spines; head without horns, but the dorsal pair of spines on the first segment curved forward over the head. Very common, from Mexico to Argentina and Peru, generally all the year round.

D. vanillae L. (= *passiflorae* F.) (84 f) may be distinguished from the preceding species by the black *vanillae*. dots on the upper surface. Under surface richly adorned with silvery spots. Ranges from Virginia in the United States throughout America southward to Buenos Aires, forming such a number of varieties that one might give at least 20 names, but which cannot be geographically defined. Neither is it possible to separate the different broods, for their whole development requires in the Tropics less than 4—6 weeks, so that a great number of broods follow one another throughout the year. In southern Brazil I noticed that the specimens taken in February were largest and lightest, that thereafter they became ever smaller and darker, until in August the ♀♀ were almost black and only 40 mm in expanse, after which time the variation took place the opposite way. The spots on the forewing vary greatly in number, being placed nearer together or farther apart; the veins may or may not terminate in spots. The spots in the cell of the forewings are beneath nearly always, above frequently centred with white, those marking the end of the cell occasionally united into a band. On the hindwing the terminal border as a rule with a chain-pattern (= *catella* Stich.), in northerly specimens, from Mexico and the Antilles, often only with some black anteterminal arches (= *insularis* Magn.). — We only mention one striking form from Peru and Ecuador, copying above exactly the colouring of *D. juno*: = *lucina* *lucina*. *Fldr.* (84 e). Forewings spotted only in the cell and on the termen, with an almost complete oblique band before the apex; hindwings with broadly black outer margin, devoid of any larger spots of fulvous. This form is of rather large size, although it does not come up to some specimens I took at Buenos Aires in January, the ♂♂ of which had, moreover, the forewings rather more pointed (= *maculosa* Stich.). Most characteristic is the under surface, where the apex contains on the forewing only one, on the hindwing only a few isolated silvery spots. Larva pale brown, ringed with darker, with orange-yellow lateral stripes suffused with grey above, and yellow-ochreous spines; underside dark brown. Head with two rather long spines. Feeds on Passiflorae, not on Vanilla. Pupa dark red-brown with white lateral and ventral stripes, provided in front with fine ribs or rudimentary teeth of a saw-like appendage such as we distinctly observe in some *Heliconius* (*apseudes*). In their flight and other habits the butterflies resemble our *Argynnis*; they love to visit flowers of various kinds, fly throughout the year, and belong to the commonest Lepidoptera of Tropical America.

D. moneta Hbn. Upper surface of both wings at the base, of the forewing in the costal area dark *moneta*. chestnut-brown, the veins black. Hindwings in the distal half orange-yellow, the marginal border black, spotted with rufous. Underneath the silver spots much larger and closer together than in *vanillae*; also the costa of the forewing silvered in places. From northern South America. — Our figure was made from a specimen

butleri. taken in Costa Rica, belonging to the form *butleri* *Stich.* (84 e), described as "generally less brightly coloured". Cuba specimens have the discal area of the forewing lighter; they were separated as *fa. poeyi*. Besides those of Costa Rica, STICHEL classes with *butleri* also specimens from Peru and Colombia; these, however, can hardly be distinguished from other South Americans. — *glycera* *Fldr.* (= *moneta* var. *Poey*) (84 e as *moneta*) is above more uniformly fulvous, differing therein, according to STAUDINGER, from typical *moneta* which have the base chestnut-brown. Notwithstanding the great difference between the figured specimens, all possible transitions are known; thus in either form the anal dots on the hindwings may be present or absent, and STAUDINGER is right in considering the specific separation of the two forms, although differing so much in their extremes, doubtful. Described from Venezuela. — *graphota* *Stich.* refers to the form of Colombia, distinguished by the darker ground-colour and heavier transverse spot in the cell of the forewing. But these characteristics vary very much, especially according to the altitude. The figured specimen came from Bolivia; it stands apparently midway between those of Peru and Venezuela, being paler than the former, and darker than those from Venezuela. The caterpillar which might give us some clue as to the relationship of the forms, is unknown. The species is very common.

2. Subfamily: Clothildinae.

Many authors have placed the only genus belonging to this group near *Argynnis*, although attention has repeatedly been called to the superficiality of this arrangement. FELDER compares it with the *Satyridae*, HERRICH-SCHÄFFER with the *Brassolidae*; both these authors based their classification upon the neurulation, arriving, however, at very curious results, and evidently being at a loss to know where to put them. DIETRICH and REUTER unite them with the Danaids. I just wish to point out that whenever this genus has been united with one or the other subfamily, it was not done without leaving grave doubts in the authors' minds, and I therefore favour the establishment of a subfamily of its own, following HAASE who regarded it as a Nymphalid s. s., although a very peculiar one.

1. Genus: Clothilda Blanch.

Butterflies of large size and most different appearance; all scarce and confined to a limited area, inhabiting only Mexico, Central America and the Antilles.

Head rather broad; palpi stout, but not distended as in *Argynnis*, of entirely different structure from that of all other known Nymphalids. Antennae of less than half the length of the costa, feebly clubbed; eyes naked; thorax strong; abdomen slender and rather short. Wings broad and large, the cell in the forewing closed, very broad. On the forewing the first subcostal nervule arises before, the second at the end of the cell, the third beyond it. The median nervules far apart. Hindwings large, with deeply dentate termen, only in the *insignis*-group less distinctly scalloped. Precostal bifurcate, arising at the origin of the subcostal. Costal vein very short, ending before or at the middle of the costa. Nothing is known about the earlier stages, little about the habits of the imago, except that they prefer the open country, and that some count among the greatest rarities.

numida. **C. numida** *Hbn.* (= *pantherata* *H. Schöff.*) (83 d, e) resembles above somewhat a large *Argynnis*; yellow-ochreous, spotted with black-brown. Termen of forewing with double spots of fulvous. Under surface, especially of the hindwings, marked with dark spots margined with pale lines displaying a resinous, fatty gloss. From Cuba. — *pantherata* *Mart.* (= *briarea* *Godt.*) is somewhat smaller, and has both above and underneath the termen adorned with double white dots. Cuba and Haiti. Scarce.

insignis. **C. insignis** *Salv.* (83 d, e). The forewing has both above and beneath the discal area beautifully crimson, spotted with black. On the hindwing the discal area traversed by a band which is yellow-ochreous above, underneath white and broader. From Costa Rica. — *thirza* *Hbn.* (= *euryale* *Klg.*) is a closely allied species, which has been known for some time, occurring in northern Central America and Mexico; forewing likewise with the discus purplish, but the hindwing lacking the pale anteterminal band.

cubana. **C. cubana** *Salv.* (= *jaegeri* *H.-Schöff.*) (83 d, e) resembles underneath almost exactly *insignis*. But above it is very different, deep fuscous, the forewing with a white macular band; hindwing with a yellow band. The typical form is only known from Cuba, where it is rather scarce. The Haiti form with which it formerly was united, differs somewhat: = *jaegeri* *Mén.* Nothing is known of the earlier stages. Our figure of the under surface is rather too large, but *cubana* is frequently considerably larger than *jaegeri*.

3. Subfamily: **Nymphalinae**.

Group A: Argynnidi.

Here we meet for the first time with a group of Nymphalids represented also in the Palaearctic Region*). Therefore I refer to what has been said, in Vol. I, p. 211 ff., about the *Argynninae* under "Tribus**") *Argynnidi*". Also in this, the American part, we combine for simplicity's sake the genera *Phyciodes*, *Eresia*, *Chlosyne*, separated by REUTER as *Melitaeidi*, with the true *Argynnidi*. In the far North of America representatives of the *Argynnis*-group, sometimes separated as *Brenthis* or *Boloria*, not only play the same part as in the Old World, but frequently even belong to the same species, advancing here as well as there among all *Diurna* farthest to the Arctic North. Farther South we see the *Brenthis* flying side by side with typical *Argynnis*, being more and more superseded by these, which, together with *Melitaea*, prevail in Southern Canada and the United States. Still farther South, in the southern United States, it is *Euptoieta* which, less by the number of species than of individuals, takes the lead, *Melitaea* being replaced by *Phyciodes* and *Chlosyne*. The latter genus prevails throughout Mexico and Central America, and the gorgeous, mostly jetblack *Chlosyne* are, by virtue of their enormous abundance and their almost unique variability, quite characteristic of the butterfly-fauna of the countries lying to the south of the tropic of cancer. Farther South their place is taken by the generically most closely allied *Phyciodes* and *Eresia* which, especially in the tropical forest-zone of South America, have developed an enormous number of forms, being thus the largest American Nymphalid genus. In the far South, in the Argentine Pampas and Patagonia, the *Euptoieta* reappear which in the Tropics had completely disappeared, and finally the ring is closed again in the Chilean Andes by *Brenthis*. Thus we may illustrate the occurrence in America of the principal groups of *Argynnidi* by the following scheme:

60° N. L.	<i>Brenthis</i>
45° N. L.	<i>Brenthis</i> , <i>Argynnis</i> , <i>Melitaea</i>
35° N. L.	<i>Euptoieta</i> , <i>Phyciodes</i>
25° N. L.	<i>Phyciodes</i> , <i>Chlosyne</i>
10° N. L.	<i>Chlosyne</i>
0	<i>Phyciodes</i> , <i>Chlosyne</i> , <i>Eresia</i>
15° S. L.	<i>Phyciodes</i> , <i>Eresia</i>
30° S. L.	<i>Phyciodes</i> , <i>Euptoieta</i>
40° S. L.	<i>Brenthis</i> .

 1. Genus: **Euptoieta** Dbl.

Although numbering only 3, perhaps even only 2 species, this genus plays an important part by its enormous abundance of individuals. They closely resemble *Argynnis*, with which they also anatomically agree very well, so that neither DOUBLEDAY nor FELDER or REUTER succeeded in separating them in a natural way. Like the true *Argynnis*, they have the head uncommonly large and thick, so that in regularly set specimens the base of the costa touches the eyes. These latter are on either side of the broad frons enormously distended, naked (i. e. without rough hair); tongue strong, distinctly coloured, the antennae suddenly terminated by a conspicuous club which after drying appears flat. Palpi large and long, porrect, distended, thickly covered with rough, bristly hair. The forewings have the costal margin, especially at the base, strongly curved downwards. All the cells are closed, but in the hindwing the lower discocellular is so feeble that it can hardly be seen and, indeed, has frequently been overlooked; in the forewing the upper discocellular strongly curved inwards. The hindwing is remarkable on account of the almost rectilinear costal margin, in consequence of which the apex is almost as pointed as in *Brenthis*. — Also in the earlier stages it closely approaches *Argynnis*; especially the shortness of the blunt, stout spines of the larva, and the completely rounded anterior part of the pupa remind us of *Argynnis* and *Melitaea*. Its distribution is rather curious. *E. claudia* is found in the northern United States, being replaced farther South by *hegesia*; on the Isthmus we meet, quite locally, *bogotana*, and again, quite in the far South, *claudia* reappears, hardly changed at all; thus we find, advancing from the North to the South, the following species: *claudia* — *hegesia* — *bogotana* — *claudia*.

E. claudia Cr. (= *columbina* Godt., *daunus* Hbst.) (85 a). The upper surface fulvous in the outer half, *claudia*, faintly suffused with olive-green in the inner half; through the discus a paler, yellow-ochreous band. The

*) Only among the *Cethosia* which belong to the *Heliconiinae*, we find one species touching the limits of the Palaearctic Region in the South-East. Cf. Vol. I, p. 343.

**) In Vol. I we divided the *Nymphalidae* into "Tribus", several of which were united into a Subfamily: in that way the *Argynnidi* came, together with the *Vanessidi*, into the subfamily *Vanessinae*. We here drop all further subdivisions, treating the *Argynninae* as an independent subfamily.

name *claudia* should by rights only be employed for the North American form, although the upperside does not show any great constant difference between this and the South American form. On the whole the latter appears clearer yellow than northern specimens, but this is anything but constant, on the contrary, the species varies even in one and the same locality to such an extent that I have taken near Montevideo specimens with completely obscured upper surface. But there is a slight difference on the under surface, where in the North American form the dark basal area widens at the costa, whereas in the southern form it becomes narrower. We figure of the North American form the ♀, of the South American form the ♂, keeping for the latter *hortensia* the name *hortensia* Blanch. (85 a as *claudia* ♂). Although according to KIRBY *hortensia* refers to a form of *hegesia*, it is still doubtful whether *hegesia* and *claudia* which are nowhere found occurring together, are not altogether different forms of one and the same species. — Larva white or yellowish, with brownish longitudinal stripes and similar prolegs; head and forelegs glossy black; feeds on Passiflora. Pupa light pearly-grey, faintly suffused with pinkish, abdomen and leg-cases tinged with yellowish. The wing-cases have the veins feebly streaked with black, and at the back a few black dots. The imago is very common in the open country, preferring prairie- and meadow-land, visiting clover and yellow composite flowers such as *Leontodon* etc. They fly in late summer, in the United States in July, in Argentina in January and February.

bogotana. **E. bogotana** Stgr. This species which on the upper surface can hardly be distinguished from the Argentine form, only perhaps by the slightly smaller black spots, differs greatly on the under surface in having the hindwings uniformly grey-fuscous, but marked with several undulate longitudinal lines of dull silvery white. *poaria*. It seems to be an alpine form, but little known. Southern Central America and Colombia. — **poaria** Schaus (86 f) hardly seems to differ, in having the undulate lines on the under surface of the hindwings not silvery, but only dull white with a resinous lustre. Southern Central America.

hegesia. **E. hegesia** Cr. (85 a). Upper surface with dark spots in the outer half of the wings; the paler discal band rather faint, which, being added to the uniformly fulvous colouring of the hindwing from which only the terminal border is excepted, gives this form a rather monotonous appearance. Under surface likewise more unicolorous, but most variable, the hindwing occasionally quite monotonously sandy brown. From Arizona and California, through Central and South America to Southern Brazil, in clearings in the forests; locally not scarce.

2. Genus: **Argynnis** F. (= *Brenthis* Hbn., *Acidalia* Hbn., *Boloria* Moore, *Speyeria* Scudd.)

Although on the whole very homogeneous, the *Argynnis* represent one of the largest genera of the great family of *Nymphalidae*; at the same time they have an enormous range of distribution, being found on every Continent and in every Faunal Region. It is true that there are but a few isolated species which thrive in the Tropics and Subtropics; thus we meet of a chiefly Indian species (*hyperbius*) a number of forms all the way from Abyssinia to Australia; a few Etheopean species occur quite isolated in the Mountain-ranges of Kilima Njaro in Central Africa, and just as much isolated as these we observe a few species in the mountains of Temperate South America. But aside from these few stray forms, by far the greater number of species belongs to the Northern Temperate Zone both of the Old and New World, and it is difficult to decide, whether the Palaearctic or Nearctic Region is to be regarded as their chief centre of distribution.

The large number of forms which in their outward appearance frequently are very similar and for that reason not always easy to distinguish, has tempted a number of authors to split this rather homogeneous genus. Originally founded in 1807 by FABRICIUS, it was separated by HÜBNER into 5 genera based partially on the shape of the wings and palpi, partially on the colouring of the under surface, but including also some species of *Melitaea* and *Agraulis* (*Dione*). It was first OCHSENHEIMER (Schm. Eur. IV, p. 16; 1816), and after him DOUBLEDAY (Gen. of Diurn. Lep.), who took a more comprehensive view of the genus, refusing to recognize a division which, far from simplifying it or adding to clearness, only tends to cause unnecessary confusion, a consideration mentioned already in the Palaearctic Part of this Work (Vol. I, p. 226). Somewhat greater rights one might concede to HÜBNER's genus *Brenthis* which later was renamed *Boloria* by MOORE, for reasons explained in the Indo-Australian Part (Vol. IX, p. 512) in the general diagnosis of *Boloria*; (cf. also Vol. XIII, p. 231). Here we have a group differing from the *Argynnis* s. s. by certain peculiarities of structure. Its main characteristic is the position of the 2. subcostal nervule, which in most *Brenthis* is emitted behind the end of the cell, whereas in the true *Argynnis* it arises more or less distinctly before that; palpi relatively slender; the short median spur which in *Argynnis* is emitted near the base of the forewing, and in the ♂♂ the subcostal tuft of hair which in many species of *Argynnis* s. s. is very distinct, are either completely wanting or only feebly indicated. But since the position of the subcostal nervule is not at all constant in all the species of either group, but varies within rather wide limits, approaching in some species the apex of the cell so much that it is impossible to say which group they should be placed in, and since, moreover, also the other

characteristics seem subject to variation, we here refrain from separating the *Brenthis*, but rather subordinate them to *Argynnis* as a special subgroup.

As already mentioned above, we find in America most *Argynnis* in the northern part of the Continent which has a more or less severe winter-climate; and here it is the mountainous West which has produced by far the greater number of species. It is just these western species that, on account of their frequently very close similarity, offer great difficulties. Regarding this STRECKER writes (Catal. p. 118): "The *Argynnis* of the western mountains and Pacific slope are, besides the *Colias*, undoubtedly among all the day-butterflies of North America the most difficult to determine, being in the most extraordinary manner subject to variation. Thus the species *monticola* Behr and *zerene* Bsd. which had been regarded by BOISDUVAL as identical, form such endless varieties that it seems impossible to determine to which they belong". SCUDDER who tried to distinguish the closely allied species by means of their sexual organs, had to give it up, finding neither these nor the androconia sufficiently reliable.

The American *Argynnis* are butterflies of medium or large size; the colouring is generally fulvous with more or less distinct, black markings consisting of undulate lines and round or sagittate spots, all of which are as a rule somewhat feebly repeated on the under surface of the forewing. Characteristic of the under surface are the silvery spots which are, especially on the hindwings, in nearly all the species more or less distinct, although greatly subject to variation, disappearing even completely in some individuals; as a rule they are also found, although to a much lesser extent, on the apex of the forewings, which altogether rather closely agrees with the hindwings, both in colouring and markings. Also the black markings are rather variable, in as much as the spots and bands may replace the fulvous ground-colour to such an extent that the wings appear almost black. Besides such Melanism there occur also cases of Albinism, in which the black markings of the upper surface appear almost whitish.

On the whole the sexes do not differ greatly from one another, chiefly in the ♂♂ having the ground-colour of the upper surface more brilliant and more broadly fulvous, whereas the ♀♀ have the black markings heavier and the ground-colour paler. But in some species the ♀♀ differ quite considerably from the ♂♂ (*Idalia*, *Ito*, *nitocris*, *cybele*, *diana*, *nokomis*): indeed in the latter two the typical ground colour can not at all be distinguished any longer, a phenomenon which, whether justly or wrongly shall not be discussed — has by some authors been explained by Tertiary Mimicry. Aside from these characteristics, the ♂♂ of the true Argynnids may nearly always be easily told by the tertiary sexual organs consisting of long tufts of hair placed above the subcostal vein on the hindwing.

Head large, eyes naked, very large and prominent; palpi distended, heavily clothed with hair, with the exception of the last joint which is very small and pointed. Antennae moderately long, hardly measuring half the length of the costa, with well defined, flattened, pear-shaped clubs. Abdomen not reaching the anal angle. Legs strong, the middle and hind tibiae armed with spines. The wings are strong, the hindwings as a rule more or less denticulate. Subcostal five-branched, the third nervule always nearer the fourth than the second. In the ♂♂ the second subcostal nervule coalesces with the subcostal stem for some little distance. The cell of both wings is closed by a fine discocellular which on the forewing invariably joins the median vein beyond the origin of the second median nervule, but on the hindwing precisely at that place. The hindwing has a well-defined, incurved precostal nervule.

Of the former stages of the American *Argynnis* we have but an imperfect knowledge. The eggs are conoidal, truncated, slightly depressed at the apex, rounded at the base; ornamented on the sides by straight or slightly undulate, raised ridges connected with each other by smaller raised cross-ridges.

The caterpillar is cylindrical, stout and short, covered at the back with 4 rows of moderately long fleshy spines, and with one row on each side; those on the first segment generally somewhat longer than the rest; the sides of the venter covered with fine tubercles. In colour they are mostly black or brown, more or less spotted with red or yellow. All of the American species, so far as known, feed on violets only at night, holding themselves concealed in day-time. They hibernate when young, sometimes even before the first moult, feeding up in early spring, pupating after completing 5 moults. Pupa angular, with several rows of short, pointed projections; thorax strongly prominent, deeply incised behind. Head occasionally armed with blunt horns, otherwise more rounded.

Many species are, wherever they occur, rather common; preferring meadows bordered by woods, clearings in the forest, and grassy, flower-covered slopes. Their flight is rapid, whirring, that of some of the larger species floating. They visit flowers of all kinds, in preference the blossoms of thistles, *Rubus*, *Asclepiadeae* etc.; most of them are not difficult to capture, especially in the earlier morning hours, becoming much more shy in the hotter afternoon.

Subgroup I: *Argynnis F.**idalia.*

A. idalia *Drury* (85 c) is one of the largest and most showy of the American *Argynnis*. The upper surface of the forewings of the ♂ is fulvous, marked very much as in other species of the genus; hindwings with the exception of the basal area almost deep black, suffused with a bluish lustre, with two rows of large pale spots. Whereas the ♂♂ only have the inner, discal row pale cream-coloured, the outer marginal one being deep ferruginous, the ♀♀ are at once distinguished by having on both wings also the marginal row creamy-white. On the under surface the forewings are pale fulvous, with a more or less complete marginal row of crescents displaying a feeble brassy-yellow, resinous lustre, and with a few larger spots of lustrous yellow along the costa. Hindwings dark olive-coloured, with three rows of large irregular spots of a dull greenish-silvery colour and a smaller number of similar spots and stripes at the base. Expanse: 3.0—4.0". — Caterpillar after the last moult nearly 1.8" in length, black, with bands and stripes of ferruginous and orange colour, and with six rows of fleshy spines covered with black bristles, those of the two middle dorsal rows white with black tips, of the lateral rows black with orange base. Like all known *Argynnis*, it feeds on violets at night. — Pupa large, brown, with yellow spots and reddish wing-cases. Occurs in the eastern United states, from Maine to Nebraska and Arkansas, but almost everywhere local; being during some years rather abundant, it becomes rather scarce in others. Especially in the Northern Highlands of New Jersey and in the mountainous parts of the states of New York and Pennsylvania, one often finds large numbers in certain openings in the woods. It flies from the end of June to the beginning of September.

As in many *Argynnidi*, we sometimes observe in *idalia* cases of the most far-going Melanism, where especially the ♂♂ have the upper surface of both wings almost completely black, even the pale macular rows on the hindwings being practically obsolete. In connection with this we often observe a reduction of the silvery markings of the underside, where either only the outer row of spots or all the rows may disappear, only a few spots at the inner margin and base remaining visible. *idalia* was by SCUDDER (Syst. Rev. 23) placed into a genus of its own, *Speyeria*, on account of the somewhat varying neuration, especially the position of the 2. subcostal nervule; but, as we have already pointed out in the general diagnosis, a separation of the Argynnid species by means of this characteristic is not practicable, as it would lead to the most impossible results; for which reason one has justly abandoned both the genus *Speyeria* and HÜBNER's *Acidalia* which was by MOORE applied also to *A. hyperbius (nipse)*.

diana.

A. diana *Cr.* (85 b) is a classical example of the most highly developed sexual Dimorphism. The ♂♂ have the upper surface of both wings deep black-brown, with a broad marginal border of fulvous, this border being on the forewings interrupted on the nervules by rays of the dark ground-colour, and enclosing on both wings two rows of roundish dark spots, which, diminishing in size on the hindwings, gradually disappear towards the anal angle. The colour of the under surface is pale buff, the forewing marked with dull black at the base and in the inner discal area, and spotted with pale bluish near the apex of the cell. The hindwings have the inner two thirds densely dusted with grey-brown, and adorned with two rows of narrow, elongate silvery submarginal lunules, the inner frequently obsolete at the middle; in addition a few stray silverspots near the base. The ♀ is on the upper side a rich bluish-black, somewhat darker on the forewings which in the distal half have 3 almost parallel rows of large bluish spots, the outer of which sometimes appears almost white. Also on the hindwings we find three more or less complete rows of bright blue spots, the inner almost appearing like a broad band, gradually tapering anally and interrupted on the nervules by rays of the ground-colour, each component part enclosing a circular spot of jet black; the outer, terminal, row is occasionally only indicated. On the under surface the ♀ has the ground-colour deep grey-fuscous, somewhat darker on the forewings, which latter are richly marked with blue and black spots. The gorgeous rows of silvery spots found on the under surface of the hindwings of the ♂♂, reappear in the ♀♀, and are most conspicuous on the terminal margins. Expanse: 3.4—4.0". — Egg greenish-white. Larva, when young, resembles up to the 5th moult those of *A. aphrodite* and *cybele*; thereafter it is velvety-black, grows very much larger, and the spines which are arranged in 6 rows, with their base orange-red, are much longer. Head dull brown. Pupa dark brown with short, pointed, lighter coloured tubercles on the dorsal side. — **diana**, among all the American *Argynnis* the largest and most magnificent, is confined to the southern portion of the Appalachian Region of North America; it is not scarce in the mountainous parts of Virginia and West Virginia, both Carolinas, Tennessee, Kentucky and Georgia, whence it has spread westward to Ohio, Indiana, Arkansas and Missouri. It is extremely wary, rising at the least disturbance and disappearing above the trees. Even on very bright days

they appear rather late in the morning, after the rays of the sun have warmed the ground and penetrate into the mountain-ravines, and they disappear as a rule again towards 4 o'clock in the afternoon. The principal season is July and August, the ♂♂ appearing somewhat before the ♀♀, in North Carolina at the end of June; some stray ♀♀ are still found at the end of September.

In EDWARDS' Butterflies of N. A. we find the figure of a fossil butterfly found in the Miocene strata in Croatia. The similarity between this and the ♂ of *A. diana* is very striking. OSWALD HEER, from whose work (*Die Insektenfauna der Tertiärgebilde von Oeningen und von Rodoboj in Kroatien, 1847—53*) the figure was taken which in the text is named *Vanessa pluto* and whose colours seem in parts preserved, points himself to this resemblance which is, "besides in the shape, especially evident in the black ground-colour and the pale yellow marginal band of spots, the several parts of which are clearly separated by the veins, reaching the termen and each enclosing two black ocelli. Since the fossil is considerably smaller than *A. diana*, perhaps it is more nearly allied to *Vanessa*". Together with *pluto* there were found dragon-flies with spotted wings, similar to those found in the southern United States (EDWARDS).

A. nokomis Edw. (86 a). ♂ above uniform fiery fulvous, similar to *A. leto*, with the characteristic *nokomis* submarginal markings, which are rather heavier than in *A. aphrodite*. Basal area but very slightly obscured. Termen bordered by two parallel lines, the outer quite fine, the inner heavier, the enclosed space fulvous like the ground-colour, dissected by the black nervules into isolated spots. The spots in the discal row small, roundish; on the hindwings the submarginal lunules are separated from each other and from the inner marginal line. Under surface greenish golden-yellow, the forewings laved with pink at the base and on the inner margin, the apical portion golden-yellow. The anterior 6 submarginal spots brightly silvered. Hindwings with large silvery spots edged with black, in the outer row all around, the others only on the inside. Abdominal margin and the basal part of the costa slightly silvered. The ♀ has the ground-colour of the upper surface pale brownish-yellow, similar to *A. leto* ♀, slightly shaded outwardly with fulvous; the black markings much broader and not so sharply defined as in the ♂; the nervules are also broadly scaled with black, the whole tending to fuse and run into one another to such an extent that the yellow ground-colour disappears almost completely from base to discal area, leaving in the outer half only some relatively small, roundish or subquadrate spots resembling in shape, distribution and size the blue spots in *diana* ♀ and enclosing, like these, the rounded extradiscal black spots. The under surface like that of the ♂, with all the markings heavier; but the ground-colour is not greenish, but more clear yellow, and the margins of both wings as well as the apex of the forewing much irrorated with black. The hindwing has the basal portion more obscured by greenish-brown tints, less shaded with black. Expanse of ♂ 3.4", of ♀ up to 3.6". — STRECKER regarded *nokomis* as a pale form of *A. cybele*, developed in the arid salt steppes of Utah and Arizona. First described from a specimen received by EDWARDS in 1862 through the Smithsonian Institute at Washington, marked "Bitter Root Mountain". Later, in 1871, Lieut. WHEELER captured on an exploring trip through Arizona 5 ♂♂ 2 ♀♀. But it has ever been very rare. Besides in Arizona, it has also been taken in southern Utah. Nothing is known of the life-history of the species.

A. nitocris Edw. (86 a) was treated by EDWARDS as a separate species, whereas other authors regarded *nitocris* it as a form of *A. nokomis*, intermediate between this and *leto*. As in many of the North American *Argynnis*, we find also regarding *nitocris* much uncertainty, the more so since EDWARDS himself addressed STRECKER's figure of *nokomis* ♀ (in Report on the RUFFNER Expedition) as an aberrative form of *nitocris*. The ♂ resembles above *nokomis*; bright fulvous, much obscured from base to middle of disk, except on a portion of the cell in the forewing. The space between the two marginal lines rather wide, uniformly fulvous. The spots in the submarginal row on the forewings sagittate, the anterior ones touching one another and the inner line; the outer discal spots on the forewings irregular in shape and size, on the hindwing minute. Underside of the forewings cinnamon-red almost throughout, on the apex a small ochre-yellow patch enclosing a brown spot. Hindwing from base to beyond the second, outer row of spots, as well as the outer margin, deep rusty redbrown, occasionally dusted with grey-green, and with a broad submarginal band of rufous. The silvery spots as in *nokomis*. ♀ above blackish-brown, darker than *nokomis* ♀. The black markings from base to middle of disk nearly lost in the dark ground-colour. The median rows of spots pale yellow, the submarginal spots whitish, as in *nokomis*. The light spots of the hindwings narrower than in most examples of *nokomis*, owing to the broad edging of brown upon the nervules. Under surface of the forewings somewhat deeper red than in ♂, with the apex clearer yellow. Hindwing darker brown, with the yellow submarginal band divided into spots by the broadly fuscous nervules. Silverspots as in ♂. Expanse of ♂ 3.0—3.3", of ♀ 3.3—3.8". Arizona, Colorado and Nevada. The ♂ type came from White Mts. in N. E. Arizona. Specimens from Colorado differ from those of Arizona, besides by their larger size, by the darker red of the entire under surface of the forewings; the inner half of the hindwings from the base to beyond the second row of spots, which in Arizona specimens is

dusted with greyish green, is here deep fulvous, almost as in *A. aphrodite* ♀. As in *nokomis*, nothing is known of the earlier stages. — *coerulescens* Holl. is a peculiar form from northern Mexico, discovered in 1899 by C. TYLER TOWNSEND, and described by Dr. HOLLAND as a variety of *A. nitocris*; Prof. SMITH, however, upon comparing the genitals, regards it as a separate species. ♂ differs but slightly from typical *nitocris* ♂♂ in having the inner half of both wings more strongly obscured, and the black markings of the upper surface more confluent; on the under surface the base and inner margin of the forewing deeper red, the black markings heavier. But the ♀ differs from typical *nitocris* ♀♀ to such an extent that a casual observer might take them at first for *diana* ♀, on account of the gorgeous blue colouring of the submarginal band of spots on both wings. Upper surface with base and median area deep black, with a faint violet lustre. On the under surface the markings resemble those of normal *nitocris*, but the forewings are darker red. Hindwings with the inner half to the median row of silvery spots deep olive green, the submarginal band yellowish-green; other specimens have the inner half of the under surface of the hindwings deep chestnut-brown; but in every case the colouring of the light submarginal band of spots is more or less greenish, never honey-yellow as in normal *nitocris*. In size it approaches *nitocris*. *coerulescens* is not at all scarce on the Upper Piedras Verdes, in the Sierra Madre (State of Chihuahua, Mexico), in September at elevations of from 7000—7200 ft. — As var. *nitrocaerulea* Cockerell a form was described from southern New Mexico, forming in some respects a transition from *nitocris* to HOLLAND'S *coerulescens*. The ♂ differs above but slightly from typical *nitocris* ♂♂; but underneath the basal area of the hindwing is more cinnamon-red, strongly contrasting from the ♀. ♀ above with the inner half deeply purplish-black, the quadrate submarginal spots very pale yellowish, faintly suffused with pinkish. Under surface: Terminal band light green, the subterminal band of spots pale yellow, the base of both wings very dark, with purplish lustre. The type was taken at Beulah, Sapello Cañon (New Mexico) in August. But there exist in New Mexico of this form also ♀♀ which are fulvous: ab. ♀ *rufescens* Cock. — On the earlier stages Prof. SKINNER (Ent. News 1907, p. 318) has given us the following notes: Eggs before hatching reddish, of the same structure as those of other known species; they were deposited on Aug. 24th.; the caterpillars which hatched on Sept. 7th., were at first pale greenish-yellow, with 11 rows of green tubercles, those at the sides covered with long hair; head black. After the first moult there appeared a number of glossy black spines, provided with thick dull black hair. Body yellowish-brown, covered with numerous single bristles. Nothing is known of their further development.

leto. **A. leto** Behr (86 b) is closely allied to *A. cybele* with which it was identified by BOISDUVAL; but it might be just as well taken for a separate species as *nokomis*. *leto* replaces *cybele* on the Pacific coast, from California to Washington, and was observed by GEDDES as far north as Fort Macleod in the Canadian Province of Alberta. ♂ above not unlike the ♂ of *nokomis* and *cybele*, but the ground-colour duller and paler fulvous, the basal area much more obscured, the black markings finer. The spots in the submarginal rows on both wings are separated from each other and from the inner line. On the forewing the trans-discal spots rather large, roundish, followed by a zigzag-shaped broken band of spots. Under surface of the forewings bright fulvous, the costal margin and distal border buff; veins and base shaded with brown; the markings of the upper surface are repeated underneath, the marginal spots not silvered. Hindwings with pale straw-yellow submarginal band, as in *cybele*; the silver spots very distinct, but the base of the costa and the abdominal margin but slightly, if at all silvered. ♀ marked like ♂, but the ground-colour is pale straw-yellow, strongly contrasting with the chocolate or deep black-brown markings, especially in the basal area of both wings, where the spots confluence so completely that the inner half appears uniformly brown-black. Beneath it resembles the ♂, with basal area and inner margin reddish-brown; but the dark markings are deeper black, the light portions paler. Expanse: ♂ *charlotti*. 2.4—3.0", ♀ 3.0—3.3". — *charlotti* Barnes refers to a form from Colorado, distinguished in the ♀ by the uncommonly broad yellow band on the under surface of the hindwings. — We have no knowledge of its life-history. *leto* is found from Central California northward to Washington and Alberta. Washington specimens differ from the southern form in the darker colouring of the base of the hindwing. The type of *leto*, like all the other types of BEHR'S, was destroyed in the great earthquake of San Francisco.

cybele. **A. cybele** F. (= *daphnis* Cr., baal Streck.) (85 c ♀, d ♂). ♂ above resembles that of the preceding species and of *leto*; the fulvous ground-colour shaded with brown at the base, and finely dusted with blackish in both sexes, especially on the forewing. The submarginal crescents on the forewing are joining, but on the hindwing detached. Under surface of forewings yellowish-brown, the apical space yellowish, enclosing a brown patch on the costal margin. Termen near apex bright brown, towards the inner angle yellowish; the anterior submarginal and subapical spots brightly silvered. The black markings of the under surface are more faintly repeated underneath. The hindwing has the basal two thirds to the submarginal row red-brown, more or less mottled with yellow. Distal margin brown, shading into yellowish towards the anal angle. All the silvery spots much larger than in *leto*. The pale brownish-yellow submarginal band between the outer rows of spots is never obliterated by being invaded by the darker ground-colour of the basal and marginal tracts. Abdominal margin slightly silvered. ♀ differs

from ♂ in the paler ground-colour and the deep chocolate-brown, occasionally nearly black, shading of the inner half of both wings. All the markings of the upper surface much heavier than in ♂. On the under surface the sexes differ but little, the colouring of the ♀ being somewhat duller. Expanse: 3,0"—4,0". — Egg conoidal, truncated, shorter than broad, honey-yellow; the vertical ribs partly extending to the apex, partly ending at $\frac{2}{3}$ of the distance from the base. The caterpillar, when first hatched, is greenish, mottled with brown, later chocolate-brown, after the last moult velvety-black, beneath chocolate-coloured. Head blackish, shaded with chestnut-brown behind. The body is ornamented with 6 rows of shining black branching spines marked with orange-red at the base. In the North the eggs are mostly deposited in August; the young larvae go in lethargy immediately after being hatched from the eggs, hibernating, and feeding to maturity in early spring; in the southern States, however, they often hibernate after several moults; this probably accounts for the early butterflies one occasionally sees, from which a second brood may result; like all the other known larvae of *Argynnis*, they only feed at night. Pupa dark brown, shaded with reddish-brown or slaty-grey, sometimes glossy, sometimes dead leaf-like, a trifle compressed laterally; head and wing cases very prominent. The pupal state lasts about 16 days. — *cybele* ranges over the northern and middle Atlantic States of North America, from Nova Scotia and Maine, where it is rather scarce, southward to Virginia and North Carolina (Macon Co.), westward to Illinois and along the Mississippi Valley to Nebraska. SCUDDER draws the line of its western limits through the middle of Dakota and Kansas. In the North it is rather abundant in June and July, stray specimens appearing already in the middle of May; one meets it until September on blossoming clover-fields, in gardens and along roads, eagerly visiting the blossoms of thistles, *Asclepias tuberosa* and other flowers. *cybele* has often been confounded with *aphrodite*, indeed northern specimens are not much larger, with the under surface, especially of the ♀♀, generally very dusky brown, whereas those from Virginia are very large, with heavy black markings above and the under surface of the hindwings reddish-brown. In the West (Nebraska) its colour is brighter, more red, the under side very light, near to cinnamon-red. — As *A. carpenteri* Edw. we find described a dwarf variety of *cybele* first discovered by Lieut. W. L. CARPENTER on Taos *carpenteri*. Peak in northern New Mexico, above the limits of tree-growth, at an altitude of about 9500 ft. It is very similar to small-sized specimens found on the North-East coast, in Maine and Nova Scotia, but differs considerably from western specimens, as f. i. those from Nebraska. Since *cybele* has not been observed either elsewhere in New Mexico or in Colorado, it seems as though this really northern species forms an isolated colony in this remote south-western part of the Rockies. In the East, from New York to Virginia, *cybele* is confined to the plains, being replaced at higher altitudes by *aphrodite*. That this tribe which is isolated on Mt. Taos does not descend to a lower altitude in order to migrate farther North, is to be explained either by the difference of the climate or the absence of the food-plant; one may assume that at the time when a change took place in the climate, *carpenteri* was cut off from the main body, very much like *Oeneis semida* which, as GROTE and SCUDDER have shown, were in the East stranded on the summit of Mt. Washington in New Hampshire, where it still exists as an isolated colony, the species being otherwise at home in Labrador and in the Rocky Mts. — *bartschi* Reiff is an interesting aberrative form of *cybele* having all the spots and other markings *bartschi*. both of the upper and lower surface confluent so as to form more or less complete bands, all of which, however, aside from the somewhat paler shade of the upper surface, retain their normal colour. This change has mainly affected the distal half of both wings. Here we find at the same time all the veins aborted, in part even completely absent, whereas in the inner half, especially of the hindwing, where the markings are more normal, also the veins are complete and normal (peroneuric aberration). Hand in hand with this reduction of the veins we observe a modification of the shape of the wings, the forewings being much narrower, the hindwings more elongate, and oval than in normal specimens. On the under surface of the hindwings the submarginal band is, in contradistinction to typical *cybele*, very narrow and faded. This aberration has been repeatedly taken in recent years near Roxbury in the State of Massachusetts, where it does not seem to be very scarce. — *baal* Newcomb is the name given to a melanotic form of the ♀. *baal*.

A. aphrodite F. (= *daphnis* Mart., *cypris* Edw.) (85 d) is, like *alcestis*, *cypris* and *halcyone*, by some *aphrodite*. authors treated as a form of *cybele*; but it is considerably smaller, and easy to distinguish by having the yellow submarginal band on the under surface of the hindwing much narrower, frequently, especially in ♂, even wholly wanting, being replaced by the brown ground-colour. The ♂ is, in comparison with other species of this group, much smaller in proportion than the ♀; its ground-colour is brighter reddish fulvous than in *cybele*, obscured with much less brown at the base of the wings; the markings more delicate; the median band is formed of small crescents, separated by wide spaces and nearly obsolete on the costal margin. Underneath the forewing has the base and inner margin brighter red; the silvery marginal and apical spots are very decided, while in *cybele* they are usually wanting or indicated by a few scales only. Basal area of hindwing mostly brown, the yellow submarginal band more or less encroached upon by the dark ground-colour. ♀

paler than ♂, the basal half suffused with a richer red than in *cybele*. Under surface of hindwings deep ferruginous, the band being almost entirely crowded out. Expanse: ♂ 2.0—2.2", ♀ 2.6". — Egg, larva and pupa closely resemble those of *cybele*. The mature caterpillar has, however, a velvety-black spot at the base of each spine, making 6 longitudinal macular velvety bands. The chrysalis has the tubercles on the back shorter than in *cybele*, the basal segments party-coloured, not unicolorous as in that species. The pupal state lasts 17—27 days. *aphrodite* is common throughout the less elevated parts of Eastern Canada (Quebeck, Ontario, Nova Scotia) and of the Eastern United States, from Maine southward to Pennsylvania, and in the Alleghanies to West Virginia. In the West it is met with as far as Illinois. Very common in the Catskills (State of New York) up to an altitude of about 2000 ft., where it takes the place of *cybele*; flying with *A. atlantis* at the end of June and in July in open woods and on forest-meadows, and easily recognizable, especially in bright sunshine, by the bright red tints. Like *cybele*, it has in the South two broods, in the northern States and Canada only one. It is not found in the White Mountains of New Hampshire, being replaced there by *A. atlantis*.

cipris.

A. cipris Edw. (87 a) is a western, rather variable representative of the *aphrodite* group which it resembles in many respects. But aside from the larger size, the forewings are relatively longer and narrower than in *aphrodite*; the black markings of the upper surface in both sexes finer, the dusky clouding at the base of the wings less pronounced, and the general colouring brighter fulvous. On the under surface the forewing lacks in the ♂ the deep pinkish tinge of the base and inner margin, which distinguishes *aphrodite*. Both sexes have the inner $\frac{2}{3}$ of the hindwings deep cinnamon-brown, distally defined by a very narrow submarginal band of buff, deeply invaded proximally by rays of the dark ground-colour. Expanse: 2.8—3.2. Colorado, Utah, New Mexico; also Montana (Judith Mountain), Alberta and Assiniboia. Flies in Colorado from the end of June to the end of August. The life-history is not known.

alcestis.

A. alcestis Edw. (87 a) is regarded by some authors as a western variety of *aphrodite*, from which it may be most easily distinguished by the uniformly dark cinnamon-brown ground-colour of the under surface of the hindwings, reaching from base to termen, only interrupted by the silvery spots; the narrow buff submarginal band found in *aphrodite* is entirely wanting, or occasionally faintly indicated by a narrow streak of a paler subcolour. Spots large and well silvered. ♀ above darker, more red and much more obscured at base than ♂; marginal lines broad, on the forewing partially confluent; submarginal spots heavy, as all other markings. Under surface of forewings fiery-red; apical area of forewings as well as the hindwings uniformly and deeply olive-brown or red-brown, very much as in ♂. All the spots large and, like the costa at the base and the inner margin, brightly silvered. Expanse: ♂ 2.2—2.55", ♀ up to 3.0". — Egg conoidal, with about 18 vertical ribs, very much like that of *aphrodite*. The larva takes 25—30 days to hatch and generally goes at once into lethargy; full-grown it is velvety-black, with concolorous spines that are yellow at the base. Head black, yellowish behind. Feeds on violets and the wild pansy (*V. tricolor*). The pupa resembles in shape that of *aphrodite*, but is more slender, reddish-brown or grey, irregularly mottled and striped with black; abdominal segments slaty-grey, marked with black at the edges, which are provided with short, sharply angular points. Pupal state lasts 20 days. The range of *alcestis* comprises the middle West as far as the Rocky Mountains; in the prairies of northwestern Ohio and southern Michigan it begins to replace *aphrodite* which has here its westerly limits, extending to Colorado, Nebraska and Montana. It seems to be rather local and confined to a pretty narrow belt of Latitude, since specimens taken only a few miles farther north, in a timbered region, belong almost without exception to *aphrodite* (WORTHINGTON). Flies from the end of June till the end of August.

nausicaa.

A. nausicaa Edw. (86 a) is likewise closely allied to *aphrodite*, which it replaces in Arizona. From its near allies *aphrodite*, *alcestis*, *cipris* and from the likewise similar *halcyone* it is, aside from the darker ground-colour, easy to distinguish by the much shorter and less prominent tuft of hair above the subcostal nervule in the hindwing of the ♂, which in the other mentioned species is very plain. It is rather smaller in size than *alcestis* or *cipris*, about like *aphrodite*. Upper surface dusky reddish-brown, the submarginal lunules separated, the mesial band on the hindwings not continuous, but broken into separate spots. Under surface of the forewings pinkish-brown, the apex yellowish; submarginal spots lanceolate, the lower ones black, those next to the apex brown, the upper 6, as well as the subapical patches imperfectly silvered. Hindwings beneath cinnamon-brown, mottled with buff in the inner half; submarginal band buff, occasionally thinly scaled with brown, narrow, but pretty clearly defined; the bright silvery spots small, but very distinct; the basal part of the costal margin likewise silvered. ♀ approaching in size the ♂, but with the black markings broader and heavier; the submarginal lunules enclosing on the forewing pale fulvous, sometimes almost white spots. Under surface of the forewings deeper red, the yellow apical area extending farther inwards, covering the outer corner of the cell; the silverspots larger. Expanse: 2.25—2.5". *nausicaa* is quite common in the mountain valleys of Arizona, at an altitude of from 6000—7300 ft., particularly in July and August. Originally it was

described from specimens taken at Rocky Cañon. HULST, who later on collected a larger number in Maple Gulch, about 12 miles to the South of Prescott, Arizona, writes about it: "The ♂♂ appear in the beginning of July, the ♀♀ not until the middle of the month. The whole country is indescribably wild and rough; everywhere deep ravines, the sides often rising 1000 ft. perpendicularly. On the border of the brooks streaming through the cañon there grow large quantities of a white blossoming species of violet, very similar to the eastern *Viola canadensis*, near which one may be certain to find *A. nausicaa*, but only at the very bottom of the cañon and always on the north side of the brooks. Sometimes they would alight on the blossoms of *Asclepias tuberosa*, others would sip the moisture from some damp spot warmed by the rays of the sun, becoming an easy prey. But to capture any on the wing, was almost impossible, in that path- and trackless wilderness covered with thornbushes". We have no knowledge of the earlier stages.

A. atlantis Edw. (85 e) replaces in the northern Atlantic states of North America *A. aphrodite* with *atlantis*, which it associates in Central New York and New Jersey, the southern limit of its range of distribution. It is smaller than *aphrodite* and *cybele*, and may be distinguished from them by the relatively longer and narrower forewings, the moderately arched costal margin, the deeper brown colour of the upper surface, especially at the base of both wings, and of the under surface of the hindwings. Both sexes have the parallel marginal black lines broad and very distinct, and, especially on the forewings from apex to lower median, confluent. ♂ has on both wings the terminal spots frequently confluent, and joined to the inner marginal line. The spots in the discal row on the hindwings narrow, united with one another to form a sort of thin, angled band. Underside of forewings reddish, of the hindwings darker reddish-brown than in *aphrodite*, the inner $\frac{2}{3}$ plainly clouded with greenish- or brown-grey. The submarginal band between the two outer rows of spots pale yellow, holding in extent the middle between *aphrodite* and *cybele*, but mostly sharply defined. All the spots large and strongly silvered, likewise the basal part of the costa and the abdominal margin. ♀ more yellowish, broadly bordered with black. Expanse: ♂ 1,8—2,25", ♀ 2,2—2,8". — Egg conoidal, with 12—14 vertical ribs, honey-yellow; the caterpillars are hatched in fall, hibernating without feeding. When mature, the larva is above velvety blackish-violet, underneath somewhat paler; the spines arranged in 6 rows, black with grey base. Pupa pale brown, mottled with black, the abdominal segments excepted. The range of *atlantis* coincides in the South with that of *aphrodite* and *cybele*, but extends much farther to the North, through Maine to Newfoundland, Labrador and Hudson Bay, in the West to Winnipeg and the Rockies. MEAD also mentions Colorado, but specimens from thence are described as a separate species *electa* Edw. In the North it is much smaller than in New York and New Jersey. It is rather an alpine species, comparatively scarce in the open country where *aphrodite* is most common. It is particularly abundant in the White Mountains of New Hampshire, where *aphrodite* does not occur at all, at the end of July and in the beginning of August. In Central New York, in the Adirondacks and Catskills, it appears as early as the middle of June, rather earlier than *aphrodite*; common on wooded meadows. Going south, it is found in the mountainous part of Western Pennsylvania and in the Alleghanies as far as West Virginia.

A. lais Edw. (86 b) is closely allied to *atlantis*, but of smaller size and paler colour. ♂ above bright *lais*, reddish-brown, slightly obscured by fuscous at the base; the black markings uncommonly faint; the discal band on both wings broken up into irregular spots and streaks. Under surface of forewings light cinnamon-red, grey-yellowish at the apex, and pale red at base and inner margin, lighter toward the inner angle. The upper submarginal as well as the subapical spots silvered. Under surface of hindwings from base to beyond the second, discal row of silvery spots dark brown, mottled with yellow. Submarginal band pale yellow, moderately broad; all the spots small and well silvered. ♀ somewhat paler than ♂, with base more obscured, all the markings heavier, on the hindwings the marginal lines more or less confluent; the mesial band on the forewings broad and continuous; the areas enclosed between the sagittate submarginal spots and the terminal lines in the ♂ paler, almost whitish. Expanse: ♂ 2,0", ♀ 2,2". The earlier stages are not known. — *lais* was first described from specimens captured by Capt. G. GEDDES in the beginning of July 1883 near Edmonton on the prairies of the Saskatchewan River in northern Alberta; mentioned also from the mountains and the lower hills of eastern British Columbia. But while in these localities it seems rather scarce, its centre of distribution lies, according to THOS. A. BEAN, much farther East; for he found it rather abundant near Mc. Lean in eastern Assiniboia, about 500 miles to the East of GEDDES' locality.

A. oweni Edw. (87 a). ♂ upper surface dull reddish-fulvous, very slightly obscured at the base; the black *oweni*, markings moderately heavy, the two terminal lines more or less confluent. Under surface of the forewings brownish-yellow from the base to the outer row of spots, sometimes suffused with reddish. Veins reddish-brown. Subapical spots deep brown, enclosing a small, silvered spot; the anterior 5 submarginal spots small and very faintly silvered. The hindwings have the discal and basal areas dark brown, strongly clouded with

yellowish, the termen brown; a rather narrow, greyish-buff submarginal band, strongly invaded by rays of the dark ground-colour. The spots of the outer row generally well silvered, those at the base and termen less distinct. The ♀ has the distal half more or less clouded with yellow above, the black markings very heavy and conspicuous; underneath the spots richly silvered. From *A. behrensi*, likewise of California, *oweni* differs in the much heavier black markings of the ♂, and in that the under surface of the hindwings in both sexes is mottled with yellow at the base, whereas in *beherensi* it is uniformly dark brown. Expanse: 2,25—2,4". *oweni* is pretty common on Mount Shasta in California, at elevations of from 7000—8300 ft. Nothing is known of the earlier stages.

cornelia.

A. cornelia Edw. (87 b). ♂. Upper surface of both wings from base to the median row of spots dark brown, only the far end of the cell of the forewing and the distal area of both wings reddish-fulvous. The dark markings rather feeble, the terminal lines fine, confluent on the veins. Under surface: Forewings from base to the clear yellow submarginal band almost uniformly reddish-brown, only the discal area faintly laved with yellowish. The silvery spots small, but well silvered. ♀ above duller red-brown, with the dark markings heavier, especially in the discal area. The terminal spots on the forewing pale brownish-yellow, the terminal lines confluent towards the apex. Beneath like the ♂, but with the basal area darker and the spots more brilliantly silvered. Expanse: ♂ 2,3", ♀ 2,5". Nothing has been published on the life-history of *cornelia*. It flies together with *A. electa* and *hesperis* in Colorado. The types came from Manitou and Ouray.

electa.

A. electa Edw. (87 b) is found in the mountains of Colorado, spreading northward to Montana, in the South to New Mexico. MEAD and others treated it as a variety of *A. atlantis*, from which it may be distinguished, aside from its smaller size, but the relatively broad forewings and much weaker black markings. ♂ above dull reddish-fulvous; the markings on the forewing moderately heavy, on the hindwing narrow. On the forewings the marginal lines separate, enclosing a narrow band of pale brown spots. The base of both wings slightly obscured. Under surface: Forewings pale cinnamon-brown, with the apex darker. Hindwing broadly deep cinnamon-brown, slightly clouded with yellow in the discal area; submarginal band brownish-yellow, frequently invaded proximally by the dark ground-colour. The silvery spots are mostly very well marked and distinct, only occasionally more or less obscured or quite obsolete (transition to *hesperis*). ♀ very much like ♂, differing only in the somewhat heavier markings. The early stages are unknown. MEAD has observed that freshly captured specimens of *electa* have a strong odour of musk. Its range comprises the mountains of New Mexico, Colorado and Montana.

columbia.

A. columbia H. Edw. (86 b). Closely related to *electa*, but of much larger size. ♂ above pale reddish-fulvous, the spots of the median band on both wings rather large, but distinctly separated. The parallel marginal lines, especially on the forewing, are, in contradistinction to *electa*, united into a solid border, between which and the sagittate marginal spots a series of very pale spots. Under surface of the hindwings light ferruginous, slightly mottled with buff on the disk and at the base. The submarginal band narrow, buff, sometimes almost wholly obscured by the darker ground-colour. The spots small, but brightly silvered. ♀ easily distinguished from ♂ and from *electa* ♀ by the much lighter colouring of the upper surface, from the former also by the heavier dark markings. The spots of the median band angled, partly lanceolate, those of the outer, terminal row almost white. Expanse: 2,25—2,5". Originally described from 4 ♂♂ from Labache Lake in the Caribou District of northern British Colombia; types in HOLLAND's collection.

hesperis.

A. hesperis Edw. (87 a, b) resembles *A. atlantis*, with the forewings in both sexes elongate, rather narrow and moderately arched; the sexes approaching one another in size. ♂ above deep fulvous, shaded with fuscous for a short distance from the base. The black spots of the median band heavy, more or less confluent, the nervules being heavily sealed with black. Under surface of the forewings pale ferruginous, the apex buff, like the termen shaded with dark red-brown. Hindwings underneath pretty uniformly deep ferruginous; the submarginal band narrow, mostly clear buff, but sometimes almost lost in the dark ground-colour, as in *aphrodite*. ♀ above paler than ♂, with the dark markings heavier; the marginal lines confluent towards the apex, and joining the rather heavy sagittate spots of the submarginal row, which are also connected with one another, completely surrounding the often nearly whitish marginal spots. Underneath the ♀ differs from the ♂ in the deeper and richer colouring. In neither sex are the light spots silvered, but dull yellowish-white, only occasionally sprinkled with a few scales of silver. Expanse: ♂♀ 2,3—2,4". Although this species is rather common in the mountains of Colorado, Utah and Montana, nothing is known of its life-history.

A. hippolyta *Edw.* (86 c) is a small-sized form from northern California and Oregon, regarded by STRECKER as identical with *bremneri*, which it represents in the South. Upper surface of the ♂ pale fulvous, with the markings heavy, the basal tracts of both wings strongly obscured, this dark clouding reaching on the hindwing almost the inner angle. The forewings on the underside buff, laved with pale red at the base, the termen and apical area ochreous-brown. The subapical and (in a lesser degree) also the submarginal spots silvered. Hindwings deep ferruginous, mottled with buff; submarginal band narrow, light buff, more or less densely dusted with brown. All the spots brightly silvered. ♀ easily distinguished from ♂ by the bright reddish-fulvous tinge of the basal area, and by having the submarginal band on the hindwings almost wholly lost in the deep basal ground-colour. Expanse: ♂ 1,6, ♀ 2,0—2,2". Widely distributed through northern California and Oregon. With the earlier stages we are not acquainted. *hippolyta*.

A. bremneri *Edw.* (86 c) is closely allied to the two following species of the Pacific Coast of North America: viz. *A. zerene* and *monticola*, from which it is not always easy to distinguish with certainty. Forewings long, narrow. ♂ above bright fulvous, occasionally with a yellowish tinge; the black markings, especially of the discal area, very heavy. Both wings have the base broadly obscured; on the hindwings the median band confluent. The under surface of the forewings reddish-fulvous towards the base, sometimes cinnamon-red from the base along the inner margin up to median vein; the anterior part of the termen and the outer costal margin greyish-yellow, the subapical and anterior marginal spots generally well silvered. Hindwings with the inner two thirds deep ferruginous, slightly mottled with yellowish. The space between the two outer rows of very brightly silvered spots usually buff, sometimes clear yellow, very rarely invaded near the anal angle by the dark ground-colour. Costal margin near the base, and the abdominal margin slightly silvered. ♀ above paler than ♂, the marginal lines and crescents on the forewings confluent, forming a broad black band enclosing a few insignificant spots of paler colour. Otherwise marked like the ♂. Under surface of forewings deeper red than in ♂, the apex ochreous, with distinct silver spots. Hindwing as in ♂, somewhat more mottled with greenish-ochreous. All the spots large, well silvered. Expanse: ♂ up to 2,4, ♀ 2,8". The early stages have not as yet been described. The species was first described from specimens brought by Dr. BREMNER from San Juan Island (to the South of Vancouver), which he visited in 1871 on the British ship "Zealous". EDWARDS, who later on also collected on Vancouver, captured at the end of June about 60 specimens, flying on blossoming cloverfields near Victoria and Esquimalt; by far the greater majority of these were ♂♂, and it is probable that, as in other *Argynnis*, the ♀♀ appear rather later than the ♂♂. They were not at all shy, and on account of their slow and awkward flight easily captured. In 1873 CROUCH observed great numbers of this species on the Fraser River and on the border of Labache Lake, flying together with another *Argynnis* which he took to be a form of *aphrodite*, but which more likely was *cipris*. *bremneri* inhabits southern British Colombia and Vancouver Island, advancing south as far as Washington and northern Oregon. *bremneri*.

A. zerene *Bsd.* (= *hydaspe* *Bsd.*) (86 b) is, like the following *A. monticola*, a rather variable species confined to northern California and the neighbouring States in the East and North; it is smaller than *monticola*. ♂ above deep reddish-fulvous, with heavy black markings, the basal area moderately obscured. The black marginal lunules very distinct, connected on the forewing, separated on the hindwing; median band confluent; also the other markings as in *monticola*, but not so conspicuous. Under side of forewings reddish, often suffused with rosy-pink, the apex buff, enclosing a patch of ferruginous. Marginal spots not silvered, but buff, suffused by the ground-colour at the inner angle. The hindwings have the ground-colour purplish-grey, mottled with ferruginous in the basal and discal areas and on the termen; submarginal band yellowish, much encroached upon by rays projected from the dark border. The spots are almost without any silver, of a delicate greyish-buff colour. The ♀ differs but little from ♂ in having the basal half of the forewings more obscured and deeper red, especially on the under surface, strongly contrasting with the yellow tint of the apex. The spots on the under surface of the hindwings are as a rule well silvered, but only in the outer row, whereas the rest do not differ from those of the ♂, in contradistinction to *monticola* ♀ which has all the spots, also on the forewing, silvered. Expanse: ♂ 2,2—2,3", ♀ 2,4—2,5". Nothing is known of the early stages. *zerene* is found in northern California (Plumas Co., on Mt. Shasta), Nevada and Oregon; whereas *monticola* prefers the higher mountains, *zerene* is found mainly in the lower valleys; it visits flowers and is rather common. — As *irene* *Bsd.* (= *irene* *Strecker*), and *hydaspe* *Bsd.* two forms were described, likewise from California, resembling *zerene* so much that they may be regarded as identical or, according to STRECKER, as varieties of that variable species. — Also *adiaste* *Edw.* is closely related to *zerene*, differing only in the somewhat paler ground-colour and the finer, less distinct markings especially of the under surface of the hindwings. Its home is, like that of *zerene*, California. *irene*, *hydaspe*, *adiaste*.

A. monticola *Behr* (85 e) is in many respects so closely allied to the preceding that some authors have treated it as an alpine variety of the same, inhabiting the higher mountains of California and the *monticola*.

neighbouring states in the East. Both sexes have the upper surface brighter fulvous than in *zerene*, the black markings standing out more clearly upon the ground; both wings with the basal area less obscured by fuscous, the roundish spots in the outer discal area uncommonly large, with the exception of the fourth on the forewing and the upper four on the hindwing, which are relatively very small. Otherwise the upper surface as in *zerene*. On both wings a double terminal line, the enclosed space brownish-yellow, separated by the veins; the submarginal lunules connected with one another and with the inner marginal line. The median spots on the hindwing united to form a broad, angled band. But notwithstanding their similarity, the markings are much more characteristic, sharper and clearer. Under surface of the forewings pale ferruginous, laved with reddish towards the base and along the inner margin; the apex purplish-grey, the end of the cell mottled with yellowish. Hindwings purplish-grey, mottled with dark brown; termen dark-brown; submarginal band pale, much encroached upon by dark shadows projected from the ground-colour on either side. All the spots light buff, mostly without silver, only rarely marked with a few silvery scales. ♀ somewhat paler than ♂, the black markings heavier, the spots enclosed between marginal lines and lunules paler than the ground. Under surface of the forewings bright red at the base, the upper subapical spots of the forewings and the outer row on the hindwings always, the other spots on the hindwings occasionally, well silvered. Expanse: ♂ 2,6'', ♀ 2,8''. Common in the Yosemite Valley and other mountain localities of northern California, Oregon, Utah and Nevada. — **A. purpurascens** H. Edw. is distinguished from typical *monticola* by the intense purplish lustre of the entire hindwings and the apex of the forewings. Rather common in the neighbourhood of Soda Springs in northern California.

rhodope. **A. rhodope** Edw. (87 c) may be regarded as the northern representative of the preceding species. ♂ above fiery fulvous, both wings having the inner half heavily obscured with brown; the black markings very heavy and confluent, particularly the median band on the hindwings. The outer border broadly black, slightly interrupted by a fine pale brown middle line, as in *atlantis*. Under surface of the forewings deep ferruginous, the subcostal and discal areas and a part of the cell dull buff; Between the spots at the end of the cell and the apex several bright straw-yellow spots; the upper spots of the marginal as well as the apical series generally well silvered. Hindwing deep reddish-brown from base to distal margin, somewhat paler on the line of the usual submarginal band between the two outer rows of spots. The spots of the marginal row nearly always brightly silvered, the others mostly pale straw-coloured, only rarely sprinkled with a few silvery scales. ♀ above of a lighter and brighter red than ♂, with the submarginal fulvous spots paler than the ground, and the markings heavy and broad, as in ♂. The under surface does not differ from that of the ♂, except that the forewings have the inner half deep cinnamon-red; the spots as in the ♂. Expanse: ♂ 2,2'', ♀ 2,4''. Originally described from 3 ♂♂ 1 ♀ captured by CROTCH in 1873 on the Fraser River in British Columbia, on the road from Bates Village to Beaver Lake; later MORRISON collected a series near Mount Hood in the State of Washington (ELWES) and on Vancouver.

sakuntala. **A. sakuntala** Skinner is closely allied to the preceding species as well as to *monticola*; but the markings of the ♂ are not so intensely black as in *rhodope*, and the fulvous colour is less brilliant. Underneath the forewings resemble those of *rhodope*, but are likewise duller and paler. On the hindwing the submarginal band very distinct, buff, not obscured by the dark brown ground-colour as in *rhodope*. The 7 spots of the second (submarginal) row larger, and marked only inwardly with black, whereas in *rhodope* they are completely surrounded by black. The outer submarginal lunules not silvered. Basal area brick-red, instead of reddish-brown. ♀ like the ♂, but paler, with the submarginal lunules on the under surface of the hindwings silvered. Described from 4 ♂♂ 1 ♀ from Ainsworth (British Columbia) and Keslo. Types in the collection of the Academy for Natural Science in Philadelphia. GORDON HEWITT has also captured it in the Canadian province of Alberta. Whether and in what way *sakuntala* is related with *rhodope*, or whether it is a species of its own, cannot be decided at present from the available material.

behrensi. **A. behrensi** Edw. (86 c). Forewing narrow, moderately arched. ♂ above dull fulvous, with heavily obscured base and feeble markings of dull black. Forewings bordered by two very fine marginal lines enclosing a series of quite small fulvous spaces separated by the nervules. The submarginal lunules as well as post-discal spots reduced; otherwise marked like *A. hesperis*. On the hindwings the submarginal lunules large, not touching each other, but the postdiscal row of rounded spots feebly developed, and the median spots united to form an uncommonly fine, angled band, much as in *hesperis*. Under surface: Forewings pale fulvous or buff, the basal area and veins ferruginous, apex and termen dark brown. The subapical and upper marginal spots well silvered. Hindwings dark reddish-brown throughout, much as in *aphrodite*, the submarginal band between the outer rows of spots faintly indicated by a narrow streak of pale violet-brown. All the spots distinctly and brightly, the costal margin near the base, and the abdominal margin but feebly silvered. The ♀ does not differ materially from the ♂, except in the somewhat larger size and paler colour of the

upper surface; the marginal lines on the forewings are broadly confluent, leaving no pale space between, and the submarginal lunules as well as the other dark markings somewhat heavier. Underneath exactly as the ♂, the submarginal band, if anything, even less distinct. Expanse: ♂ 2,2'', ♀ 2,4''. The early stages have not been studied. The types came from Mendocino in California.

A. halcyone Edw. (87 c). Forewings produced and narrower than in the preceding species. ♂ above *halcyone*. fulvous, inclining to yellowish, very slightly obscured at base, the black markings sharp and distinct; marginal lines separate, leaving a narrow fulvous space. The median spots on the hindwings confluent so as to form a continuous band. Otherwise the markings of the upper surface correspond to those of the allied species, holding about the middle between *hesperis* and *monticola*. Under surface of the forewings pale reddish-yellow, obscured at the base, pale buff at the end of the cell and on the costal margin before the apex. The subapical and upper marginal spots pale, generally very little silvered. The hindwings have the inner two thirds deep red-brown, clouded with buff. Outer margin likewise dark brown, paler at the anal angle. Submarginal band buff, somewhat invaded by the basal shade. All the spots well silvered, as also the costa near base and the abdominal margin. ♀ considerably larger than ♂, with the black markings heavier. On the under surface of the forewings the base and inner margin suffused with red. On the hindwings the marginal band less distinct than in ♂, sometimes shaded with olive-brown. Silver spots large. Expanse: ♂ 2,5—2,6'', ♀ 3—3,3''. Early stages not known. *halcyone* has been regarded by some authors as a variety of *aphrodite*; it was first described from 2 ♂♂ captured by Dr. VELIE in Colorado; the ♀♀ were discovered very much later by MORRISON in southern Colorado. The species is also mentioned from the adjoining districts of the State of Utah, but has always been rare in collections. — **A. arizonensis** is the name of a southern form from Arizona, distinguished *arizonensis*. from the Colorado form by the much smaller silvery spots on the underside of the hindwings in both sexes, and the shorter subcostal tuft of hair in the ♂.

A. platina Skinner (86 c) takes in eastern Utah the place of the closely allied *A. coronis*; of which it *platina*. is possibly only a variety. ♂ above rather pale buff to brown-yellow; the black markings heavy in the slightly obscured basal half, in the distal half, however, relatively narrow and thin; especially the marginal lines very fine, and the roundish postdiscal spots feebly developed. Under surface of the forewings rosy pink in the inner half, otherwise as in *coronis*, the subapical and upper marginal spots distinctly silvered. On the hindwings the spots large, very brightly silvered, strongly contrasting with the greenish-grey ground. Between the two outer macular rows a rather broad, pale buff submarginal band standing out clearly from the ground-colour. ♀ characterized by the reddish-brown colour of the under surface of the hindwings. Found in Idaho and Utah.

A. chitone Edw. (87 c), from California and the adjacent States, has in both sexes the upper surface *chitone*. duff fulvous, obscured by brown at the base, with moderately heavy black markings. Under surface of the forewings from base to outer half pale yellowish-fulvous, the apical area and the nervules shaded with deep ferruginous. Marginal spots buff, without any silver. Under surface: Hindwings of the ♂ pale ochreous-brown, clouded with buff; submarginal band broad, clear buff; outer margin brown. All the spots small and imperfectly silvered. ♀ very much like the ♂, but always with the outer row of spots well silvered, the others only exceptionally with a few silvery scales. Expanse: 2,25—2,5''. California, Arizona, Nevada and Utah.

A. coronis Behr (♀ = *nevadensis* Edw.) (85 c, 86 a). The ♂ on the upper surface yellowish or reddish-*coronis*. brown, the base slightly obscured with fuscous. The dark markings, especially in the distal half, not heavy, but very distinct. Mesial band rather heavy on forewing, light on hindwing. Under surface of the forewings buff, varying to rufous, with the basal area and median nervules orange fulvous. Subapical and submarginal spots more or less perfectly silvered. Hindwings brown from base to outer third, mottled with reddish, in the discal area with buff; submarginal band narrow, clearly defined, pale yellowish-buff. All the spots large, egg-shaped and, like the costal margin at the base and the abdominal margin, well silvered. ♀ somewhat paler than ♂, with the markings heavier, and the basal area more broadly obscured; the marginal lines confluent on the forewings, the spots enclosed by the submarginal lunules nearly white. Under surface very much as in ♂, only more brownish on the inner half of the hindwings. The colour of the under surface is highly subject to variation: Whereas in southern California (near Gilroy) normal specimens are the rule, specimens from Mount Shasta (in the North), from Washington (Judith Mountain, MORRISON coll.) and Alberta (GEDDES) are much lighter, the ♂♂ cinnamon-red, the ♀♀ pale fawn colour. One ♂ from Nevada captured by MORRISON, has the underside decidedly yellow, mottled with pale grey, while another ♂ from Utah (NEUMOEGER) has almost no mottling, but is nearly clear yellow over the whole hindwing and all of the forewing, except just at the base. [The ♂, figured by EDWARDS in Vol. I of his Work on North American Rhopal-

cera as *nevadensis*, is really a form of *coronis* with very pale under surface, taken by him at Virginia City in Nevada. Later, in 1878, after MEAD and MORRISON had brought from Nevada a goodly number both of *coronis* and of the true *nevadensis*, the error was cleared up. *nevadensis* ♀ is always easy to recognize by the green colouring of the under surface. Expanse: ♂ 2,1—2,5'', ♀ 2,5—3''. The range of *coronis* extends from southern California through Oregon and Washington to southern British Colombia, in the East to Utah, Nevada, Montana and Alberta (Crows Nest, GEDDES); but in Colorado it has not been found so far.

snyderi. **A. snyderi** Skinner (86 b) is rather larger than the preceding. ♂ above pale tawny, the basal area slightly obscured by fuscous, the black markings moderately heavy, at the termen indeed very fine, but sharply defined against the light ground-colour. Under surface of forewings with 2 subapical and 5 submarginal spots, all distinctly silvered. On the under surface of the hindwings the greyish-green ground-colour is interrupted by a narrow submarginal band of pale buff; all the spots large and well silvered. ♀ very much like ♂, but on the underside the hindwing has the ground-colour from base to outer third brownish instead of grey-green. Expanse: ♂ 3,0'', ♀ 3,30''. Early stages, like those of the preceding, unknown. Its home is Utah, where it occurs together with *coronis*.

liliana. **A. liliana** H. Edw. (86 c) stands about midway between *A. coronis* and *callippe*. ♂ above fulvous, varying from pale to dark, the black markings rather slight. On the hindwings the median spots united into a fine, continuous band; the light submarginal and discal spots generally paler than the ground-colour. Under surface of forewings pale buff, the basal area and inner margin to below the cell light brown, sometimes redbrown, the median interspaces and the end of the cell yellowish; some specimens have also the veins in the discal area dusted with reddish; before the apex a brown patch with 2—3 silvery spots; also the upper 5 submarginal spots heavily silvered. Hindwings brown, but little mottled with buff; submarginal band narrow, brown-ochreous; the spots large and well silvered. ♀ much paler than ♂, with the marginal spots on both wings very pale. Under surface very much like that of ♂, the basal area and the nervules of the forewing more red. Expanse: ♂ 2,2'', ♀ 2,4''. Egg yellow; conoidal, at top truncated and somewhat depressed, the height not exceeding the diameter of the base; with 22—23 vertical ribs which are as in other species of the genus. From eggs that were laid in the first half of July, the larvae emerged in 13 days, going at once into lethargy (EDWARDS); but nothing is known of their further development. — ab. **baroni** Edw. refers to an aberrative form deviating from typical specimens in the abnormally heavy black markings. The two marginal lines on the upper surface of both wings very heavy; the submarginal lunules united into a broad continuous band. Also the round postdiscal spots are united to a band reaching from Costa to upper median nervule, with 2 black spots below it in the median interspaces. On the under surface the submarginal silver spots on the forewing are united into a solid bar, the corresponding lunules on the hindwings being changed in like manner. The 3 anterior costal spots of the second row confluence into a single large spot. *liliana* is found in northern California (Type from Napa Co.). Specimens from near Los Angeles (GODMAN and H. J. ELWES) greatly resemble *callippe* with which the species generally is found.

laura. **A. laura** Edw. (87 b). ♂ above deep reddish fulvous, with both wings slightly obscured at the base and with heavy black markings; the broad marginal lines enclose a few small spots of the ground-colour. The discal spots on the hindwings are lighter in colour than the ground. On the under surface the forewings are reddish-orange, the apex and inner margin buff; the apical and anterior marginal spots mostly well silvered. ♀ much paler than ♂, otherwise very similar. Expanse: ♂ 2,2'', ♀ 2,4''. *laura* replaces *A. coronis* in Nevada; being possibly only a form of that variable species. Outside of Nevada it is found also in northern California, Oregon and Washington.

macaria. **A. macaria** Edw. (88 a) is closely related to both *coronis* and *laura*, being even of smaller size than the latter. ♂ above brighter fulvous than *coronis*, the black markings very light. The median spots, especially on the hindwings, dissolved into single short thin striae, the discal spots quite insignificant. Both terminal lines exceedingly fine; but the base of both wings heavily obscured with fuscous. Forewings above orange-red, the apex yellowish-buff; the upper submarginal spots slightly silvered. The hindwings have the distal area yellowish, the discal and basal areas mottled with brown, the submarginal band clear buff. All the spots large and heavily silvered. ♀ paler than ♂. On the hindwings the median spots corresponding to the second silvery row underneath much paler than the ground. The black markings even lighter than in ♂. Expanse: ♂ 2,0'', ♀ 2,2''. The life history is not known. A rare species, confined to California and Nevada.

callippe. **A. callippe** Bsd. (85 e). Forewings produced, narrow, moderately arched. ♂ above dull fulvous, with the basal area broadly obscured, both wings at the inner angle, and almost $\frac{2}{3}$ of the hindwings dusted with blackish; all the nervules broadly edged with black; terminal border black, submarginal lunules heavy, connected with one another

and with the terminal border, enclosing on both wings small, triangular, pale marginal dots which, like the almost quadrate light discal patches on the forewings, contrast vividly with the dark ground; this is even more marked in the oval spots on the discal area of the hindwings corresponding to the row of silvery spots underneath, which are paler buff than the rest. Under surface of the forewings yellowish buff, at the base and on the lower nervules dusted with fulvous. Hindwings dark fulvous to the outer third, with the submarginal band clear buff; the spots large and well silvered. ♀ on the whole paler than ♂, the discal area of both wings as well as the median and submarginal spots on the hindwings nearly whitish; the black markings even heavier than in ♂. Also underneath it resembles the ♂, but is slightly paler. *callippe* is easily recognized by the deep obscuration of the basal areas of both wings and by the striking contrast formed by the uncommonly pale colour of the discal and median spots with the dark ground. Expanse: ♂ 2,3", ♀ 3,0". According to Dr. BEHR, *callippe* is very common throughout California, especially in the lower parts of the country. Near San Francisco it is by far the commonest *Argynnis*, flying in June together with the much rarer *liliana* and *semiramis*. About its habits WRIGHT writes from San Bernardino: "*callippe* is found from the sea-coast up to an altitude of about 2500 ft., preferring the dry, deep, sheltered valleys. Its season is rather short, lasting only about 5 weeks, and everything indicates that there is but one brood. The ♂♂ appear about on the 20th of May; they fly restlessly about, only rarely alighting on some flower to sip a little honey. In the beginning of July the ♀♀ appear; these, in contrast/distinction to the ♂♂, fly but little; one sees them generally near and among the dead twigs and branches of the shrubs growing on the steep slopes, in whose scanty shade certain species of violets thrive in spring, the leaves of which die off already in June; they are never seen to grow on the bottom of the valleys, only on the sloping sides; nor do the ♀♀ ever seek out green, fresh-looking plants, but flutter or crawl about between the dried-up leaves and twigs; as soon as a favourable place is found, they push their body as far as possible into the loose rubbish or half-decomposed leaves, depositing one or more eggs, after which they seek another similar place to repeat the same game. The larvae are hatched after about 12 days and go at once in lethargy, in which state they spend the entire summer and following winter until early spring. In spring-time I never succeeded in finding a single caterpillar".

A. juba Bsd. from California is, according to its author, so closely allied to *callippe* that it may be regarded as a local race. Both sexes have the upper surface bright fulvous, but without the blackish tinge characteristic of *callippe* ♂. Underneath it differs very little from that species. EDWARDS, on the other hand, inclines to the belief that it is a form of the highly variable *coronis*, representing a transition to the *callippe* group; LORQUIN again treats it as a separate species. Whichever view is correct, can only be decided by breeding experiments.

A. nevadensis Edw. (86 c, d) stands in the markings of the upper surface and in the form and size of the silvery spots nearest *edwardsii*. ♂ above pale yellow-fulvous, but slightly obscured at base. Termen bordered by 2 rather heavy black parallel lines enclosing a narrow fulvous streak intersected by the nerves, and joining the rather fine, confluent submarginal lunules. The black discal spots reduced, but very distinct, similar to those of *edwardsii*. The median band on the hindwings confluent. Forewings on the under surface pale buff, the basal area suffused with reddish as far as the cellular spots; the apex and posterior submarginal spots greenish olivaceous, the upper submarginal and the subapical spots well silvered. Hindwings greenish, with moderately broad, but sharply defined, submarginal band of dull buff, and strikingly large, very pronounced silver spots. Abdominal margin and the basal portion of the costal margin likewise silvered. ♀ like the ♂, but larger and somewhat lighter; the outer border of the forewings more broadly black, enclosing some insignificant traces of fulvous spots. The light patches enclosed by the submarginal lunules, and the discal spots corresponding to the second silvered row of the hindwings pale buff. The forewings underneath as in the ♂, pale buff, but with the base and inner margin deep fulvous red. Hindwings underneath like those of the ♂, but the green colouring darker and more lustrous, mottled with pale olive, and adorned with large and conspicuous silvery spots. Expanse: ♂ 2,25", ♀ 2,4—2,6". Nothing is known of the earlier stages. *A. nevadensis* is a wide-spread species, being found in the mountainous parts of Utah, Nevada, Wyoming, Montana, Washington and the adjacent parts of British Colombia, but apparently always local. H. EDWARDS was the first who discovered it, near Virginia City in Nevada. "It particularly abounds in the warm ravines (cañons) near Washoe Lake, a lovely mountain-lake 2 miles wide and 7 long, situated 6500 ft. above the level of the sea in the lower mountains, the highest elevation of which is Mt. Davidson, on the slopes of which Virginia City is built. In spring the borders of the lake are covered with the most luxuriant vegetation, in which Compositae, Violaceae and Liliaceae play an important part. Here *A. nevadensis* abounds; but on account of its rapid, restless flight its capture is, like that of most mountain-butterflies of the Rockies, enormously difficult and laborious in that wild and broken country. Just to get to those places, the collector

must often tramp for miles over perfectly arid and, steep hills, where there is neither path nor any trees to afford shelter from the sun; sage-brush everywhere; springs of water are exceedingly scarce, and he may consider himself lucky if during an entire day's climb he finds a few drops of water" (EDWARDS). The species was by Dr. STAUDINGER and MOESCHLER regarded as identical with the European *aglaja*, but the whole appearance, the shape of the wings, the form and arrangement of the silver spots and the colour of the under surface in both sexes differ so much, that they cannot even be classed with the same group (ELWES).

meadii.

A. meadii Edw. (87 c) was by some authors treated as a form of *A. edwardsii*; but the difference between them appears two great and constant; rather one might take it for an extreme, dwarfed variety of *A. nevadensis*. Forewing, in contradistinction to *edwardsii*, but slightly arched, with moderately produced apex. Upper surface rather darker, deeper yellow-fulvous than in *nevadensis*, but little obscured at base, the veins broadly dusted with blackish, and the median band narrow, confluent on the hindwing. Under surface of forewings pale cinnamon-brown at base and along the veins on the disk, the remainder light buff, except the apical area and outer margin which are deep green. The upper submarginal as well as the 3 subapical spots well silvered. Hindwing wholly of a glossy, rather dark golden green, with a strong silky lustre that distinguishes this among all other American *Argynnis*. The submarginal band but faintly indicated by a pale yellow streak between the two outer rows of silvery spots. All the spots as well as the costa at base and the abdominal margin well silvered. ♀, as in the preceding species, very much like the ♂, deviating only in the paler colouring and heavier markings. The sexes are approximately of the same size, about 2,2". The early stages not known. *meadii* is found among the mountains of Colorado (Turkey Creek Jn., June, MEAD), in Utah, Montana (Dr. HAYDEN) and the Canadian province of Alberta.

edwardsii.

A. edwardsii Reak. (= *aglaja* Edw.) (86 d) is, in the same way as *aphrodite* with *cybele* and *atlantis*, closely allied to *nevadensis* and *meadii*, from which it differs above in the brighter ground-colour, the broader obscuration of the basal area, the broader black termen, especially of the ♀♀, and the olive-brown tint of the under surface of the hindwings. On the upper side the ♂ has the submarginal lunules connected with each other and the inner terminal line, enclosing small spots of a paler shade than the ground-colour. On the hindwings the discal spots rather much reduced. Under surface of forewings with the base pale reddish and with similarly tinged nervures; the outer half pale buff, only the apex and inner margin suffused with greenish. Submarginal spots well silvered. Hindwings light olive-brown, mottled with yellowish. The buff submarginal band narrower than in *nevadensis* and *meadii*, strongly invaded by the dark ground-colour. The silverspots distinct. ♀ above even more obscured than ♂, almost resembling callippe which it approaches also in the uncommonly pale colour of the submarginal lunules on both wings and especially of the discal spots of the hindwings. On the forewing the apex rather paler than the ground. Underside as in ♂, but the apex and outer border of the forewings as well as the entire hindwing of a deeper olivaceous tint, on which the yellowish mottling of the ♂ appears as a very faint streak; the submarginal band reduced even more than in ♂, not rarely completely absent or but slightly indicated, much as in *aphrodite*. The spots are large, those of the outer row triangular, thinly edged with black proximally. Expanse: 2,8—3,3". Originally described from specimens captured by RIDINGS in August 1864 in the mountains near Empire City (Colorado). The early stages, described by EDWARDS in Can. Entom. Vol. XX, p. 3, are very similar to those of *A. atlantis*. Outside of Colorado it is also found in Nevada and Utah, but apparently always at higher altitudes than *nevadensis*.

rupestris.

A. rupestris Behr. (87 c). ♂: Upperside of forewings deep fulvous, the obscuration of the basal area almost reaching the mesial band, which latter is, like all other markings, very heavy. Under surface buff, at base and inner margin suffused with reddish; near the apex a slight ferruginous patch; the submarginal lunules brown, darkest posteriorly. Marginal spots pale buff, without any silver. Hindwings likewise dull buff, shaded with cinnamon-brown, varying from pale to dark. Submarginal band buff, at the lower end somewhat invaded by the darker ground-colour. None of the spots silvered, only sometimes sprinkled with a few silvery scales. ♀ above resembles ♂, but the marginal and other markings much heavier, the ground paler, in the discal area rather yellowish; the submarginal spots whitish. Under surface brighter coloured than in ♂. Forewings from base to below the upper median nervule and along the veins on the disk uniformly light red, beyond buff. Hindwings as in ♂, only the spots always more or less silvered. Expanse: ♂ 2,6", ♀ 2,2". Nothing is known about the life-history. *rupestris* is not scarce at higher elevations on Mt. Shasta in California, and on Mt. Bradley and the Weber Mountains in Utah.

semiramis.

A. semiramis Edw. (87 d) combines the characteristics of *A. coronis* (under surface) and *A. adiante* (upper surface); indeed some authors regard it as a southern, prairie-form of the former. ♂ above bright fulvous,

the black markings strongly reduced, as in *adiante*, especially on the hindwings. On the under surface the forewings from base to outer half cinnamon-red, beyond that buff. Apex and termen brown; the upper marginal and 2 subapical spots well silvered. Hindwings rusty-brown from base to the brownish-yellow submarginal band, mottled with lighter brown. All the spots well silvered. ♀ above like ♂, with the dark markings somewhat heavier. Under surface of forewings uniformly reddish as far as the apex, only the upper angle of the cell buff. Hindwing generally fawn-coloured with the submarginal band somewhat lighter; some specimens have the ground-colour much darker, with the band very distinct. The silverspots very prominent. Expanse: ♂ 2,6'', ♀ 2,8—3,0''. *semiramis* is quite common in the neighbourhood of San Bernardino in southern California, especially in the mountains separating the S. Bernardino Valley from the Mohave Desert.

A. inornata Edw. (86 e) resembles in its markings *rupestris*, but is much larger and somewhat paler. *inornata*. Forewings strongly arched, produced apically. ♂ above bright fulvous, much obscured from base to mesial band; the two marginal lines united to a broad band. The black markings moderately heavy, only at the disk rather thin. Under surface of the forewings cinnamon-brown, the apex buff. Hindwings reddish-brown to the second row of spots, the submarginal area clear buff, slightly shaded with the dark ground-colour toward the anal angle. All the spots large, pale yellow, without any silver. ♀ above rather paler than ♂, the basal area deep orange-red, the outer portion, and especially the discal and marginal spots on the hindwings faded to whitish-yellow. Under surface of the forewings orange-red instead of cinnamon-brown. Hindwings pale greenish-brown, mottled with yellowish. The spots very large, but generally not silvered, only in some exceptional cases sprinkled with a few silvery scales. Expanse: ♂ 2,5'', ♀ 2,7''. Originally described from a ♂♀ from Downieville (California), *inornata* is also found in Nevada (Virginia City, EDWARDS), but is rather rare in collections, being extremely shy and, on account of its rapid, restless flight, very difficult to catch. It never alights on flowers, but settles, in order to rest, on the leaves of trees, never for more than a second at a time, very different from *zerene* and *monticola*.

A. atossa Edw. (86 d) closely approaches the following *adiante*. ♂ above bright fulvous, but slightly *atossa*. obscured at the base. The markings all very greatly reduced, almost entirely absent on the hindwings. Outer margin of both wings bordered only by a single fine line, otherwise almost unmarked, only on the forewings we find at the inner angle 3 small spots, being all that is left of the usual submarginal lunules. Under surface of both wings pale buff, suffused with bright red at base and inner margin of forewings; on the hindwings the basal and discal areas very feebly obscured; all markings in cell, at apex and termen obliterated. The spots on the forewing and hindwing without any silver, frequently very faint altogether and hardly recognizable. Expanse: ♂ 2,4'', ♀ 2,8—3,0''. *atossa* is a very rare species, or possibly only an extreme variety of *adiante* Bsd. from southern California. The exact locality where the ♂ type was found, is unknown; but in June 1889 BURRISON captured several ♀♀ near Tchachape, in a little side-valley by the border of a narrow stream, 4 miles from town, at an elevation of about 4200 ft. In June 1905 F. GRINNEL took on Mt. Pinos among a lot of typical *A. eurynome* a specimen of *atossa*, which was by COOLIDGE regarded as an extremely light form of *eurynome*. Since then nothing has been heard of this species.

A. adiante Bsd. (= *adiaste* Behr) (86 d). ♂ above bright fulvous, lightly obscured with fuscous at base, *adiante*. the black markings rather slight, especially on the hindwings where the median band has been reduced to a thin, broken line; the submarginal lunules small, not joining the marginal line; the postdiscal spots on both wings minute. Under surface of the forewings pale fulvous, the apex much lighter, the basal area orange-red. The markings of the outer half almost completely obliterated. Hindwings light buff, shaded with pale fawn-colour proximally. Termen brownish, all the spots without any trace of silver, grey-yellow, finely margined with brown proximally, sometimes hardly visible. ♀ very much like ♂, but with the markings of the upper surface heavier, the basal area as well as the inner half of the forewings beneath tinged with deeper red. *adiante* is a very constant form, which, unlike most of the other Californian *Argynnis*, seems to develop neither variations, aberrations or local races (BEHR). It does not occur on the coast, but only in the interior of southern California (near Los Gatos, near Searsville in Santa Clara Co.); in some years it is rather common, but always local. Its southern limits are not yet known.

A. artonis Edw. (87 d) represents a transition from *adiante* to the *eurynome*-group, being the first *artonsis*. of a group of forms which are all more or less related to *eurynome*, and are by many authors regarded as mere varieties or local races; whether this is just, cannot at present be decided, on account of our scant knowledge of the life-history of these forms. Only of *eurynome* and *egleis* we know the early stages. ♂ easy to distinguish from *eurynome* ♂ by the entire absence of silvery scales on the spots of the under surface, which are, moreover, not so long nor so much produced as in that species. Under surface without the dark

terminal markings. ♀ very much like ♂, but the markings heavier, standing out very distinctly against the dark ground; the marginal spots enclosed by the lunules very light in colour and relatively large. On the underside the forewings are suffused with red, very much as in *adiante* ♀. Expanse: ♂ 1.75—2.0'', ♀ 2.0—2.15''. Its home is Utah, Arizona, Colorado and Montana.

clio. **A. clio** Edw. (87 d) is, after *bischoffi*, one of the most northern representatives of the *eurynome* group. Both sexes have the upper surface more brilliant and deeper fulvous than in *eurynome*, in the ♀ paler than in ♂, with the markings not very heavy and the base moderately obscured. Terminal border fairly broad, especially in ♀, the marginal spots enclosed between it and the submarginal lunules, standing out distinctly from the darker ground-colour. As in *artonis*, the spots on the under surface are entirely devoid of silver. Altogether these two species have so much in common that it is difficult to always distinguish them with any certainty. Expanse: ♂ 1.8'', ♀ 1.8—1.9''. This species or variety is confined to the higher mountains of Montana and Alberta (ELWES, GEDDES).

opis. **A. opis** Edw. (87 e) is the form of British Colombia; its size is considerably less than even that of *clio*; from *eurynome* it differs, aside from its inferior size, in the very pronounced obscuration of the base and abdominal margin on the upper surface in both sexes, and in the heavier markings on a duller ground. With the exception of the species of the *Brenthis* group, it is the smallest of all American *Argynnis*. Forewings short and slightly arched; the lower part of the basal area and the inner margin densely covered with brown hair. In the ♂ the under surface of the forewings is very slightly, if at all, tinted with red at the base, and the submarginal spots are nearly obsolete. Hindwings with discal area pale ochreous, faintly mottled with reddish; submarginal band indistinctly marked by a faint pale streak. All the spots pale, dull ochraceous, not silvered. ♀ deeper fulvous, with both wings heavily obscured from base to median band, and all the markings heavier than in ♂. Underside of forewings tinted with red throughout, except at apex which is ochraceous. Hindwings as in ♂. Expanse: ♂ 1.5'', ♀ 1.6''. The type was captured by G. R. CROUCH in 1873 on Bald Mountain, in the Caribou District of British Columbia.

bischoffi. **A. bischoffi** Edw. (87 d) represents the *eurynome* group in the far North. ♂ above bright fulvous, the base of the forewings and the inner half of the hindwings deeply shaded with purplish-black, so as to conceal the markings. Both wings bordered with moderately heavy terminal lines enclosing a series of small fulvous spots which may be obsolete on the posterior half of the forewing. Otherwise the upper side as in *eurynome*. Underside of forewings buff, with the basal and discal areas reddish. Hindwings pale buff, the inner two thirds shaded with greyish-green. Submarginal band clear buff; the spots on the under surface in the majority of cases simply buff, without any silver, occasionally almost obsolete; in other cases they are fairly well silvered. ♀ above very pale buff, slightly laved with reddish distally. All the markings deep black and heavy. On the forewings the base, on the hindwings more than the inner half deeply obscured with black; both marginal lines united into a broad, solid black band; between this and the submarginal lunules a series of almost white spots. Besides these and a narrow pale streak in the outer discal area of the forewings and at the apical end of the costal margin, and besides the dirty white spots corresponding to the second row beneath, there remains nothing of the pale fulvous ground-colour. Underside very much as in ♂; also here the spots may or may not be silvered, but the silvery generally predominates. Expanse: ♂ 1.8'', ♀ 1.9''. Its home is Alaska; the types were captured near Sitka in the middle of July.

eurynome. **A. eurynome** Edw. (86 e). Forewings slightly arched, feebly produced apically. ♂ above bright yellowish-fulvous, but little obscured at the base. The black markings moderately heavy, the terminal lines frequently confluent so as to form a solid band. Submarginal lunules united, enclosing a series of fulvous spaces of the ground-colour. The rounded postdiscal spots small, the median spots connected by fine lines so as to form a delicate zigzag-band. Underside of forewings pale buff, shaded with cinnamon-brown at base and along the nervules; marginal and subapical spots well silvered. Hindwings yellowish, with the basal and discal areas mottled with light ferruginous or more often with pale olive-green. Submarginal band clear buff; all the spots, the basal portion of the costa, and the inner margin well silvered. ♀ marked very much like the ♂, but paler, with the dark markings, especially those at the margin, heavier. The marginal spots enclosed by the black lunules much paler than the ground-colour, occasionally almost white. The second row of silvered spots beneath is indicated above by a faint pale discal streak. Under surface as in ♂, but the forewings more heavily obscured with deep cinnamon-brown at the base. Expanse: ♂ 1.7—2.0'', ♀ 2.0''. — The egg resembles that of other known species, with 20 strong verticals ribs, intersected by shorter horizontal ribs, and marked with numerous horizontal striae. Colour at first honey-yellow, later on turning into purple. Neither the larva nor pupa are known. *eurynome* abounds in the mountains of Colorado, Montana, British Columbia and Alberta, where according to MEAD it flies on grassy fields along the streams. In Colorado it appears in the first half of June; in Utah, Arizona and New-Mexico it has not been observed so far. — **A. arge** Strecker, from California and Washington, is probably a variety of *eurynome*, connecting this with *montivaga*, but slightly different from *erinna*, or perhaps identical with **A. erinna** Edw. (86 e) which replaces the latter in the North, in Alberta and British Co-

lombia. Both combine more or less the characteristics of *eurynome* and *montivaga*, which explains that EDWARDS described in 1883 *A. erinna* as a variety of *eurynome*, but in the year following classed it in his Catalogue with *montivaga*.

A. montivaga Behr (87 e) was, together with *egleis*, regarded by STRECKER as a variety of *A. zerene montivaga* Bsd., whereas other authors, probably with better reason, treat it as a possible subspecies of *A. eurynome*, which it closely approaches in either sex, differing chiefly in the somewhat darker red of the upper surface, the rather heavier markings, and the absence on the underside, especially of the hindwings, of the olive-green tinge which is characteristic of typical *eurynome*, this being replaced by a mottling of reddish-brown. All the spots more or less perfectly silvered. Expanse: ♂ 1.8", ♀ 1.9". Found in the Sierra Nevada of California and among the higher mountains of Nevada (MORRISON).

A. egleis Bsd. (♀ = *mormonia* Bsd., *nenquis* Reak.) (86 e). Forewings relatively somewhat longer *egleis* than in *eurynome*. ♂ above deep fulvous, a little obscured at base, with moderately heavy black markings on both wings and the mesial band on the hindwings continuous. Under surface of forewings pale fulvous, with the apex yellowish buff; base and inner margin as far as the median vein, as well as the median nervules tinged with reddish, the base not seldom quite red. Submarginal and apical spots may or may not be silvered. Hindwings brown as far as the outer third, sometimes mottled with purple; submarginal band brownish-yellow. The spots on the under surface either partly silvered, or pale buff without any silver. ♀ very much like ♂, but the ground-colour paler, occasionally much obscured over the basal areas. Under surface of the forewings deeper red, the purplish-brown shading of the inner half of the hindwings darker. The silver spots are, as in the ♂, greatly subject to variation; occasionally they are clear yellowish buff, without any trace of silver. Expanse: ♂ 2.2", ♀ 2.5". — EDWARDS succeeded in breeding it from eggs which he had received from Nevada. The egg is yellowish, following the general type. Very soon after leaving the egg, the caterpillars seek their winterquarters, going in lethargy. Full grown they measure about 1.2"; their colour is grey, mottled with brown, marked dorsally with a black stripe edged on either side with a dirty white line; the spines and bristles comparatively short, those on the back dull whitish, the rest yellowish, all with black tips. Feet pale brown, head black in front, yellow behind, covered with black hairs. Pupa very much as in other species; the wing-cases dark and glossy. *egleis* was first described by Dr. BEHR without a name, being designed as "No. 5" in his paper on Californian Argynnis (1862); he contrasted it then with his "No. 4" which he later named *montivaga*. *egleis* is much more common than the latter. It was not until 1869, that Dr. BOISDUVAL described it as *egleis*, including therein the ab. *irene* Bsd. Regarding *egleis*, its author says that *irene*, after comparing more than 100 specimens, he finds that the species varies to such an extent that even after eliminating all the specimens that passed as *irene*, there still remained a greater number running into one another and representing every possible transition. Specimens from Bradley (California) are mostly very dark, rather brown than fulvous, the ♀♀ generally well silvered. — **A. mormonia** Bsd. was founded on a *mormonia* ♀ form which, according to EDWARDS, was nothing else but *egleis* ♀. He writes: "The original descriptions, which are in Latin, of *egleis* and *mormonia* afford no means of separating them; they only state that in *egleis* the spots on the under surface of the hindwings may or may not be silvered, whereas in *mormonia* they always are silvered. A comparison of the ♂ type of *egleis* and the type of *mormonia* Bsd. (♀) shows no other difference than can be explained by the difference in sex" (EDWARDS).

2. Subgenus: *Brenthis* Hbn.

A. myrina Cr. (= *myrissa* Godt.) (86 f). Upper surface fulvous, broadly bordered with black, the black *myrina* markings, especially on the hindwings, rather light. Under surface of forewings yellowish fulvous, somewhat lighter at the inner margin, with the apex and upper part of the outer margin deep ferruginous. Marginal spots slightly silvered. Hindwings rusty-brown, mottled with buff, and with small, but very distinct and very bright silvery spots. The wide space between the median band and marginal lunules is buff at the middle, under the apex and above the anal angle shaded with dark fuscous. ♀ somewhat paler, otherwise like ♂. Expanse: ♂ 1.4", ♀ 1.8". Egg conoidal, about $\frac{1}{3}$ higher than wide, with 16—17 vertical ribs, between which a number of delicate cross-lines. Its colour is pale yellowish-green. The mature caterpillar is cylindrical, blunt at the upper end, about $\frac{7}{8}$ " in length, dark olive-brown, marked with green, and with fleshy spines armed with very sharp points projecting at an angle of 45°, the anterior ones about four times as long as the rest. Pupa yellowish-brown, with darker brown spots, those of the thoracic and the two anterior abdominal segments with pearly lustre. *myrina* has in North America south of the Arctic circle a very wide range, without forming any variations worth speaking of. In this it differs from the European *scelene* which in some respects it resembles. It occurs in the United States from the New England States to Montana, and throughout

Canada from Nova Scotia to Alaska; in southerly direction it extends from New England through New York and New Jersey, and on the higher hills of the Alleghanies to Virginia and North Carolina.

tricularis. **A. tricularis** Hbn. (= *ossianus* Bsd.) (Vol. I, pl. 67 g) is by many authors treated as a form of *A. aphirape*, from which it differs in the clearer ground-colour, the fine, but very sharp black markings of the upper side and the likewise distinct markings of the under surface of the hindwings which stand out very clearly from the ground. ♂ above pale fulvous, with the base of the forewings and the inner margin of the hindwings densely dusted with black. The dark markings finer than in *myrina*, particularly the outer border quite narrow, joining a series of sagittate spots. The median area of both wings with relatively large and very regular rows of dots, vividly contrasting with the ground. The light spots forming the median band of the hindwings beneath show through above lighter than the ground-colour. Under surface of the forewings fulvous, shaded with ferruginous at the apex, the termen paler. Hindwings rusty-brown, with two bright yellow spots near the base, a strongly curved median band and a patch of pale buff on the outer border at the middle. All the spots without any silver. ♀ mostly paler than ♂, the marginal spots enclosed between the lunules and terminal lines very pale, often almost white. The postmedian row of black dots as in ♂, very distinct, regular and relatively large. On the under surface the markings of the hindwings are even more distinct than in the ♂, representing three sharply defined yellow bands of irregularly shaped spots, one near the base and one on either side of the discal area. The round postdiscal spots of the upper surface reappear also underneath as small ocelli, like the small marginal spots pale yellow, very slightly silvered. Expanse: ♂ 1,5'', ♀ 1,6''. The early stages have not been studied in the American form. *tricularis* inhabits chiefly Arctic North America (Labrador etc.), but is also found, although more rarely, farther south among the higher mountains of the Rockies *ossianus*. in Colorado. — The common Labrador form has been described as *ossianus* Hbst., which is also known from Arctic Scandinavia and Siberia as a very variable form of *aphirape*. The colour above is paler yellow than that of *tricularis*; the markings of the under surface, especially on the forewings, sharper, with the terminal spots larger, more distinct, yellow, slightly silvered.

helena. **A. helena** Edw. (87 e) appears closely allied to the Siberian form of *A. selenis* Ev., differing from it in the much paler ground-colour and finer markings of the upper surface. ♂ above dull fulvous, heavily obscured with blackish at the base of the forewings and on the inner margin of the hindwings. The black markings of the upper side, especially the terminal border, much finer than in *myrina*. On the under surface the forewings are pale fulvous, shaded with ferruginous at the apex. Hindwing deep brown-ochreous, with 2—3 small pale spots at the base, a very sharply defined median band, composed of paler spots inclining to buff on the costa and the end of the cell, and with a marginal row of rather small yellow spots. ♀ above very much as ♂, only with the ground-colour paler; the light markings of the under surface, especially of the hindwings, much more conspicuous, bright yellow, standing out more prominently upon the dark ground. *helena* is an alpine species found in the Rocky Mountains of North America from New Mexico to Colorado and Montana. In the South, in New Mexico and Colorado, it rises to elevations of about 12000 ft.; in Montana one meets it already at 6500 ft. above the sea. It is a common species, rather subject to variation, especially in the intensity of colouring and the distinctness of the spotting of the underside. *helena* was in 1899 captured by YOUNG also in Alaska, in the mountains between Forty Mile and Mission Creeks. These specimens are somewhat smaller than typical *helena*, with the colouring rather less bright.

montinus. **A. montinus** Scudder (87 f). ♂ above fulvous, quite similar to *A. chariclea* ♂, of which, according to some authors, it probably is a local form separated long ago, but with the ground-colour much darker. Under surface of hindwings deep ferruginous, marked with white lines and spots, the most characteristic of which is a heavy white bar at the end of the cell, and a similar small spot at the base; a marginal row of white spots, slightly silvered. ♀ very much like ♂, but larger, with the upper side paler. Expanse: ♂ 1,5, ♀ 1,75''. *montinus* is found in the Eastern United States quite isolated on the desolate barren peaks of Mount Washington and the highest adjacent summits of the White Mountains of New Hampshire. Like the arctic flora of its surroundings, it is probably a relic of the ice-age, being, as STRECKER supposes, a possible descendant of the arctic *chariclea* which through its long isolation was changed to the present distinct form. It resembles most the Wyoming form of *chariclea*.

chariclea. **A. chariclea** Schn. (Vol. I, pl. 68 c). ♂ above fulvous, the black markings heavy and both wings strongly obscured at the base with fuscous. Under surface of forewings pale yellowish-fulvous, mottled with ferruginous at apex and outer margin; hindwings purplish-brown, mottled with whitish-yellow, and traversed by a median band of irregularly-shaped, pale yellow spots. Marginal spots as well as 2—3 basal dots white, sometimes feebly silvered, but mostly with resinous lustre. ♀ differs from ♂ in having the black markings, especially of the outer margin heavier and darker, and the upper surface of both wings frequently heavily dusted with blackish; on the underside of the hindwings have the spots more distinct, contrasting more sharply with the ground-colour. Expanse: ♂ 1,5'', ♀ 1,75''. We have no description of the earlier stages. *chariclea* is a circumpolar species of the far North, being found throughout Arctic Scandinavia, Russia and Siberia as far as Novaja

Semlja, as well as in Arctic North America, from Greenland to New Foundland and Labrador, advancing in the West rather far to the south. Whereas in the Eastern Hemisphere it is rather local and not very abundant, it is in America quite common among the highest summits of the Rocky Mountains, in Yellowstone Park, in British Colombia and Alberta (near Banff and Laggan). It is rather inclined to variation: *obscurata* M. Lachl. *obscurata*, is, after *A. polaris*, probably the most northerly representative of the genus *Argynnis*, being found in Grinnels Land and on the adjacent islands up to the 80th degree of northern Latitude, whereas in Greenland near Port Foulke and Ivigtut on the south-west coast, and on the east coast between the 74. and 76. degree we meet with var. *arctica* Zetterstedt (Vol. I, pl. 68 b), which also occurs in Novaja Semlja. Another form, quite identical *arctica*, with the Greenland form *arctica*, was captured by YOUNG in Alaska, in the mountains between Forty Mile and Mission Creeks, in July, together with *A. pales alaskensis* Holl. and *helena* Edw. — The form of Labrador and the Rocky Mountains was described as *A. boisduvali* Dup. — *arctica* from Greenland deviates, according to its *boisduvali*, author, both from *boisduvali* and typical specimens of the European *chariclea* in having on the under surface of the hindwings the silvery spot of the median band in cell 4 uncommonly large, clear white, triangular and produced distally to a sharp point, reaching far beyond the silvery spot in 3, showing a complete analogy with the Novaja Semlja form. — *butleri* Edw., described as an aberrative form of *arctica*, is distinguished by *butleri*, the darker colour of the upper surface and the uniformly fulvous outer half of the under surface of the hindwings. It flies together with the main form in western Arctic America (Kotzebue Sound, 67—68° N. L.) as well as in Novaja Semlja. *boisduvali* Dup. was treated by EDWARDS and others as separate species, but is not always easily distinguished from *chariclea*, chiefly by the darker ground-colour being more heavily obscured at the base and on the outer margin; on the underside of the hindwings the pale streaks are faintly suffused with violet, and the median band is densely dusted with yellow-or reddish-brown. Expanse: ♂ 1.5", ♀ 1.75". From Labrador to British Colombia and Alaska.

A. pales Schiff. (Vol. I, pl. 67 i) is another circumpolar species, found throughout northern Europe *pales*, and Central and Northern Asia, and discovered within recent years also in America (Alaska). Specimens from north-eastern Alaska (69° 40' N. Lat. and 141 W. Long.) have in the ♂ the ground-colour bright fulvous, with the black markings moderately heavy; the forewings dusted with fuscous at the base, the hindwing broadly shaded with greenish-black as far as the apex of the cell and nearly to the anal angle. Both wings densely clothed with hair in the inner half. Underneath it resembles *eupales* Fruhst. (Vol. I, pl. 68 b), in the uncommonly variegated markings of the hindwings. Forewings light fulvous, somewhat paler distally, with reddish-brown dashes at the apex and on the upper part of the termen, the black markings very faintly showing through from above. Hindwings cinnamon-brown, marked with greenish-yellow spots at the base, a strongly denticulate and deeply notched median band of yellowish-green colour, and the termen similarly shaded at the middle and apex. The median spots of the upper surface reappear underneath in the shape of small black-ringed ocelli; the marginal spots and a few patches in the median and basal areas slightly silvered. ♀ rather paler than ♂, with the black markings heavier and the greenish-black shading more extensive. Under surface as in ♂, but the gaudy markings of the hindwings even more pronounced, the greenish bands and spots contrasting more sharply with the darker ground. Expanse: 1.2". — A somewhat different form, from Central Alaska, was described as ab. *alaskensis* Holl. (87 e). 1 ♂ taken in July 1899 in the Clondyke District, among *alaskensis*, the mountains between Forty-Mile and Mission Creeks. Differs from the northern form and from typical European *pales* in the extremely brilliant colouring of the upper surface, with the markings very fine and almost obsolete in the discal area. On both wings the black basal shading is much less pronounced, reaching at the most the middle of the cell. Above it resembles most *pales generator* Stgr. from Central Asia; underneath it quite agrees with normal *pales*. Expanse: 1.3".

A. freya Thunberg (Vol. I, pl. 68 c) has an enormous range of distribution, extending from northern *freya*, Scandinavia through Russia and Siberia to North America, without varying to any extent. It is nowhere scarce on peatbogs and in swampy meadows. Specimens from Yellowstone Park differ in no way from those taken in Lapland or Siberia. But its range varies greatly as we go East: Whereas in Europe the species is almost entirely confined to the Arctic Region, hardly descending below Latitude 59°, its northern limits being Lat. 70°, we find it in Eastern Asia still between Latitude 50° and 60°, and in North America it descends at least to the 40th degree of N. Lat. (on the highest summits of the Rocky Mountains in Colorado), its northern limits being here about Lat. 64°, on the Forty-Mile Creek in the Clondyke District (YOUNG). This may only be explained by the more or less similar climate and flora of the more southern ranges of the Rocky Mountains. The upper surface of *freya* is pale fulvous, the forewings at the base, and the hindwings on the inner half deeply obscured with fuscous. All the markings very heavy. Under surface: Forewings very pale fulvous, with the apex yellowish and mottled with rusty-brown. Hindwings ferruginous, shaded with yellow in the inner half, marked with pale yellow or whitish spots and dashes and a series of small terminal lunules,

tarquinius, slightly silvered. Expanse: 1.4—1.5". — *tarquinius* *Curt.* refers to specimens from British Colombia and farther north, differing but little from the main form in their smaller size.

polaris. **A. polaris** *Bsd.* (87 f, Vol. I, pl. 71 e) resembles the preceding species, but is more variable. Upper surface dull fulvous, the markings on the inner half of both wings broadly diffuse, almost obscured by the dark shading of the basal area. The median area defined outwardly by an irregular heavy undulate band. The submarginal row of spots regular and very distinct; the marginal border marked by black spots at the end of the veins separated by streaks of the light ground-colour. On the under surface the forewings are rather paler fulvous, with the markings almost as distinct as above; the marginal area with a series of yellowish-white streaks placed vertically to the termen. Hindwing deep ferruginous, the bands and spots whitish, with a faint nacreous lustre in the basal half, standing out clearly from the ground. *polaris* which also occurs in Europe, goes among all *Argynnis* farthest north. In America we find it from Labrador to Greenland (to 81° 52' N. Lat.), in Alaska about to Latitude 70°, whereas in Europe Latitude 71 is its northern limit. The Greenland form of which a number of specimens was collected by the second Norwegian Arctic Expedition of the "Fram" (1898—1902) on Ellesmere Land, in June and July, described as v. **americana** *Strand*, varies considerably in size (from 1.4—1.8"). From the Lapland form it differs, according to its author, on the under surface of the hindwings by the following characteristics: Norwegian specimens have in the median band the white spot in cell 7 more deeply notched on the inside and produced to two sharper points; in the terminal area the pale dash on rib 4 generally is more distinct, and the hindmost of the white basal spots (in cell 1 c) is longer and sharply pointed outwardly, whereas in Greenland specimens it appears bluntly rounded or cut off straight across. Finally the pale streak in the outer interspace seems more distinct in the European form. Specimens received by Prof. SEITZ from north-eastern Alaska (69° 40' N. Lat.) do not differ appreciably from the Palaearctic form.

frigga. **A. frigga** *Thunbg.* (Vol. I, pl. 68 c) rather closely resembles *polaris* above. Pale fulvous, the markings heavy, rather diffuse; the black marginal lunules are confluent, forming a narrow, diffuse band, parallel with which is a row of submarginal spots. Forewings at the base and the hindwings on the inner two thirds heavily shaded with fuscous. Under surface characterized by the broadly cinnamon-brown apex and termen of the forewings which are otherwise pale fulvous, spotted with yellow at the apex of the cell. Hindwings cinnamon-or rusty-brown, the outer third laved with purplish-grey, especially at the outer angle; the median band dusted with brown, frequently only indicated by a few darkish, irregular spots standing out more or less prominently from the ground-colour. On the costa near the base a large, very conspicuous whitish rhombic spot. ♀ but slightly different from ♂ in that the spots on the under surface of the hindwings are lighter and more sharply defined. Expanse: 1.6—2.0". *frigga* is, like the two preceding species, a circumpolar, rather variable species, occurring as well in Europe (Finland) and Siberia as far as Novaja Semlja as in Boreal America, advancing in the western Hemisphere southward about to Lat. 40° (in Colorado). Several varieties have been described: *saga* *Stgr.*, the most southern form, extending from Colorado where it is rather scarce, to Lat. 63°, and from the Rocky Mountains eastward to Labrador. It differs from the main form in having the pale whitish or yellowish portions of the underside of the hindwings partially obscured, the large spot at the costa excepted which remains white even in the still darker var. *improba*. — *improba* *Btlr.* is a much smaller, purely arctic form, found in America and in the farthest North of Siberia (MARKHAM), advancing both in the East and West of the American Continent to 68° N. Lat. (RICHARDSON). From the main form it deviates in having the ground-colour much darker, the markings more diffuse, the median band brighter yellowish, dusted with reddish-brown, and the costal spot on the under surface of the hindwings faintly tinged with bluish. A ♀ from Baffinsland, in the Tring Museum, only measures 1.4"; — another ♀ received by Prof. SEITZ from north-eastern Alaska (69° 40' N. Lat., 141° W. Long.) = fa. **alaskensis** *fa. nov.* (87 c) is distinguished by its larger size (2.0"), and the much lighter, pale yellowish-fulvous colouring especially of the forewings; the latter have the median band broad, somewhat diffuse, but the base but slightly obscured and the postdiscal row of dots relatively insignificant. On the other hand the hindwings have the inner two thirds almost wholly deep grey-fuscous, with the exception of 3 small transcellular spots of the ground-colour, but the markings of the outer margin rather feeble. The under surface is on the whole somewhat paler than in the allied forms, the markings of the hindwings are more sharply defined, the pale median band of spots likewise distinct, dusted with reddish-brown, very much as in *saga*, and margined distally by a broad, uncommonly dark band of cinnamon-brown colour. Otherwise the underside does not differ from that of normal specimens.

bellona. **A. bellona** *F.* (87 f) is, in contradistinction to the last-mentioned forms, a purely American species. The forewings have the termen angled and bluntly produced under the apex. Upper surface fulvous, the black markings of the basal half more or less confluent, in the outer half less developed. Under surface of forewings pale fulvous, shaded with purplish-brown at the apex and on the termen. Hindwings rusty-brown, the basal half

mottled with pale and dark, the outer half suffused with purple; two rows of median spots margined with dark ferruginous, a median band of small ocelli ringed with dark brown, and a series of submarginal spots of the same colour. At the costa near the base a large rhombic spot of pale violet. Expanse: 1.7—1.8". The egg and the young larva resemble exactly those of *A. myrina*, but when full grown, the larva differs from the latter in having the spines on the second segment of the same length as the others. According to MEAD it rather resembles that of *A. cybele*, which would be an other proof of the inadvisability of separating *Brenthis* as a genus of its own. *bellona* is very common throughout the United states of North America, from the Alleghanies in Virginia, where it only occurs at higher altitudes, to Canada, and westward to the foot of the Rocky Mountains. It flies together with *A. myrina*, being easily distinguished from it by the absence of the bright silvery spots on the under surface adorning that species.

A. epithore Bsd. (86 f) is a close ally of the preceding species, which it replaces in the western *epithore*. States, from Colorado to the Pacific Coast, being possibly even a variety of the same, as STRECKER a. o. have assumed. The forewings are much less excavated below the apex; the ground-colour paler fulvous, the black markings slighter, but the basal half of the hindwings much more heavily obscured with fuscous. The under surface resembles that of *bellona*, but is less brownish purple, mottled more distinctly with yellow, with the markings of the hindwings almost obsolete in the distal half. — var. **kriemhild** Streck. refers to *kriemhild*. a rather paler form from the arid, waterless mountains of Utah and Arizona.

A. alberta Edw. (87 f) is among all the other species of *Argynnis* easily recognized by the faded, *alberta*. dull reddish ground-colour; the markings resemble those of *helena*, but are much paler and partially almost obsolete, appearing as obscure, dark shadowy spots and streaks. On both wings the median bands dissolve into single short striae, barely visible on the hindwings. The under surface even more monotonous than the upper surface, pale red-brown, the hindwings rather paler in the outer half, slightly clouded with yellowish in the discal area, with yellowish-white terminal spots. The ♀ on the whole darker than the ♂, varying from slaty-grey to dark brown, both wings with a peculiar greasy lustre. Expanse: 1.6—1.9". Of the early stages only the egg and the young larva are known; the former pale yellow, conoidal, almost as high as broad, marked by about 40 vertical ribs; it takes 10 days to hatch the larva, which, like most American *Argynnis*, hibernates when quite young. *alberta* is not scarce on the higher mountains around Laggan in the Canadian province of Alberta, close to the boundary of British Columbia; it flies together with the much less common *A. astarte*, *Col. nastes*, *Chrys. snowi*, on the steep upper slopes of the mountains, the ♀♀ generally higher than the ♂♂. Whereas the ♀♀ fly about slowly, alighting frequently on flowers such as Dandelion etc., the ♂♂ spend most of their time racing restlessly up and down the slopes, flying so close to the ground that they appear to glide on the surface (EDWARDS).

A. astarte Dbd. and Hew. (= *victoria* Edw. 1891) (86 f). Upper surface bright fulvous; forewings slightly obscured at base, hindwings broadly shaded with fuscous, the dark area covering nearly half the wing. The black markings on both wings very heavy; on the hindwing the terminal border rather broader than on the forewing, slightly laved with paler between the nervules. The submarginal rows of spots small, rather obscure, the roundish discal spots as well as the dentate median band heavier on the forewings than on the hindwings. Underside of forewings pale fulvous, the inner part of the cell shaded with brownish, the subcostal spaces enclosing some small spots of faint orange-red. Underneath the markings of the upper surface are repeated, but reduced. The under surface of the hindwings a lovely orange-red, gradually getting paler toward the termen. Two blackish terminal lines, preceded by a series of yellowish-white spots separated by the nervules; in the outer portion of the disc a row of small roundish black dots indistinctly edged with white proximally. But the best characteristic is a broad band composed of irregular, whitish-yellow patches faintly margined with black, traversing the middle of the hindwing, strongly contrasting with the dark orange-red ground. ♀ very much as ♂, but with the markings even heavier, rather more diffuse outwardly. *astarte* approaches in size the true *Argynnis*, but, judging from the nature of its markings, belongs to the *Brenthis* group; expanse: ♂ 2.0", ♀ 2.2". The type of which DOUBLEDAY figured the less characteristic upperside as that of a new species of *Melitaea*, without, however, giving any description, is in the British Museum; although captured some time ago by Lord DERBY's collectors, probably in the mountainous part of British Columbia, it was later on mentioned in KIRBY's Catalogue as coming from Jamaica, for which reason it was not mentioned in STRECKER's Catalogue. It was not until some time afterwards, that T. E. BEAN rediscovered it near Laggan (Alberta), close to the British Columbian border, in Lat. 51", in the valley of the Bow River. It is always found singly on the highest mountain peaks, not below an altitude of 8600 ft., away above the timber-line, at the end of July and during the first days of August. It is exceedingly shy and difficult to catch; its flight, especially that of the ♂♂, very swift; rushing and racing about on the desolate rocky slopes, with the wings in constant whirling motion, alighting but rarely

and only for a moment, it is scared by the least disturbance, and even the most careful approach of the collector seems sufficient to drive it to precipitate flight. *astarte* seems to occupy among the American *Argynnis* a rather isolated position, having no closer affinities except with *A. amphilocheus*, *elatus*, *erda* of the Amur Region (cf. Vol. 1, p. 233). It is a most constant species which varies neither individually nor sexually to any extent.

youngi.

A. youngi Holl. ♀ above pale fulvous; the basal area of the forewings as far as the middle of the cell, that of the hindwings to its apex and to the tornus dusky greyish-brown. On the forewings the space between the spot in the middle of the cell and the K-shaped spot at its end, as well as the space surrounding the submarginal row of spots uncommonly pale, nearly white. Hindwing with broadly black median band which near the origin of the second median nervule gradually shades into the deep blackish-fuscous basal colour. Beyond the apex of the cell, between the median band and the dark basal area two strongly faded quadrate spots. Fringe white, on the veins fulvous. Under surface of the forewings uniformly pale fulvous with the markings rather slight. Hindwings in the inner half reddish ochreous, the median band only indicated by a faint pale streak; every spot margined by a delicate reddish line. From the origin of the 3. median nervule to the inner margin behind the median band a brown shade. Outer half very pale ochreous, almost whitish, with the discal and submarginal rows of spots but faintly indicated. Along the costa a regular fine silvery line. None of the spots are silvered, only the upper one in the median band, which is shaped like an hour-glass, is slightly silvered where it touches the silvery line. Abdomen and antennae blackish above, reddish underneath, legs evenly fulvous. Expanse: 1,2". Only 1 ♀ known, which was captured by YOUNG in north-eastern Alaska between Forty Mile and Mission Creeks.

The now following species belong to a rather isolated group of South American *Argynnis*, which, being entirely separated from their allies in North America, are confined to the temperate region of Western South America. Great uncertainty prevails as yet as to the synonymy of the forms belonging here; and it is probable that the greater number of the species established by BOISDUVAL, REED, BLANCHARD e. a., may be synonymous or varieties of one and the same species.

cytheris.

A. cytheris Drury (= *cytheris* Reed, *sigia* Hbn., *lathonioides* Blanch., *dexamene* Bsd.) (87 f). A most variable species ranging from Fireland to Northern Chile, and distinguished by the most highly developed sexual Dimorphism, both as to the shape of the wings and to the colouring and markings of the under surface of the hindwings. Therefore it is not to be wondered at that not only the forms which vary in colouring and markings, but also the different sexes were repeatedly described as separate species. In shape it resembles *A. lathonia*; the forewings, especially of the ♂, are distinctly and bluntly projected below the apex, and both wings are strongly denticulate; this appears less conspicuous in the ♂♂, but both sexes are distinguished by having on the hindwings the costal margin strongly concave. The upperside of the ♂ varies from dull brown to fiery fulvous, with the basal area but slightly obscured, the black markings of the forewings moderately heavy and sharp. Both wings with two terminal lines, the outer exceedingly fine, the inner one rather strong, broadly confluent in their upper portion. The median band of the hindwings is composed of small, isolated, crescent-shaped streaks, the marginal markings mostly greatly reduced. The under surface of the forewings pale cinnamon-red, with the black markings less distinct than above, and, especially in the apical area, almost obsolete. Apex deep cinnamon-red, only with a very distinct white costal streak. The colouring of the under surface of the hindwings is generally a more or less uniform deep red or cinnamon-brown, shading outwardly into a peculiar brownish-pink and being faintly suffused with yellowish at the anal margin. The black markings of the upper surface are very faintly repeated underneath in the inner half. In the middle of the wing a curved longitudinal streak of whitish or brownish-yellow follows the upper median nervule toward the termen; in addition a small pale yellowish-white cross-bar on the costal margin close to its extremity. The length of the median streak varies greatly, it being not seldom quite short and rudimentary. Some ♂♂ from Ushuaia (Fireland) have the under surface of the hindwings much paler, brownish-yellow, with a dark postmedian transverse band above which there are two, below 3 obsolete spots obscurely margined with fuscous. These ♂♂ represent in the less monotonous markings of the under surface a sort of transition to the much more varied underside of the ♀♀. These have the forewings strongly incurved below the apex, and both wings distinctly denticulate, the basal area very faintly obscured with fuscous. Forewings with the markings moderately heavy; the median band composed of isolated spots, the postdiscal spots relatively large and very regular, preceded at the costa by a white angular spot. The black terminal lines broadly confluent, joining at the apex the submarginal and postdiscal rows of spots. On the hindwing the markings much slighter, especially in the basal half; the median band barely indicated by very fine, curved striae. The submarginal spots on both wings are rhombic, distinctly separated from one another and the terminal border. On the under surface the forewings resemble those of the ♂, light cinnamon-red, much paler towards the termen, with the black markings rather diffuse, and obsolete in the apical area. Apex grey-fuscous, with a white dash on the costa and a clouding of ferruginous which also appears on the outer border at the middle. On the under surface the colour of the hindwing is greatly subject to varia-

tion. The inner half pale buff, yellowish-brown, fuscous-grey to cinnamon-brown, mottled with paler tints. The short white costal streak of the ♂♂ is enlarged in the pale-coloured ♀♀ to a narrow median band of whitish-purple reaching the inner margin, and accompanied proximally as far as the median vein by a dark narrow fascia, distally by a broader and somewhat darker band with 5 pale, dark-edged ocelli. Between this and the pale greyish-brown termen a narrow and strongly dentate, buff submarginal band, intersected in a most characteristic manner by the pale silvery white longitudinal streak which we also find in the ♂♂, and which is continued toward the base by another, paler, elongate triangular spot within the subbasal band. Occasionally we find in the basal area also a few obsolete dark dots. Fringe whitish, on the nervules black. The ♀♀ with dark brown under surface present a very different appearance, and if one compares the most extreme dark specimens with the lightest, one might easily take them for two different species. Specimens taken at Ushuaia (Fireland) in November and December are on the whole rather smaller than the more northern specimens from Puntas Arenas, measuring only 1,25" as against 1,8" in the latter; the smaller specimens (♂♂) are above more dull brown, with the under surface of the hindwings dark violet-brown. One ♀ from Puerto Toro (Navarin Island, February 1906) is likewise quite dark. A ♂ captured by Dr. OHLIN on the Rio Grande (East-Fireland) has the underside of the hindwings as well as the apex of the forewing quite dark, dull brown-grey, differing greatly from the violet-brown colouring of all other ♂♂ of that region; all these specimens are another proof of the variability of the species. — An *Argynnis* larva found by Dr. MICHAELSEN in Fall 1892 at Puntas Arenas probably belonged to this species; in length it measured 1,2", its colour was fuscous-black, underneath pale brownish; above with 4 rows of spines densely covered with brownish bristles, those on the first segment longest, on the second 4 mm, on the remaining ones 2—2½ mm in length; it most resembles the larva of *A. aglaja*, but has the spines longer, with stiffer and longer bristles. Head glossy black, covered with thin hair. Prof. BERG gives in „Anales de la Sociedad Científica de Argentina“ a synopsis of *cytheris* Drury and **dexamene** Bsd. which he treats as two *dexamene* separate species, without, however, entering into further detail. From the imperfect description of BOISDUVALS it is not possible to recognize in his *A. dexamene* (from the Argentine Republic) any more than in *lathonioides* Blanch., anything but *cytheris* ♀♀ with pale and feebly marked undersides. Also **A. montana** *montana*. Reed from the Central Cordillera of Chile, which was by BERG considered as identical with *dexamene* Bsd., appears in the figure as a similar, rather smaller *Cytheris* ♀. — **lathonioides** Blanch. is above pale fulvous, *lathonioides* slightly obscured in the basal area; the markings of the forewings somewhat broader and heavier than in normal *cytheris*, the median spots united to a strongly tortuous band. The postdiscal spots on both wings heavy, likewise the submarginal row which consists of uncommonly large rhombic spots. On both wings the terminal lines are broadly confluent on the nerves, in the interspaces interrupted, representing a series of fairly large spots placed on the extremities of the veins. But in the inner half of the hindwings the markings are quite slight. Underneath the forewings are more yellowish-brown than in typical specimens, on the hindwings the portions which in those are fulvous, are paler, greyish-brown with greenish tone. 1 ♀ (type) from Sa. Rosa, in the Museum for Natural History at Paris. — **anna** Blanch. (= *anna* Reed) appears, from *anna*. several ♂♂ from Ushuaia in the Paris Museum, rather smaller than normal *cytheris*; on the upper surface they can hardly be distinguished from them except by the more conspicuous obscuration of the basal area which on the hindwings reaches beyond the middle of the cell. Underneath the forewings are quite as in typical specimens, the hindwings fiery cinnamon brown, very densely scaled with yellowish, but without any markings whatsoever outside of the two pale streaks. It is found, according to EDMONDS, from the Straits of Magalhaens to the Atacama Desert in northern Chile, up to altitudes of 6000 ft. Dr. STAUDINGER writes concerning these forms: „Among the many hundreds of specimens I received from Chile I have never been able to discern more than one very variable species, *A. cytheris*, with which surely also the form from Fireland must be classed“. — **signa** Hbn. refers to the northern, alpine form of *cytheris*, which, however, does not *signa*. vary constantly from the typical form, either in size or colouring. — As **valdiviana** Phil. we find descri- *valdiviana*. bed a form from Central Chile (Valdivia) deviating from ordinary *cytheris* in the unusually prominent and heavy markings on the inner margin of the forewings; also on the hindwings the postmedian row of dots is always very distinct, whereas in the more southern forms it is quite rudimentary.

A. darwini Staud. was described from specimens taken by Dr. NORDENSKJÖLD near Puntas Arenas in *darwini*. November and December 1895 (♂♂, 32—34 mm), and by Dr. OHLIN in February 1896 on the Rio Grande in East Fireland (♀♀, 30—32 mm). It probably is closely allied to the following *A. modesta* which it seems to connect with the preceding group. The original description of Dr. STAUDINGER's is as follows: „*darwini* is about as large as the smallest Antarctic *cytheris* (30—34 mm). The ♂♂ above paler and brighter than those of *cytheris*, rather golden brown. The ♀ has the upper surface of the forewings and the inner margin of the hindwings suffused with greenish-grey, in consequence of which the bright brown ground-colour is here hardly noticeable. The black markings as in most *Argynnis*, but heavier than in *cytheris* and partially confluent, forming below the discal cell near the inner margin invariably a sharp outward angle touching the median vein; in all the forms of *cytheris* with the exception of *valdiviana* this mark is very slight, often almost completely absent. The first transverse row of black spots beyond the cell forms in *darwini* a narrow, contiguous, strongly curved and dentate band, which is not observed in the southern-

most forms of *cytheris* found in the same localities. The forewings have in the outer half the nervules distinctly black also in the ♂♂, whereas in *cytheris* this is only observed in the ♀♀ and even there in a rather lesser degree. *darwini* ♂♂ have the fringe whitish-yellow, the ♀♀ yellowish-white, sharply checkered with black, the dark spots being united with the black spots at the extremities of the nervules into roundish patches not found in any form of *cytheris*. On the upper surface the hindwings, which are golden brown, have the outer half marked and coloured as on the forewings, having in the place of the postdiscal rows of black dots, which in *valdiviana* are always very distinct and in the southern forms of *cytheris* quite rudimentary, a black dentate transverse band which, however, is not always complete between the costa and submedian vein, being in some specimens above the cell interrupted or aborted. On the under surface the forewings are of a duller colouring than above, the costal edge and apex yellowish, with the black markings almost obsolete, occasionally even completely wanting, only the 3 lower spots in the inner terminal row making an exception. From the costa near the end a short, narrow, brownish semi-band to the lower radial vein, enclosing two small, obsolete ocelli filled with yellowish; this band is outwardly indistinctly defined, proximally very sharply set off against the lighter area (in ♂♂ yellowish, in ♀♀ whitish), the light inner band corresponding to the whitish costal streak of *cytheris*. Fringe more distinctly and broadly mottled with black than in the largest specimens of *cytheris*. The termen which, especially in *cytheris* ♂♂, is strongly indented, is in *darwini* feebly excurved, occasionally almost straight. On the under surface the hindwings, although resembling the paler ♀♀ of *cytheris* in the markings, differ from them in colouring, being in ♂ very pale, in ♀ darker fuscous. The nervules all more or less pale, almost whitish. The basal area as far as the apex of the cell marked with dentate spots, darker brown, edged with whitish; following these a broad, paler transverse band outwardly margined with darker beyond which a light area; hereafter 5 dark, light-centred ocelli, two in the upper, three in the lower portion, separated on the median vein by a whitish streak sharply angled towards the termen; beyond the ocelli a narrow, yellowish or whitish, dentate band, with the points very sharp, breaking through the dark terminal band joining the dark spots in the fringe. These terminal markings distinguish *darwini* from all other *Argynnis*, also from *inca* in which the nervules, although much clearer white, are on the dark terminal border not marked with sharp points. Antennae as in *cytheris*, with the shaft dark brownish, the club blackish above, edged with brown at the end, in ♂ pale grey beneath. Palpi of ♂♂ rufous, of ♀♀ whitish ochreous, covered with long hair. Breast and legs as well as the lower side of the abdomen light coloured; the latter above in the ♂♂ covered with brown, in the ♀♀ with grey hair. Puntas Arenas and East Fireland.

modesta.

A. modesta Blanch. (Type in the Museum of Natural History at Paris, locality not given); a very small form, taken in the mountains of southern Chile at elevations of from 7800—9800 ft., possibly identical with "*A. dioides*, of the terres magellaniques" mentioned by BOISDUVAL in his description of *A. dexamene*, but about which I have not been able to find anything in the literature. From *cytheris modesta* as well as the following forms may be easily distinguished by the shape of the wings; forewings elongate, oval, not in the least excavated; the hindwings almost wholly round, the costal edge distinctly convex, not concavely excavated. The colouring much lighter than in *cytheris*, pale reddish-yellow, the basal area faintly obscured on both wings. The black markings on the whole feeble, in the inner half greatly reduced, the postdiscal row in both wings composed of quite minute dots; only the median spots are relatively heavy and prominent, being almost united into a band, the submarginal spots roundish, isolated. The terminal lines marked by distinct spots placed upon the ends of the nervules. Underneath both wings are a monotonous pale buff, marked as above, but even more faintly and monotonously, the forewings with a few almost obsolete rows of terminal dots, the hindwings without any trace of markings outside of four very indistinct rows of minute dots of pale olive colour, the nervules paler than the ground; fringe yellowish-white, sharply mottled with black on the veins, joining the terminal spots, very much as in *darwini*, from which, however, it is easy to distinguish by the markings of the under surface and by the absence of the black dentate line on the hindwings above.

inca.

A. inca Stgr. (87 f) was discovered by GARLEPP in Bolivia and taken in larger numbers near Malaga, Huallatani, at an altitude of about 13 000 ft. above the Sea. Although the upper surface shows the general markings of the group, resembling somewhat *A. pales*, the underside is quite different, also from *A. sobrina* Weym. which was taken by Dr. STÜBEL at Sicasia in Bolivia at about the same altitude (only the ♀ known); with this it shares the rounded shape of the hindwings and the peculiarity that the ♀♀ are above chiefly pale red-brown, the ♂♂ always dark greyish-green, which is the very opposite of *A. pales*. Expanse: 1.0—1.3". The peculiarly greenish-grey colouring of the upper surface of the ♂ is much more decided than f. i. in *A. pales* ♀ fa. *napaea* or in *A. paphia vulesina* Esp., only the macular row just preceding the termen is brownish. Both wings have the basal area slightly obscured by fuscous, with the black markings moderately heavy, varying but slightly in the size of the spots, and chiefly composed of isolated dots and streaks. The median band especially of the hindwings indicated by very fine striae. One ♂ has the upper surface darker than the rest, heavily dusted with blackish; in several others it is faintly suffused with brownish. The ♀♀ have the upper surface brown-yellow, in the basal area greenish; only quite rarely we find a faint greenish suffusion to beyond the middle of the wing. Both sexes have the fringe mottled with dark and pale, occasionally marked

with darker on the nervules. The under surface of the ♂ a peculiar yellowish-grey, with the veins clear white, the termen of both wings, as well as the basal area and, to a lesser extent also the median band, of the hindwings dull chocolate-brown, more rarely somewhat deeper fuscous. In most ♂♂ the brownish median band is almost obsolete, only the inner blackish edge remaining very distinct. The black markings as above, only more faint. ♀: Under surface of the forewings, on the hindwings the basal area, a postmedian band and the termen chocolate-red, the intervening parts of the hindwings pale fulvous; the median row of spots diffusely black. The head dirty brownish, in the ♀♀ clothed with red-brown hair; palpi above covered with red-brown, beneath with yellowish-brown hair. Antennae above blackish, towards the base whitish-grey, the clubs short, spoon-shaped, brownish beneath, blackish above. Thorax clothed with dusky greyish-green hair, abdomen dark above, dirty brownish-yellow underneath (STAUDINGER).

A. cora Lucas. One specimen (type), taken by GAY in the Cordillera of Peru, in the Natural History *cora*. Museum at Paris. In size approaching the smallest specimens of *inca* (1.0''); the wings similarly formed as in this and *modesta*; forewings elongate, pointed, oval, hindwings almost round. Upper surface pale greyish-brown with greenish tone, only the terminal portion suffused with cinnamon-brown; both wings have the basal area pretty broadly obscured with fuscous; the markings faint and diffuse, formed in the inner half of the forewings of isolated striae of pale blackish-brown; the postdiscal spots small, pretty regular; the submarginal spots oval, almost united to a band, the terminal lines barely visible. On the hindwings the markings of the inner half almost obsolete, in the distal half as on the forewings, if anything even fainter and more indistinct. The colour of the under surface brownish-buff; on the forewings the cell and discal area delicately marked with brownish; the apical area and the upper portion of the termen dark ferruginous, cut up into broad arrow-shaped spots by the whitish veins. Also on the hindwings the pale ground is in a most characteristic manner interrupted by more or less complete dentate macular bands of dark ferruginous made up of sharply sagittate spots which are deeply notched at the outer end and pointing towards the base, separated by the veins which are, especially in the outer half, broadly white. The cell is almost completely filled with them, only the apex and a small patch in the middle remaining white; toward the base a number of similar spots. The median and postdiscal rows are, between the upper median and lower radial, interrupted by streaks of the ground-colour, whereas the marginal band is complete. Fringe very long, yellowish-white, on both sides marked with black on the nerves, the black spots united with the blackish extremity of the veins. From near Cuzco (Guamanga), Peru.

There remains to be added that there still are a few other forms of American *Argynnis* that have received separate names, and which we regard as accidental colour-aberrations. Thus *A. letis* Wr. from the Western United States, a form of *A. leto* (86 b), has the apex of the forewings and the entire outer half of the hindwings uniformly fulvous, without hardly any markings. — *A. laura* (87 b) ab. *laurina* Wr. lacks on the under surface the silvery spots, being related to the main form somewhat as *cleodoxa* is to *A. adippe*.

3. Genus: **Melitaea** F.

This genus is confined to the northern temperate regions of the Earth, being quite equally distributed over the Eastern and Western Hemisphere, each of which is inhabited by about 30 species. If in Vol. 1, I have enumerated as many as 170 Palearctic forms, that is ever so many more than are known from America, it is only due to the fact that in the Palearctic species every Melanism and every variation of the bands gave rise to a new name; following this method, it would indeed be easy to equally increase the number of American *Melitaea* forms.

In structure the genus in some respects closely follows *Argynnis*, having, like this, the clubs of the antennae flattened, slightly concave; but the palpi are not swollen, but instead densely clothed with tufts of hair underneath, with the middle joint somewhat distended, still on the whole rather slender. Less important seems the venation; it is generally stated, that *Argynnis* has the cell of the hindwings always closed, whereas *Melitaea* has it open; but a close examination will reveal also in many *Melitaea* traces of a lower discocellular vein closing the cell.

From the very similar group of *Phyciodes* s. s. *Melitaea* cannot be distinguished by any constant characteristics, even the most painstaking anatomical examination or even their biology revealing such. From *Eresia*, however, they deviate in that the species belonging to that genus probably without exception are mimetic forms, copying Heliconids, Danaids or Acraeids, whereas not one species of *Melitaea* is known to copy any other butterfly; even in *Melitaea acraeina* Stgr. which received its name from a most superficial resemblance to an *Acraea*, Mimicry seems out of the question, as I have already shown in Vol. 1, p. 218.

On examining, however, on Pl. 91, our figures of *Eresia*, one might indeed take them to be a group of Heliconids, Acraeids and Ithomiinae. American *Melitaea* are distinguished by having the palpi very finely pointed, the second joint being rather stout, but not swollen; in structure they resemble those of *Phyciodes* (REUTER). It may be stated that the definition or limitation of these two genera is not at all the same with all writers, in consequence of which a number of intermediate genera have been created, such as *Thessalia*, *Charydras*, *Cinclidia* etc., which in part contain species belonging to either genus. I consider as true *Melitaea* all the more robust forms found in temperate North America, whereas the *Phyciodes* which being very numerous all the way from Texas to Patagonia, are represented in the North by but a few forms, may be regarded as their southern representatives.

As of *Argynnis*, thus we also find of *Melitaea* the largest species in America. In the Old world the largest forms are those observed in Eastern Asia; but even these are, especially as regards the volume of the body, far surpassed by the gigantic American forms, such as we have represented on Pl. 88 a, notwithstanding the fact that the original from which the *phaëton* ♀ was figured, was artificially bred at Francfort, that is under rather unfavourable conditions. The differences between the Old and New world *Melitaea* are exactly those existing between the European and American Lepidoptera in general, which I may sum up in these words: In North America we find the species on the whole larger, less variable and much richer in individual numbers. What the European collector on that continent is most forcibly struck by, is the astonishing number of butterflies assembling in many localities, the like of which may in Europe only be found in certain favourable places in the higher Mountains. The larger size and more brilliant colour of the Nearctic butterflies renders moreover a day's catch a much more imposing and conspicuous sight than is the case in Europe or Western Asia. But on close examination one finds that very often it contains but few diurnal species; indeed in most places in North America it would be no easy matter to gather in one day say from 30 to 40 different species, a result which in Central Europe would, in favourable localities, be attained without the least difficulty.

The genus *Melitaea* ranges in America from Canada to Mexico, but does not by far advance as far north as *Argynnis*. In the Eastern States only two species are known, all others inhabit the South and West, mostly California. Many species are, where they are found, among the commonest butterflies, occurring occasionally in dense swarms, a fact never observed in Eastern species. Some few species were bred in Europe from imported material.

Head large, thick, eyes distended, palpi long, porrect or upturned, heavily clothed with bristly hair beneath, with the second joint larger but not swollen, the third finely pointed. Antennae about half as long as the costa, occasionally somewhat less, ringed, thin and straight, with an oval, concave, rather spoon-shaped club. Forefeet almost (*gabbii*) or quite naked (*phaëton*), the mesothoracic and hindlegs stout and short, with the tibiae moderately or quite feebly armed with spines, occasionally without them. Forewings bluntly triangular, the termen slightly curved, the apex rarely projected (*leanira*); the middle cell broad; subcostal five-branched, the first nervule arising before, the second immediately behind the end of the cell, the third beyond the middle of the wing; hindwings with the inner margin quite feebly concave; round, with rounded apex, and acutely angled anally. Abdomen of some ♀♀ unusually stout and heavy, especially in *phaëton* and *chalcedon*. — Egg subcylindrical, truncated above and below, delicately fluted. Larva with short heavy fleshy spines covered with short, bristly diverging hair; many species are gregarious when young, separating when older into troupes of 2—3; they feed upon *Castilleja*, *Diplopappus*, *Chelonia*, *Lonicera*, *Mimulus*, *Scrophularia* and other lower plants; mostly whitish or bluish marked with darker.

phaëton.

M. phaëton Drury (= *phaetana* Hbn., *phaetoneta* Godt., *phaedon* H.-Schüff., *superba* Streck., *phaetusa* Hulst, *streckeri* Edw.) (88 a). Black, with orange-brown spots in the cell and before the termen and with marginal rows of lemon-yellow spots; all the spots heavier underneath. The above-mentioned synonyms refer mostly to quite unessential variations in the extent of the spots. — Larva blackish, head and anal segment deep black, the middle segments clouded and tinged with reddish-brown, the spines and head glossy black, venter rufous; hibernates in a common web, which is larger than a hand, but frequently is found at some distance from the foodplant (*Chelone*, *Lonicera ciliata*, *Viburnum dentatum*, *Mimulus ringens*, *Gerardia pediculata*), so that one must assume that they wander about. After hibernating they disperse and pupate in May. Pupa cream-white, of a bluish iridescence, finely dotted and spotted with black and orange. Imago flies from the end of May to July; but since stray specimens are found also in August and even September, it seems that in certain localities a second or exceptionally a fall-brood exists. It frequents the proximity of moist meadows, especially those near some woods, and is in certain localities exceedingly common; its flight is slow, and it alights more frequently on leaves or on the ground than on flowers. ♀♀ deposit their red eggs in dense clusters, often 400 or more. — *phaëton* is the only *Melitaea* found in the Eastern States. A remarkable fact is that several other species of butterflies superficially resembling *M. phaëton*, such as the Pierid *Eucheira socialis* (18 g) and the Nymphalid *Morpheis ehrenbergii* (93 a) likewise live in a common web.

chalcedon.

M. chalcedon Dbd. and Hew. (88 a) is of the same, equally variable size as *phaëton*. Upper surface

black with numerous larger spots of sulphur-yellow, only at the apex of the forewing some small fulvous spots. Underneath the forewings are fulvous, the hindwings banded with brown and yellow. — Egg at first pale yellow, later on darker; caterpillar full grown black, finely speckled with white, with single black spines, shaded with orange-red (dorsally) or blackish-blue ringed with orange, but longer than in *phaeton*; head bifid, black, flat. Pupa pearly-white, shaded with yellow, marked with fine black dots and streaks; abdomen ringed with chains of small orange tubercles. The caterpillar feeds on *Scrophularia*, also on *Dipsacus*, *Castilleja* and *Lonicera*. Imago from April to the middle of July, forming two broods gradually passing into one another, but in the northernmost part of its range only one brood. ♂ is a strong flier; it has the habit of chasing and driving away other butterflies; quite common in the Pacific States, especially in northern California. The clumsy ♀ flies but little; the species, especially the ♀, is very variable, some specimens being altogether black, others quite yellow. These variations were described as *fusimacula* and *mariana*; also cases of aberrative colouring are known, as f. i. *drinellei* H. Edw., which has either the ground-colour of the forewings or the spots coloured ochreous-brown.

M. cooperi Behr. (= *perdiecas* Edw.) (88 a) is considerably smaller than typical *chalcon*, which it greatly resembles above; but underneath the ivory-yellow spots of the basal area on the hindwings are arranged in a more regular band confluent with the yellow spot which in *chalcon* stands isolated within the redbrown subbasal band; this spot is in *cooperi* larger. On the hindwings the ferruginous band before the outer third is more strongly curved, and the yellow spots on the under surface of the forewings are reduced. California.

M. olancha Wright (88 b). This form which, like the preceding ones, occurs in the western United States, has the spots of the upper surface resembling those of *chalcon*, but whereas those in the basal area are reduced in size, those of the disk and marginal area are enlarged. The usually yellow spots are, moreover, in either sex both above and underneath much paler, nearly ivory-white; also the under surface, especially the fulvous bands of the hindwings, paler.

M. macglashani Riv. (88 b) is even larger than *chalcon*, exceeding all other *Melitaeus* in size. Similar to *chalcon*, but easily distinguished by the large reddish-brown marginal spots on both wings. Also in the discal area we find between the pale yellow markings of the black bands brick-red spots. California; apparently not scarce in certain localities.

M. quino Behr. (88 b). Like *chalcon*, the spots above smaller, but more sharply defined; differs especially on the under surface, where the entire markings are more varied, the spots largely divided by darker stripes, with more distinct blackish borders, only a small central spot of fulvous remaining. On the forewings the terminal pale spots are smaller, but sharper, nearly white in colour, the cell on the under surface more extensively marked with black. California.

M. colon Edw. (88 b) very closely resembles the preceding species, from which it represents a passage to *colon*. *chalcon* in having the brick-red marginal spots greatly reduced. Also the pale yellow spots may be much smaller and paler, some of them almost white, approaching *taylori* from Vancouver. Like the preceding, probably only a form of *chalcon*. From the Columbia River District, Washington and Oregon.

M. taylori Edw. (88 b) is even smaller than the preceding, intermediate between it and *baroni* which it replaces in the North; the spots are much brighter and more brilliant red than in the preceding; it somewhat resembles the European *aurinia*, which is the more remarkable since the larva likewise lives on *Plantago*. Vancouver.

M. anicia Dbl. and Hew. nec Scudd. (88 b). Like the preceding ones closely allied to *chalcon*, but much smaller; the yellow bands above narrower, duller, occasionally slightly interrupted; but the marginal borders entirely fulvous, and also the black ground-colour is largely replaced by fulvous. In western North America, from British Columbia to Montana and Colorado. — **beani** Skinn. (88 b) from the mountains in Alberta is as a rule even smaller and darker, the markings more dull.

M. colonia Wr. ♂ with alternating brick-red and ivory-yellow rows of spots on black ground, very closely resembling the European *Mel. maturna*, but differing in the position of the bands, as is seen in our figure of the ♀ which latter deviates from the ♂ in the reduction of the black ground-colour. Also the under surface of this species which is entirely confined to the west-coast of North America, strongly reminds us of *maturna*. Apparently local and not far distributed.

M. nubigena Behr (88 c) is generally larger than *beani* and redder, the much more brilliant brick-red colouring crowding out not only the black ground-colour, but also the yellow which is preserved distinct only in the narrow macular rows in the costal area of the forewing, and in and behind the cell. Rocky Mountains; quite common. — **wheeleri** Hy. Edw. (= *capella* Barn.) (88 c) is the fiery-red Californian form, frequently distinguished by a complete, pale macular band before the outer third of the forewings. — A close ally is **editha** Bsd. (= *anicia* Scudd. nec Dbl. and Hew.) (88 b), which is the other extreme. The red of the upper surface is replaced by a dull blackish-grey, the yellow macular bands oblique, dull and pale, but well developed; altogether the upper surface resembles that of a pale specimen of *taylori*; underneath

- the ivory-yellow bands of the hindwings are separated by rows of cinnamon-brown spots, which in *wheeleri* are a very brilliant brick-red. On the whole *nubigena* is related to the dull *editha* and the fiery-red *wheeleri*, as *aurinia* is to the dull *merope* and the fiery *iberica*. *editha*, probably a species of its own, comes from Southern California, where the caterpillar feeds on *Erodium cicutarium* and *Viola*. — **hermosa** *Wr.* is marked very much like *nubigena*, but the colouring is more dull, more extensively spotted with white, the antimarginal black band of spots on the forewings above much deeper and broader than in typical *nubigena*; California.
- augusta.** *M. augusta* *Edw.* (88 c) seems to be a combination of forms, having the fiery-red ground-colour of an extreme *wheeleri* interrupted by numerous yellow macular bands such as we find in *editha*, the result being a pattern very similar to that of *aurinia sareptana* (Vol. I, Pl. 65 d). Southern California; altogether one of the loveliest butterflies of North America. — **augustina** *Wr.* has the black bordering of the coloured bands obsolete.
- baroni.** *M. baroni* *Hy. Edw.* (88 c). The yellow spots of the upper surface as in the preceding, but the vivid brick-red of that species is replaced by a deep red-brown which gives it a distant similarity to a small-sized *chalcedon*. From this it is easily distinguished by the pale spots of the under surface of the hindwings, which in *chalcedon* are yellow, in *baroni* pearly or silvery-white. The caterpillar resembles that of *chalcedon*, velvety-black with fine white dots upon the tubercles, the dorsal spines honey-yellow, the rest black; feeds on *Castilleja*, hibernating in webs; pupates in May. Pupa bluish-white, thickly and finely dotted with black, marked with a few yellow spots. Imago from end of May till July.
- rubicunda.** *M. rubicunda* *Hy. Edw.* (88 c). Of the same size as the preceding, with which it flies in the same localities. The red and yellow spots on the upper surface bright and concise, just as in *colon*; but whereas in that species the outer of the yellow bands of the hindwings is the sharpest and most distinct, it is in *rubicunda* either wholly absent or only just recognizable. The caterpillar according to *BARON* quite different from that of *baroni*, but is said to live on a different food-plant, although *Castilleja* is also mentioned here. The imago was taken at considerable elevations in the pine-wood region, locally apparently common. It likes to rest on sandy spots, like *Oeneis iduna* with which it associates. In the net it clutches itself very firmly with its claws (*BEHRENS*). California.
- acastus.** *M. acastus* *Edw.* (88 d). This is the first of a series of *Melitaeas* with brilliant, uniform red upper surface, of a brownish brick-red shade reminding one somewhat of *Mel. cynthia* ♀ or a very brilliant red *Arg. pales*. The under surface of the hindwings resembles that of the European-Asiatic species of the *athalia*-group, having parallel rows of broadly confluent spots crossing the hindwings, corresponding in colour to the apex of the forewings, whereas the disk of the latter remains red. Utah, Nevada and Montana. The ♀ has the colour of the upper surface paler.
- palla.** *M. palla* *Bsd.* (88 d). ♂ resembles the preceding species, but may easily be distinguished above by the median band of the hindwings which is paler, contrasting strongly with the more fiery ground-colour. Underneath the cinnamon-brown portion of the outer band does not reach the costa of the hindwings, but leaves the upper two cells (above and below the 1. subcostal nervule) free, of the same colour as the yellow bands. The ♀, quite similar underneath, but more strongly shaded with red-brown, is above very much more black, with dull reddish and yellowish spots. Larva on *Castilleja*. Western states of North America, from British-Columbia to California, almost everywhere common.
- whitneyi.** *M. whitneyi* *Behr.* (= *pola* *Bsd.*) (88 d) is easy to tell by the fatty or feebly silvery lustre of the outer macular row on the under surface of the hindwings; above, especially in ♂, the spots are paler fulvous. From California to Nevada.
- hoffmanni.** *M. hoffmanni* *Behr* (88 d) may be at once distinguished by having the basal half of both wings black, only slightly spotted with yellow, forming a vivid contrast with the outer half which in ♂ is almost clear fulvous, in ♀ paler. The black colour may, particularly on the hindwings, extend more or less far towards the termen, encroaching upon the fulvous colour, creating thereby a long series of greatly varying aberrations, one of which, of most curious appearance, is figured in *HOLLAND's* Butterfly-Book (Pl. 17, fig. 14); many of these
- abnormis.** have been given names, as f. i. ab. **abnormis** *Wright*, which has the forewings almost uniform rufous, thinly banded with black, the hindwings with the exception of a broad fulvous outer band almost uniformly black.
- helcita.** From the Western United States; an alpine form from the Rockies was separated under the name of **helcita** *Bsd.*
- sierra.** *M. sierra* *Wright* (88 e) recalls even more strongly than the preceding species, *M. aurinia-iberica*, having the bright brick-red ground-colour strongly interrupted by ivory-yellow macular bands and chains; the basal area of the hindwings is marked with large spots of ivory-yellow. ♀ above with alternating yellow and brick-red bands, as in *aurinia-sibirica* or *desfontainei*, but differently located. Western United States.
- gabbii.** *M. gabbii* *Behr* (= *sonorae* *Bsd.*) (88 e) resembles above somewhat the preceding, but is easy to distinguish by the lovely silvery lustre of the three pale bands of the under surface of the hindwings, very much as in the *Argynnis* species. Occurs in the Pacific States as far as Utah and Colorado.

M. harrisi Scudd. (88 e). Underside somewhat like that of *M. cinxia*, particularly on account of the *harrisi*. presubmarginal row of dots enclosing the central dots characteristic of that species. ♂ deep fulvous above, with darker markings, the terminal area nearly wholly black; both wings traversed by a band of pale rufous. ♀ lighter coloured and of rather larger size, otherwise altogether like ♂. — Caterpillar reddish-brown with black dorsal stripe, and dark rings at and behind the base of the spines, the spines themselves black. On *Diplopappus umbellatus*. Pupa pearly white, marked with black or fuscous. Found throughout the Eastern States from Canada to Illinois.

M. dymas Edw. (= *larunda* Strck.) (88 f). This species, mentioned by DYAR as *Cinclidia*, is probably *dymas*. best classed with *Phyciodes*. It closely approaches *Ph. clada* Hew. (88 f), but is lighter, pale rufous, usually very slightly marked; also the under surface shows some little difference. Southern Texas.

M. perse Edw. (88 f). Almost exactly like the preceding, also underneath, but the ground-colour deeper *perse*. golden yellow above, with the numerous dark undulate lines fine, but more sharply defined than in *dymas*. From Arizona.

M. chara Edw. (88 f). Very much like the two preceding species, of somewhat larger size, the black *chara*. undulate lines and lunules more distinct; from the costa, before its outer third, a pale oblique dash, representing the commencement of a pale yellowish-brown fascia ending at the inner margin before the anal angle. Underneath, this fascia more distinct and continuing also on the hindwing in the shape of a narrow, pale yellow band. Arizona. Like the preceding, a stunted desert-form.

M. anomala Godm. a. Salv. Of this species only one specimen seems to be known which used to be *anomala*. in the STAUDINGER Collection with which it most likely came to the Berlin Museum. In size hardly approaching *M. chara*; blackish-fuscous, forewings with a white costal semi-band and 4 white spots in the terminal area; hindwings with yellowish-brown disk and a white punctate row in the black terminal border; cell spotted with black. Underneath resembling *hepburni*, but with the ground-colour of the forewings blackish, not yellow-brown. Mexico: Colima.

M. hepburni Godm. a. Salv. Closely allied to *dymas*, but more gaudily coloured both above and beneath, *hepburni*. the ground-colour deep greyish fuscous, the discal and marginal row of spots yellow, the intermediate, sub-marginal one rufous. Under surface almost like that of a small-sized *Mel. merope* or *varia*. Chihuahua (Mexico). — The species must of course not be confounded with the Erycinid *Apodemis hepburni* which outwardly resembles a dwarf *Melitaea* and which we figure with the Erycinids on plate 142.

M. alma Strck. (88 e) equals in size the preceding species, upper surface rufous, marked with black *alma*. at apex and outer border, but lacking the numerous dark undulate cross lines which are replaced by several rather pale transverse macular bands. Under surface of hindwings yellow, with dark border and veins and a double black transverse band before the outer third.

M. thekla Edw. (88 f). Upperside likewise rufous, but the black markings heavier. On the under surface *thekla*. of the hindwings 2 curved bands of pale fulvous on ivory-yellow ground, the markings approaching those of the closely allied *Phyc. theona*. ♀ very much like ♂. Texas. — **bollii** Edw. differs from typical *thekla* only in *bollii*. having the paler median band of the upper surface of the hindwings somewhat broader, its border narrower, and its continuation upon the forewings almost completely wanting. HOLLAND, however, upon a close examination of both types, asserts that there is no possibility of sharply separating both forms. Arizona. — **definita** Aar. *definita*. likewise closely resembles *thekla*, being also found in Texas.

M. leanira Bsd. (88 f). Upper surface blackish-brown, both wings with 3 pale yellow blotches, the outer *leanira*. of which complete, the middle one interrupted on the forewings and the inner broken up in several scattering spots which may even be quite obsolete (= ab. *obsoleta* H. Edw.). The blackish ground colour is interrupted *obsoleta*. before the termen and in the discal area by redbrown spots, which produces the same pattern we find in *colon*, *taylori*, *rubicunda*; but the species is easily recognized by the shape of the wings which resemble those of *Araschnia prorsa* and many *Phyciodes*, in as much as on the forewings the termen is produced at the end of the 3. radial so as to produce a blunt angle, above which the apex appears cut off and below which the termen is slightly excavated. Also the underside differs materially. Widely distributed throughout the Western States, from British Colombia to southern California. — **leona** Wr. seems to be a form of *leanira* in which the yellow *leona*. spots above are so much reduced that the hindwings often are wholly black, with just a few ivory-white dots. — **mirabilis** Wr. is an accidental aberration having the pale spots in the outer half of the wings both above and *mirabilis*. beneath drawn out in the direction of the intranerval spaces, a phenomenon not infrequently met with in European Melitaeas (f. i. *didyma*). — **cerrita** Wr., on the other hand, is an entirely constant form in which the rufous *cerrita*. and ivory-white areas are often indistinctly separated from one another or quite feebly indicated; like the preceding, it occurs in either sex. All these forms are closely allied to *cynceas* and *theona* which are described under *Phyciodes*, another proof of how unnatural and untenable is the separation of the genera *Melitaea* and *Phyciodes*.

cremita. **M. eremita** Wright is usually much larger than *leanira*, appearing, like that species, superficially somewhat like *Araschnia prorsa*, but having the spots on the upper surface much closer and brighter. Underneath the forewings brick-red, especially in the median area very brilliantly spotted, and on the hindwing the ivory-yellow median band of spots very broad. California.

wrightii. **M. wrightii** Edw. (88 f) resembles exactly the preceding above, but the yellow-brown blotches, particularly at the base of the forewings, are larger. Underneath, however, the dark intermediate bands are almost completely wanting on the forewings, which thus represent an ivory-yellow space only interrupted by the black veins and a dark macular band. California; closely allied to *leanira*.

minuta. **M. minuta** Edw. (88 e). DYER formed of this species, together with the two following forms, the genus *Schoenis* Hbn., i. e. he only used this little group to preserve HÜBNER's name, for its oldest representative was only discovered in 1861. *minuta* is above uniformly brilliant reddish-brown, marked with rows of spots, lunules and striae of a darker colour. Beneath it so exactly resembles a small-sized, pale *didyma*, that it may be considered to be the American representative of that group and cannot possibly be mistaken for any other American

arachne. butterfly. From the Rocky Mountains. — **arachne** Edw. (88 e) seems to be founded upon the low-land form; from Texas; also Colorado. It does not differ very essentially from the main form, but both seem to gradually pass into one another; our figure (a ♀) was taken from HOLLAND, who considers *arachne* as only synonymous.

nympha. — **nympha** Edw. (88 e) is at once distinguished from the preceding by having on the upper surface of both wings a pale yellow band which gives it some similarity to certain *phoebe*-forms of Europe. Also the upper surface is more heavily marked with black. But underneath it so closely resembles certain specimens of *minuta* that its specific rights can only be established by breeding it from the larva which at present is not known. From Arizona.

The following forms are in part rather scarce or represent species or subspecies founded on single specimens, not found even in the largest collections such as those of the Washington Museum. Some seem even difficult to connect with the above described groups, and many are only known from the original descriptions; the types being destroyed, they may not be identified with certainty; others again refer to mere aberrations, only the types of which have become known.

brucei. **M. brucei** Edw. is nothing more or less than a form of *anicia* Dbl. a. Hew., established by EDWARDS in 1888, but not referred to by him later on in his "Butterflies of N. America". Also *maria* Skinn. is closely allied to *anicia* which it seems to replace in the central and western States. From Utah. The same holds good of *gilleti* Barn., described from Wyoming, but not mentioned by HOLLAND in his Work on butterflies of the United States. — **helvia** Scudd. from Alaska appears closely related to *taylori*, the type of which was destroyed in the great Chicago fire; but HOLLAND assumes that specimens having the median band on the upper surface of the hindwings less distinct, and the ground-colour paler, such as are known from White Horse and Eagle City in Alaska, belong here. — **sterope** Edw. seems to be closely related to the lost *helvia*; established in 1870 by EDWARDS, it was not mentioned in his later Work on American Diurna, no more than by HOLLAND.

neumoegeni. From Oregon. — **neumoegeni** Skinn. seems, like *maria* Skinn., to be a form of some other species, perhaps *beckeri*. **palla**, changed by the peculiar geological conditions of its home, the District of Salt Lake in Utah. — **beckeri** Godm. a. Salv. (88 h), from Northwestern Mexico, is possibly only a southern form of *hoffmanni*, which it almost exactly resembles above, but with the basal half and terminal borders darker; underneath the ivory-yellow lunular spots are not separated from the border by a rufous terminal stripe. — **schausi** Godm. a. Salv. (88 h), although allied to the preceding form, shows on both sides essential differences; especially the under surface of the hindwings has the ferruginous bands much larger, and the dark lines traversing the hindwings are approaching closely; from Paso de San Juan in Veracruz (Mexico). — **approximata** Streck. undoubtedly belongs, like the former, to the same group as *gabbii* and *hoffmanni*, being possibly intermediate between these and *beckeri*.

albiplaga. Described from Texas, but unknown to me. — **albiplaga** Char. is, like *approximata*, not represented in the collections of the National Museum in Washington; a dwarf species, resembling rather a *Phyciodes*, closely allied to *perse* and *chara*, but not so monotonous in colouring. Texas. HOLLAND does not mention this form.

4. Genus: **Phyciodes** Hbn.

This genus is distributed throughout South and Central America, with a few representatives in the United States. The greater number of species are found in Central America and in the northern part of South America. In accordance with SCHATZ and KIRBY, we unite the *Eresia* species with *Phyciodes*, since no fundamental difference exists either in structure or in the shape of the larva and chrysalis, not even in the most extreme forms. Indeed it cannot be sharply separated even from *Melitaea*, which it completely resembles in the shape of both caterpillar and chrysalis. The less well known forms may be easily recognized as *Phyciodes* by the open cell in the hindwings.

To *Phyciodes* in our sense, there belong about 160 species, of which those that resemble *Melitaea* frequent, like these, flowery, open meadows, whereas the mimetic forms prefer the woods. Our figures show the enormous diversity of species, a large number of which represent the best known examples of Mimicry. The *Melitaea*-like species are, however, connected with the so-called mimetic ones by all kinds of intermediate forms, which, although differing quite considerably from typical *Melitaea*, cannot be considered as mimics either; for which reason it is not possible to separate the species into regular groups, whereas they furnish an excellent means for gaining an insight into the phenomenon of mimicry by showing the manner in which ordinary, plain forms have been changed into mimetic ones. Thus we are justified in considering *Phyciodes* as one of the most interesting lepidopterous genera. The respective similarity of the mimetic forms to species of some other family will appear in the descriptions of the different species. The caterpillars, as far as known, were found on Compositae, f. i. *Diclipa* and *Actinomeris*.

Ph. liriopae. Of this species we know quite a number of local forms, some of which cannot be sharply separated. — **liriopae** Cr. (= *morpheus* F.) (89 a), from the Amazon; is the most gaudily marked form. Ground-colour deep brownish-yellow, on the upper surface of the forewings the subapical band well developed, on the hindwings, outside of the broadly blackish-fuscous border, a narrow submarginal band and, in addition a series of spots which in ♂ is partly obliterated. — **lirina** Stgr. i. l., from Bolivia, is a dwarf form distinguished by the dark terminal markings both above and beneath. — **claudina** Esch. (89 a), from southern Brazil and Argentina has fewer, but more sharply defined markings, in ♂ the subapical band on the forewings often quite rudimentary; both sexes lack on the hindwing the third dark macular band, and in the ♂ the submarginal band is frequently only just indicated. — **flavia** Godt. (89 a), from *Chiriqui*, is even less marked than *claudina*, having in particular the subapical band on the forewings reduced or only indicated by a few spots. — A somewhat more strongly marked form, of paler ground-colour, is **flavina** Stgr. i. l. (89 a) from Peru. — **fragilis** Bates (89 a), from Cayenne, is characterized by the broad, dark borders of both wings, outside of which the markings are greatly reduced, especially also on the underside. — **guatemala** Bates (89 b), from Guatemala and Honduras, has the markings of the upper surface very much reduced and faded, those of the under surface quite insignificant. — **pastazena** Bates (89 b), from Ecuador. Ground-colour deep brownish-yellow; upper surface almost devoid of all markings, with the exception of a narrow terminal border. Under surface pale, but sharply marked. — **anieta** Hew. (89 b), from Venezuela, has the marginal and subapical markings very distinct, but aside from these the upperside quite unmarked. Underneath the ground-colour yellowish, with pale brownish markings. — **orobia** Hew. (89 b) from southern Brazil and Argentina has the outer area of the forewings heavily marked, otherwise quite monotonous. Probably *anieta* or *orobia* is identical with the following *thymetus*. — Larva bluish greenish-black, with a pale lateral stripe; venter greenish-yellow, head brown-yellow striped with black. Lives gregariously on *Cyrtanthera*, when young on the underside of the leaves, of which it only gnaws the epidermis. According to Dr. SEITZ, the South-Brazilian form flies throughout the year, and is exceedingly common; pupa very much like that of *Araschnia prorsa*, brownish-grey with violet lustre, very prominent dorsal projections, and short, partly silvered points at the back. Imago flies on forest-roads and in gardens, is very common wherever it occurs, and has the jerking, swimming flight of our *Araschnia levana*.

Ph. cluvia Salv. a. Godm. closely approaches *anieta*, but the forewings are much more broadly black at the base; under surface much darker, forewings with 2 ochreous spots, a larger one near the median nervule, the other in the shape of a postdiscal band. A mountain form from Guatemala, occurring at altitudes of from 4—6000 ft.

Ph. thymetus F. The original description of this species reads: "Wings complete (i. e. with smooth margins), yellow, with brown outer border. Habitat unknown". Dr. A. G. BUTLER remarks in his "Catalogue of Diurnal Lepidoptera described by FABRICIUS in 1869" that this species is well figured in JONES' unpublished "Icones", without, however, giving any further description. From the author's entirely insufficient description it appears to be some feebly marked form of *liriopae*. KIRBY's Catalogue mentions Brazil as its home.

Ph. amazonica Bates (89 b) from the Amazon has the wings much more rounded, both wings broadly bordered with blackish-fuscous above, with 5, partly incomplete rows of black spots on pale brown ground. Under surface greyish-yellow, with deep black, pale margined rows of spots.

Ph. ursula Stgr. (89 c), from Bolivia, is a small-sized, brown-yellow species, marked with a delicate network of black lines on the forewings above, from which the black subapical band stands forth very clearly. The ♀ has the black markings much broader. On the yellowish, sparingly brown-marked under surface of the hindwings a very distinct brown median longitudinal stripe.

Ph. nycteis Dbl. a. Hew. (89 c) is found in the United States of North America, from Maine to North Carolina, and westwards to the foot of the Rockies; it is the largest among its near allies. — Egg half as high as broad, with 16 or 17 vertical stripes above, forming at the middle hexagonal figures; its colour is green. The caterpillars undergoes 4 moults. Full-grown it is velvety black, with a dark orange streak along

the back and purple ones at the sides. Its body is marked with whitish spots, each of which gives rise to a delicate black hair, and with rather short black bristle-like spines. Pupa pearly grey, spotted with dark brown. — *pascoensis*. WRIGHT also mentions a form *pascoensis* from the west-coast of North America, distinguished by weaker dark markings and paler under surface. It is, however, doubtful whether it belongs to *nycteis*.

ismeria. **Ph. ismeria** Bsd. a. Lec. (= *carlota* Reak.) (89 c) ranges from Canada to the southern States, and westward to the Rockies. It is easily recognized by the most curiously marked under surface of the hindwings. ♀ resembles ♂, but larger and paler in colour. Larva yellowish, with blackish spines and 3 blackish longitudinal stripes. Head, legs and venter black, prolegs yellow. Pupa light grey with pale spots and short white lateral humps; lives on *Helianthus* and *Actimeris*. — Mr. CHAS. D. A. COCKERELL (Boulder, Col.) kindly sent us an exact description of the caterpillar (of *P. carlota*). The food-plant was *Helianthus annuus*. Of the caterpillar two different forms are known: 1. with a row of large, nearly square, orange dorsal spots, the subdorsal portion black, mottled with cream-white; sides paler, with a broadly reddish band; stigmata contained in elongate, angular, greyish-black, white centred spots; underside darker, with the dorsal and subdorsal spines black, the lateral ones pale; head glossy black. The other form is altogether orange-red, with black spines and dull subdorsal and lateral stripes, the latter directly above the base of the feet; head glossy black. Imago appears in the first days of September.

vesta. **Ph. vesta** Edw. (89 c), from Texas and Mexico, closely resembles a small-sized *Melitaea*. ♀ like ♂, but paler in colour.

graphica. **Ph. grafica** Fldr., from Mexico (Huahuapan, September), is described by its author as follows: "Al-
lied to *pallescentis*, but the wings broader; forewings shorter, the apex less produced; ground-colour above blackish-fuscous, both sexes with a great number of basal spots, in the cell 2 small bands, the first one enclosing two inner spots, followed beyond the cell by 2 interrupted macular bands (the outer one dusted with ochreous-brown containing 6 irregularly arranged outer spots several of which dusted with ochreous-yellow) and submarginal lunules, the 5. of which, placed between 2. and 3. median, unusually small, obsolete in ♂, more or less dusted with ochre-yellow. Hindwing with a rather large blotch in the outer half of the cell, 2 discal bands much broader in ♀ than in ♂, the 3. outer band composed of distinctly separated, black centred lunules, in another ♀ specimen these are dusted with yellowish-brown before the termen; otherwise somewhat resembling *pallescentis*, but with the discal band ochreous-yellow, edged anteriorly on the inside by very narrow blackish spots. Under surface of the hindwings broadly clouded with fulvous behind the cell and at termen; base, the spaces between the discal bands, apex of wings and space between 2. and 3. median dusted with whitish at the edge. — According to SALVIN and GODMAN this form is completely identical with *vesta*.

phaon. **Ph. phaon** Edw. (89 c) is one of the smallest species of this group. ♀ like ♂. Found in the Gulf States of North America, occasionally met with also in Kansas.

tharos. **Ph. tharos** Dru. (= *pulchella* Bsd., *morphea* Cr., *tharossa* Godt.) (89 d), the "Pearly crescent spot" of the Americans, ranges from southern Labrador to Florida and throughout the entire United States, with the exception of the Pacific Coast of California. It is very common. *marcia* Edw. (= *packardii* Saund.) has the ground colour rather paler, with less dark markings. — *morpheus* F. (= *cocyta* Cr. *pharos* Harr.) is only a summer form of *tharos*. — Egg pale greenish-yellow. Larva on various compositae, particularly Asters. Dark brown after the third moult, dotted with yellow on the back, with short black bristly spines with yellow base. Pupa grey-white with dark spots and lines. — *pedrona* Moulton, from Brazil (Minas Geraes) I consider as a separate species; differs from *tharos* in the smaller size, the smaller dark spots on the upper surface of the hindwings, and the lack of some of the dark basal spots on the same wing. Forewings with 5 instead of 6 submarginal spots, arranged in an irregular row; moreover the pale oblique stripe above the cell and the broken line at the inner margin as well as the 3 darkest spots on the under surface of the forewings are lacking, only a brown submedian mark being visible.

batesi. **Ph. batesi** Reak. (89 d). "BATES' Crescent spot" occurs from New York to Virginia and westwards to Ohio. ♀ resembles ♂; the earlier stages not known.

pratensis. **Ph. pratensis** Behr (= *epula* Bsd.) (89 d) from California closely resembles *Melitaea*. ♂ rather gaudily coloured, ♀ large, pale rufous, with uniform markings. Under surface marked with paler tints.

thebais. **Ph. thebais** Godm. a. Salv., distributed from Mexico to Guatemala, differs from the following *orseis* in having the upperside spotted with pale instead of reddish-yellow, and in the hindwings lacking almost every vestige of rufous colouring.

orseis. **Ph. orseis** Edw. (89 d) is found from Washington to Mexico. ♀ very much like ♂, but with all the dark markings larger, the light ones still paler. The earlier stages remain to be worked out.

Ph. camillus *Edw.* (89 d) "Camillus Crescent-spot" of the Americans, ranges from British Colombia *camillus* as far as Colorado, Montana, Kansas and Texas. Under surface quite monotonous, but the hindwings peculiarly marked with distinct fulvous lines and dots. Early stages unknown. The paler or darker forms which have repeatedly been named (*emissa*, *pallida* *Edw.*, *mita* *Reak.*) are no local forms, being not restricted to any particular locality.

Ph. mylitta *Edw.* (= *collina* *Behr*, *callina* *Bsd.*, *epula* *Bsd.*) (89 e) occurs from Washington to Arizona, *mylitta*, eastwards as far as Colorado. ♀ like ♂, but lighter in shade. The eggs are deposited in bunches on thistles. After the 4. moult, the larva is black, yellowish beneath, with a dull yellow, narrow dorsal line and similar lateral lines. The black spines are arranged in 6 rows, those of the 4.—6. segment yellow. Pupa deep wood-brown. Larva on various species of thistle.

Ph. barnesi *Skinn.* (89 e), from Colorado, is larger than *mylitta*, with the forewings narrower and smooth-edged, and the markings of the upper surface greatly reduced. *barnesi*.

Ph. montana *Behr* (89 e), from the mountains of California and Nevada, is more heavily marked *montana*, than *camillus*, with the ground-colour chiefly brilliant fulvous. The colouring of the ♀ is more dusky, but is interrupted by a pale median macular band on the upper surface of the hindwings. The earlier stages unknown.

Ph. picta *Edw.* (= *canace* *Edw.*) (89 e) from Nebraska, Colorado, New Mexico and Mexico, is one *picta*, of the smallest and most gaudily coloured species of this group. Underside of hindwings very light and slightly marked. Egg yellowish-green. — The caterpillar undergoes 5 moults; full-grown it has 7 main rows of short spines, which in the different broods have a different colour, pale brown in the June brood, greenish-yellow in October. The prevalent colour is yellowish or greenish brown, with darker or lighter spots. Pupa yellowish-brown. Larva on various species of Asters.

Ph. frisia *Poey* (= *gyges* *Hew.*) (89 e) from the Antilles, Mexico, Central and South America and *frisia*, Florida, is presumably a form of *tharos* or some other closely allied species. Large-sized, with pale markings both above and beneath. Earlier stages unknown.

Ph. boucardi *Godm. a. Salv.* (89 e), from Mexico (Guerrero, October), probably is a subspecies of some *boucardi*, North American species. ♀ not known.

Ph. saladillensis *Giacom.* (89 f), from the Argentine Republic, was only discovered two years ago; *saladillensis*, common in the hills around Saladillo and Sa. Cruz. Underneath the forewings resemble *tharos*, but the ground-colour is lighter, with a striking median band of pale yellow spots. Under surface of hindwings pale yellow with a few brownish striae and the typical terminal spots. ♀, according to a picture sent by the author for our use, much larger; hindwings very slightly marked in the inner half. Underneath the hindwings have a reddish transverse band.

Also **Ph. simois** *Hew.* (89 f), from Brazil and Argentina, belongs to the *tharos*-group. It is of small size, *simois*, with the black markings of the forewings partially united to larger blotches; underside nearly unmarked.

Ph. elada *Hew.* (89 f), from Mexico, one of the smallest species of the genus, shows above a network *elada*, of black and yellow; ♀ has the middle row of pale spots almost white. Underneath marked like typical *Melitaea*. — **socia** *Fldr.*, if not synonymous with *elada*, is surely only a seasonal form, but slightly differing in the markings. *socia*.

Ph. imitata *Streck.* (= *ulrica* *Edw.*) differs from *elada* in the black basal spots on the hindwings beneath. *imitata*, Texas to North Mexico.

Ph. variegata *spec. nov.* (89 f), from Uruguay (1 ♀) is a dwarf species; forewings marked with black *variegata*, and white on yellow ground, hindwings with black only. The markings of the under surface greatly resemble those of the upper surface, but the hindwings have a median row of white spots, and a few white spots on the outer margin.

Ph. pallescens *Fldr.* (89 f), from Mexico, of which we figure the type, would seem to be the ♂ of *pallescens*, *variegata*, if the localities where they were found, were not too far apart. Underneath it resembles *tharos*, but the colouring, especially of the hindwings, very pale, with slight markings.

Ph. pelops *Dru.* (= *anocaona* *H.-Schäff.*) (89 f), from Jamaica, St. Domingo and Porto Rico, is the *pelops*, smallest species of the genus; the wings unusually broad, yellowish-brown above, with black markings. Under surface of forewings pale yellow-brown, marked with black; hindwings greyish-fuscous, paler at the base, with delicate blackish-brown markings and a submarginal row of white ocelli. — **aegon** *F.* of Jamaica has the wings *aegon*, smooth margined, black-brown above, with several irregular yellowish-brown macular rows. Hindwings ashy

grey underneath. — Only known to me from the original description. According to BUTLER a local form of *pelops*.

- fasciata*. **Ph. fasciata** *Hpffr.* (= *pearcei* *Druce*) (89 f), from Peru, is distinguished by the broad yellow band on the upper surface of the hindwings. The forewings are yellowish brown, with a rich network of black lines. Hindwings with blackish-fuscous base and termen, the latter enclosing 2 yellow lines. Underside yellow, with faint yellowish markings. — **fasciatella** *subsp. nov.* from Huancabamba (1500 m) has the median band narrower and on the hindwings only one yellow terminal line.
- theona*. **Ph. theona** *Mén.* (89 g), from the southern States of North America, Mexico, Honduras and Nicaragua resembles above *Melitaea*, but differs underneath in the regular, sharply defined bands. — **perlula** *Fldr.* (= *hondana* *Weym.*) (89 g), from Venezuela has the markings quite indistinct above, and underneath the brown subbasal band of the hindwings reduced to a large spot. The forewings lack underneath the black median marks. — **yorita** *Reak.* (89 g), from Honduras, is intermediate between *theona* and *perlula*. — **ezra** *Hew.* (89 g) has the pale, often quite white spots on the upper surface of the forewings produced and the reddish brown bands on the underside less brilliant. Chiriqui (Panama).
- cyneas*. **Ph. cyneas** *Godm. a. Salv.* (89 g, h), from Arizona. Ground-colour above yellowish-brown to blackish-grey, with 2 rows of light spots greatly varying in size. ♀ of a lovely fulvous tint, with the outer band of pale spots bordered with black on the outside. Under surface of forewings fulvous, with pale, black-margined spots; hindwings whitish-yellow, the black nervules, the deep black termen and double black median band forming a sharp contrast.
- cynisca*. **Ph. cynisca** *Godm. a. Salv.* (88 h), from Mexico, is closely allied to *cyneas*. Upper surface without any ferruginous spots on the hindwings, the yellow band enclosing the apex of the cell much broader, forewings with rufous spots at base and along termen underneath.
- taeniata*. **Ph. taeniata** *spec. nov.* (89 h) from Tarapoto resembles on the upper surface of the forewings *ursula*, differing, however, in the heavy markings of the hindwings above. Underside yellowish, feebly marked with pale fuscous, from which on the forewings the blackish-brown double band, in the middle confluent, placed near the termen, stands forth very clearly.
- teletusa*. **Ph. teletusa** *Godt.* (89 h), from Brazil, has brownish-yellow markings on blackish-brown ground, namely a large spot in the outer half of the forewings reaching the inner margin, a subapical band divided by a dark streak, a minute spot at the apex of the middle cell and a few small apical dots on the forewings, on the hindwings a median band, tapering towards the inner margin, and a submarginal band composed of fine lunules. The colour of the under surface is yellowish, with brownish, resp. greyish-black markings, strongly contrasting with a submarginal row of ocelli appearing on the hindwings. — **peruana** *subsp. nov.* (89 h), from Peru, has the brownish-yellow markings of the upper surface greatly enlarged, the underside, however, much more monotonous. — In **boliviana** *subsp. nov.*, from Bolivia, the pale markings are, especially on the hindwings, greatly reduced, and the under surface is more heavily marked than in *peruana*.
- burchelli*. **Ph. burchelli** *Moulton* has a very wide range, since it is found, according to its author, in the province of Goyaz, in Chapala, South Brazil, Peru, Ecuador and in Nauta on the Upper Amazon. From the very lengthy description it appears to resemble *teletusa*; the broad yellow median band on the forewings has about the same shape, the forewing has at the termen between submedian and third median 3 yellow spots, and the yellow band displays on its outer extremity some lunules of the ground-colour, both on the fore and hindwings.
- poltis*. **Ph. poltis** *Godm. a. Salv.* (88 i), from Mexico, comes closest to *orthia* from Brazil and Paraguay.
- orthia*. **Ph. orthia** *Hew.* (89 h) resembles *velica*, but has the forewings more elongate and all the light markings of the upperside much narrower. Also beneath it is like *velica*; possibly both belong to one and the same species. Some specimens have the pale markings almost white, with all detail obliterated: = ab. **evanescens** n.
- berenice*. **Ph. berenice** *Fldr.* (89 i), from Peru, advertised by STAUDINGER under the name of *telemachus* i. l., greatly resembles *orthia*, but differing in the presence on the hindwing of a yellow submarginal line, very distinct especially in ♀, in addition to the submarginal row of lunules. Underside much more yellowish, but hardly differing from *orthia* in the markings.
- sejona*. **Ph. sejona** *Schaus* (89 i), from southern Brazil (f. i. St. Catharina and Rio grande do Sul), is much lighter coloured than *orthia*, from which it also deviates in the markings
- velica*. **Ph. velica** *Hew.*, habitat unknown, has, judging from the figure supplied by the author, the brown spots on the upper surface much larger, being therefore much lighter than **dictynna** *subsp. nov.* (89 k) from

South Brazil and Argentina which closely resembles above the Palearctic *Melitaea* bearing the same name; Prof. Dr. SEITZ who frequently captured this species in the Gardens of Agriculture at Palermo in Argentina, reports that it also possesses the low, jerking and whirring flight of that species.

Ph. geminia *Hpf.* (89 i), from Peru, has a blackish-brown upperside, with a white subapical band *geminia*. on the forewing, in which the posterior spot stands by itself; on the hindwings 3 yellowish submarginal lines. Underneath the forewings are as above, but lighter, the hindwings with the usual brown markings on a greyish-white ground. — **nana** *Druce* (89 i), likewise from Peru, has the white band on the upper surface of the forewings complete, the underside more yellowish *nana*.

Ph. jana *Fldr.* As no specimens are available, I just give the original description: "Bogota (Colombia)". ♂ deep fuscous, forewings with an oblique, shortened, excavated median band of dark brown, hindwings with 2 indistinctly mottled, and a third indistinctly undulate parallel stripe of ochreous brown. Forewings dark brown underneath, with the basal third, a spot at apex and on inner margin ochre-yellow, indistinctly margined with black, and with 2 rows of brilliant bluish-white subapical lunules, hindwings ochre-yellow, shaded with dark brown on the outer subcostal, the small basal and discocellular fasciae as well as 2 other bands confluent at the middle bluish-white, followed by rows of curved spots margined with reddish-brown, and a few slightly silvered, confluent submarginal spots, edged with bluish-white and outwardly ringed with black. In size it approaches *hera* *Hbn.* Forewings not angular, hindwings short along the inner margin, but elongate at the costa". — Seems to be closely related to *elaphiaea*. *jana*.

Ph. carigia *Schaus* from Colombia is described by the author as follows: "Forewings: Basal half deep brown with black basal fascia and a double, black, inwardly oblique, undulate line, an oblique ochre-yellow spot at the apex of the cell, margined with black; outer half black, spotted with ochreous, a large spot starting from vein 3, a trifle beyond 2; an oblique row of spots from costa to 4, a large subterminal spot before the inner margin, another, minute, between 4 and 5, and a third, small, curved spot at the costal margin, an irregular terminal line interrupted by the veins and enlarged between 3 and 4, obsolete between 5 and 6. Hindwing: Cell and the space beyond heavily brown, costa and terminal margin black, a broad ochre-yellow median band beyond 7; inner margin brown dusted with yellow, an ochreous outer line from inner margin to 4, followed by a similar marginal line from anal angle to apex. Under surface: On the forewings the spots yellowish-white and larger, terminal border deep reddish-brown, crossed by a fine dark line, slightly grey at apex; basal half yellowish-white, with a large, irregularly ring-shaped mark, at inner margin and between the large spots black. Hindwings: Basal half whitish, with large buff blotches margined with reddish-brown; a brown median line, followed at the costa by a small dark area; a reddish-white space between 2 and 6, terminal border broadly grey, mottled with fulvous, the extreme border reddish-brown, with a dark double marginal row of lunules. Size as that of *sejona*". *carigia*.

Ph. elaphiaea *Hew.* (89 i), from Ecuador and Peru, is above blackish-brown; forewings with a brownish-yellow median band widening towards the termen. Hindwings dusted with yellow, with 3 yellowish submarginal lines. Underside of forewings like upper surface, but with the dark markings paler; hindwings dirty yellow, with 6 rows of pale, brown edged lunules. — **elaphina** *Stgr.* i. l. (89 i), from Bolivia, has on the forewings the median band lighter, on the hindwings the lines more distinct and reddish. Underside paler. — **abrupta** *subsp. nov.* (89 i) is of smaller size; forewing with the median band much narrower and appearing as if torn off between 1. and 2. median, accompanied by a prominent small round spot of similar colour. On the forewing in addition a yellowish subapical spot, and the underside much paler. *elaphiaea*. *elaphina*. *abrupta*.

Ph. nussia *Druce*, from Peru, is about as large as *erithona*; upper surface dark brown, forewing with a white subapical spot and, near the inner margin, a submarginal one of equal size. Hindwings dusted with yellow, with the termen dentate and marked with 3 ochreous stripes. Underside as in *nana*. *nussia*.

Ph. nazaria *Fldr.* (= *mazaria* *Ky.*). Of this species we only can give a translation of the original description, as follows: "Bogota. ♂ wings blackish-brown above, with the base dark and very faintly marked; In the cell of the forewing a spot; small subapical bands followed by 3 spots, the inner broad and excavated, ending at the costa, with a distal spot close by. Hindwing with a broad band, frayed out at the middle, divided by dark brown scales on the outside, inside with 2 fine stripes outside of the cell, and, joining them posteriorly, very long, darkbrown lunules. Under surface ochreous brown, surrounded distally by similar submarginal lunules; forewings with broad pale bands and spots, margined distally by a blackish border, with a small pale basal band in the cell; hindwings with basal rings and stripes, partially confluent; in the middle a curved streak from which another, quite faint shadowy stripe of dark brown goes to the costal area; in addition some minute blackish-brown lunules, and before the fringe an undulate slightly silvered stripe. Belongs *nazaria*.

to the *thymetus* group, the forewings being slightly curved below the apex, the hindwings nearly angular at the middle termen".

otanes. **Ph. otanes** Hew. (88 h), from Guatemala resembles *crithona* both in size and shape of wings. ♂ forewings dark brown above, with a small fulvous spot at the apex; hindwings faintly purplish, only the termen tinged like the forewings. Underside of forewings fulvous, paler at base, with some black spots, one at costa, a triangular one at apex, and a third one reddish-white at termen. Hindwing grey and fulvous, with a few large fulvous spots.

cyno. **P. cyno** Salv. a. Godm. Like *otanes*, but the forewings with larger discal spots above, underneath almost unicolorous all but the apex; hindwings more grey, with the spots as in *otanes*, though less distinct. Mexico.

sopolis. **Ph. sopolis** Godm. a. Salv. (88 i), from Guatemala, is closely related to *otanes*, differing chiefly in the very pregnant spotting of the forewings. The description reads: "♂ like *otanes* ♂, but the forewings spotted with yellow. ♀ like ♂, but resembling in the spots on the forewing *ptolyca*; hindwings suffused with rufous above".

aceta. **Ph. aceta** Hew., from Colombia, resembles a small-sized *Eresia*. Upper surface deep brown, the forewings indistinctly spotted with fulvous near base, and with 2 similar spots in middle. On both wings a band of rufous ocelli centred with dark brown, followed by a row of similar lunules, and preceded on the forewings by 2 larger spots of fulvous divided by the nervules. Underside yellowish-grey, with similar, although more faded markings as above. — **delphia** Fldr. (89 k), likewise from Colombia; our figure was taken from the type kindly lent us by Dr. K. JORDAN. *delphia* must be considered to be the typical form, differing from HEWITSON'S *aceta* by having the markings of the upper side reduced, and the ground-colour beneath paler, more yellow.

acesas. **Ph. acesas** Hew. (= *sydra* Reak.), from Venezuela. A rather large species, with moderately excavated termen of forewings. Upper surface dark brown, with larger pale spots at middle, and a submarginal row of dark yellow spots on the forewings. Hindwings with 3 rows of deep yellow spots and 2 obsolete, similar streaks near base. Under surface with a large spot at base, two smaller ones in middle and an orange spot at termen; apex grey with a white lunule. Hindwings grey and fulvous, with paler spots and lunules and a submarginal row of brownish crescents.

ezba. **Ph. ezba** Hew., from Colombia, is, according to the author, closely allied to *acesas* and *abas*. Described as follows: ♂ dark brown, forewings with a spot in the middle cell, a macular median band, a few spots near the apex and an undulate submarginal band fulvous, the apical spots white. Hindwings from base to beyond middle paler, with 2 terminal rows of lunules. Underside of forewings brownish-red, darker towards the termen, with 1 spot in cell, a band below the median nervure, a macular band beyond the middle, composed of a large triangular spot and 3 round ones the last of which is black; the posterior part of the termen yellow; at the apex 2 larger white spots; along the termen a black undulate line. Hindwings pale reddish-grey from base to middle, with 2 basal lunules, and beyond the middle a pale yellow band, followed by 4 black dots and a submarginal row of white lunules.

crithona. **Ph. crithona** Salv. (89 k), from Chiriqui, closely resembles *elaphiaea*, but with the termen of the forewings more sharply dentate; the upper side of both wings marked with fulvous at base, on the hindwings the 3 yellowish lines farther apart. Also beneath it resembles *elaphiaea*, but with an unusually large yellow spot in the middle of the hindwings. — **stenotaenia** subsp. nov. (89 k). From Juan Vinas. Of this form we know a ♀ taken in February. On the forewing the band much lighter, broader in front, although not reaching the termen, but suddenly breaking off at the 3. median nervule and continuing, gradually getting thinner, almost to the submedian. At the apex a few white dots. The yellow spot between 3. median and lower radial isolated, at the apex of the cell 2 yellow dots, and the yellow spot at the inner angle greatly reduced. Hindwings with only one yellowish submarginal line. Underside lighter than in *crithona*, with the markings corresponding to those of the upper surface.

verena. **Ph. verena** Hew. (90 a), from Bolivia and Peru, resembles *crithona* in size and shape, also in colouring, but has on the forewings a yellowish-brown band, growing broader posteriorly and reaching the inner margin, its continuation on the hindwings taking up about one third of the wing, in consequence of which the hindwings appear largely yellowish-brown. At the termen of the forewings, and the base of both wings yellowish-brown spots, and a black submarginal line before the black border of the hindwings. Underside of forewings yellow, spotted with brown and streaked with black; hindwings with a broad, pale yellow median band, reddish-grey base streaked with brown, and brown termen, containing 2 dark undulate lines.

levana. **Ph. levana** sp. nov. (88 h), from Costa Rica (Orosi 3800 ft., collection of A. H. FASSL). Wings rather elongate. Underside of forewings yellow, with brownish base and a large spot at the apex of the cell; se-

veral white spots before the apex, termen brownish. Underside pale yellow, with the usual *Phyciodes*-pattern somewhat obsolete.

Ph. diallus *Godm. a. Salv.* (90 a), from Guatemala, has nearly the same shape as *fulviplaga*. Upper surface blackish-fuscous, with few yellowish marks in the middle of forewing and at the outer margin of hindwing. Under surface: Forewing greyish brown, with yellowish terminal spots, hindwing yellowish-grey, with the usual *Phyciodes* markings.

Ph. chromis *Godm. a. Salv.* is possibly only a form of *diallus*, from which it does not differ at all in ♂, *chromis*, whereas the ♀ has the spots on the forewing paler than typical *diallus*. Panama.

Ph. cassiopea *Godm. a. Salv.* (90 a) has the upper surface blackish brown, with blurred yellowish markings. Hindwings with a yellow submarginal line and an incomplete row of black, yellow margined ocelli. Underneath the forewings are greyish-brown, with yellowish spots at termen, the hindwings yellowish-grey, marked with brown. Costa Rica. — **obscurata** *Fldr.* (90 a), from Mexico, the typical form, the type of *obscurata*, which was lent by Dr. K. JORDAN, is rather smaller, the white subapical dots are absent, and the underside is paler and more devoid of markings.

Ph. fulviplaga *Btlr.* (90 a), from Costa Rica and Chiriqui is distinguished by the unusually broad wings. Upper surface black-brown, with a more or less extensive subapical blotch of brownish-yellow and several similar spots at the termen. The forewings are blackish-brown beneath, with the same brown-yellow subapical spot and yellow termen as above. Underside of hindwings mottled with brown and reddish on a yellowish ground.

Ph. niveonotis *Btlr. a. Druce* (90 a), from Costa Rica resembles *drusinilla*, but has the markings of the *niveonotis*. upper surface very feebly yellowish, almost white, and the ground-colour of the underside whitish.

Ph. drusinilla *Stgr. i. l.* (90 a), from Argentina, has the upper surface blackish fuscous, with a large yellow discal spot and 2 small subapical spots on the forewings, and a yellow median band on the hindwings. Under surface dirty yellow, with broadly blackish costal margin and black subapical band on the forewings, and the markings of the hindwings brownish as usual, but almost obsolete.

Ph. subconcolor *spec. nov.* (90 b), from Arizona, has numerous obsolete yellowish-brown spots on brownish-black ground. Underneath the basal area of the forewings dirty yellowish, with black stripes, the outer area marked as above. Underside of hindwings reddish-white along costa, in the posterior half brownish-grey, with brown markings, particularly a large spot near costa and a smaller one in the middle.

Ph. ptolyca *Bates* (90 b), from Guatemala and Venezuela has the markings of the upper surface broader than in *minima*, varying from darker to lighter. Under surface marked with fuscous on whitish or yellowish ground.

Ph. faustus *Godm. a. Salv.* Very much like *ptolyca*, but the spots on the forewings are different; The lower of the two central ones larger, almost round; two others before the apex, the lower of which minute, the upper elongate. Median band of hindwings coherent, the submarginal band obsolete. Panama: Chiriqui.

Ph. phlegias *Godm. a. Salv.* (90 b as *platytania*), likewise resembles *ptolyca*, but has the outer margin more deeply excavated, the spots larger, brilliant rufous, on the hindwings a brilliant ochreous yellow median band, growing broader towards the apex, tapering towards the inner margin. Honduras.

Ph. drusilla *Fldr.*, from Venezuela and Colombia, resembles *orthia* above, but has the forewings even more profusely spotted with yellow, and on the hindwings 2 yellow submarginal lines. Under surface more richly marked, but with the terminal eye-spots on the hindwings only just indicated. ♀ above marked with pale yellow, almost white. — Whether **albofascia** *nov. form.* (90 b), from Guatemala, of which we figure the ♀, is a form of *drusilla* or a species of its own, cannot be decided, until further material is available. It lacks on the hindwings the median band which is only indicated by a pale, obsolete line; forewings with a broad white fascia extending to beyond the 1. median. Under surface paler than that of *drusilla* ♀, otherwise hardly different.

Ph. tucis *Bates* (= *punctata* *Edw.*) (90 b, c), from Guatemala, Panama and the southern United States, is distinguished by the sexes greatly differing in size, the ♂ being very much smaller than the ♀. Upper side likewise blackish fuscous, with pale yellow markings, especially a very prominent median band on the hindwings. Underneath both wings with yellowish base.

- flavimacula*. **Ph. flavimacula** *spec. nov.* (90 c), from the Cauca Valley (Colombia) has the upper surface blackish-brown, marked with fulvous in ♂ and with pale yellow in ♀. Underneath the markings of the forewings are as above, hindwings marked with the usual *Phyciodes* pattern on yellowish ground. — **conflua** *subsp. nov.*, from Peru (Chanchamayo) is somewhat smaller, with the yellow median bands broader, that of the forewing coherent. Under surface rather grey than yellow forewings with a complete yellow median band.
- stesilea*. **Ph. stesilea** *Bates*, from the interior of Guatemala, resembles *tuleis* in size and shape as well as in the colour of the upper surface. Only the ♀ has been described which the author inclined to regard as the ♀ of *tuleis*, but desisted on account of the larger size and the markings of the under surface. Hindwings beneath a rusty yellowish brown, with darker, oblique undulate lines, a broad ashy-grey basal stripe and a fine, dark, undulate submarginal line.
- dracaena*. **Ph. dracaena** *Fldr.* (90 c). Our figure was taken from the type. Under surface: Forewings much paler than above, with the light spots larger, nearly white; hindwings smoky grey, with faded, pale broad median band, but the other markings reduced.
- brancodia*. **Ph. brancodia** *Schaus*, from South Brazil (São Paulo) I only know from the description: "Wings brown, sprinkled with fulvous scales at base, forewings spotted with pale fawn-colour. A small discal spot in the cell, a much larger one at its apex, and behind each of these above the submedian another spot; a red-brown stripe on the discocellulars, 4 spots between vein 4 and submedian, the two posterior ones smallest; two others before the inner margin, before and behind vein 2; 2 subterminal spots between 4 and 6, a minute one at the costal margin and a marginal spot between 3 and 4. Hindwing: A basal spot at the costa, one in the cell followed by another one, a large spot at the apex of the cell followed by a fulvous lunule, 4 small spots between vein 4 and costal margin, a broad band from near inner margin to vein 7, intersected by the nervules and followed by a dark irregular line which likewise is intersected by the veins, and a row of lunules; fringe white, spotted with brown at the veins. Underside: Basal half of forewings whitish, crossed by a broad inner and median band of yellow partially edged with fuscous, outer half black, the spots as above, but larger and white; between vein 2 and 4 a pale space, a few bluish and brownish spots at the apex, and a fine, dark, undulate terminal line. Hindwings dusted with whitish fulvous, a double inner undulate and reddish brown double fine outer line, above which a brown spot at the costal margin; a small brown spot above the cell, subterminal black spots between vein 2 and 5 which may, however, be also fulvous, a double lunular terminal line, partly bluish and shaded with pale brown. Allied to *tuleis* *Bates*". About as large as *sejona*.
- alexon*. **Ph. alexon** *Godm. a. Salv.* resembles somewhat *aequatorialis*, having the spots arranged in similar manner, but those in the median area of the forewings partly orange-brown instead of ivory-yellow, on the hindwing the basal spots, in ♀ also the terminal ones, dull orange. Underneath like *Ph. nebulosa*. Mexico (Sierra madre del Sur).
- aequatorialis*. **Ph. aequatorialis** *Stgr. i. l.* (90 c), from Ecuador, is distinguished above by numerous yellowish spots partially united into bands, on black-brown ground. The colour of the under surface is yellowish, the markings like those of the upper surface, only the *Phyciodes* pattern at the outer margin of the hindwings excepted. — **gisela** *Stgr. i. l.* from Brazil (Matto Grosso), differs in having the ground-colour darker, the yellowish spots being absent.
- texana*. **Ph. texana** *Edw.* (= *smerdis* *Hew.*, *cineta* *Edw.*) (90 c), from Texas and Mexico. Upper surface delicately marked with white, both wings with brown basal spots, occasionally almost obsolete. Under surface of forewings in the inner half brilliant yellowish-brown, hindwings traversed by a white median band, forewings with an angled postmedian row of white spots.
- sitalces*. **Ph. sitalces** *Godm. a. Salv.* (88 i), from Guatemala, resembles *texana*, but has the wings shorter; hindwings with the white median band barely indicated, underneath deep ferruginous, without the white cross line.
- drymaea*. **Ph. drymaea** *Godm. a. Salv.* (90 c), from Honduras, has the upper surface blackish-fuscous, forewings spotted with pale yellow; 2 yellow submarginal lines and a median row of yellow spots on the hindwings. — **sisis** *Godm. a. Salv.* (90 d), from Chiriqui has on the hindwings in the place of the median row of yellow spots a line formed of yellow lunules. Under surface somewhat more yellow.
- ardys*. **Ph. ardys** *Hew.* (90 d) from Mexico is larger than *texana*, which it resembles above, but with broader white markings. But the underside much more monotonous, since the forewing has the base not yellow-brown, but corresponds in colour and markings with the rest of the wing.

Ph. subota *Godm. a. Salv.*, from Guatemala, resembles *ardys*, but the submarginal lines on the hind- *subota*. wings are nearly obliterated, the base of the hindwings uniformly deep blackish-fuscous, and the hindwings are purplish grey beneath, not laved with ferruginous.

Ph. lelex *Bates* (90 d). Like *ianthe*, but of smaller size and with the markings of the upper surface *lelex*. yellowish; on the forewings a few more pale spots, and on the hindwings 2 pale submarginal lines. Underneath the hindwing lacks the white median band, and all the pale markings are reduced, rendering the general appearance much darker. Panama.

Ph. annita *Stgr.* (90 d), from Venezuela. Upper surface blackish brown with a few nearly obsolete *annita* marks on the forewings and 3 yellowish lines on the hindwings. Underside dirty yellowish, with the usual markings.

Ph. morena *Stgr.* i. l. (90 d), from Peru (Cuzco). Wings with smooth margins: upper surface with a *morena*. yellowish submarginal line and a subterminal row of black, yellow margined eye-spots on the hindwings. On the forewings only traces of a yellowish terminal line. Underside greyish-black, devoid of all markings.

Ph. atronia *Bates* (88 i); from Guatemala. ♀: Wings broad, dark brown; forewings with a curved *atronta*. blackish-fuscous stripe at base, hindwings with a submarginal row of short, curved light brown lines. Forewings with blunt apex, and termen deeply excavated about the middle, hindwings distinctly so at apex and with termen denticulate; forewings with a small brown spot between several of the veins behind the middle. Under surface dusky brown in the middle, paler at the margins, the dark lines as above, the interspaces lighter than the ground. Hindwings paler, with some almost imperceptible marks.

Ph. argentea *Godm. a. Salv.*, from Guatemala and Nicaragua, is closely related to *atronta*, but both *argentea*. sexes display on the under surface of the hindwings a silvery lustre.

Ph. nebulosa *Godm. a. Salv.* (88 i), from Guatemala, has the hindwings dark brown, the forewings *nebulosa*. spotted with ferruginous, as also the base of the forewing, the latter with a submarginal row of lunules. Under surface of forewings yellowish, hindwings pinkish-white, dusted with yellowish-fulvous, with an irregular, delicately tinted blotch reaching the costal margin. Closely allied to the *atronta* group.

Ph. alethes *Bates*, from Central Guatemala and Ecuador, is related to *ardys*, *lelex* and *ptolyca*. ♂: Fore- *alethes*. wing with termen moderately excavated, but the anal angle not perceptibly produced. Dark brown, with the yellowish spots moderately large. Hindwings with a few oblique reddish marks at base, the median stripe moderately broad, the 2 submarginal lines fine and pretty much contiguous. Underneath the hindwings differ from those of *lelex* in the presence of dusky brown and reddish spots, two of which are united to a broad, almost coherent, median band. The submarginal lunules not very distinct.

Of **Ph. archesillea** *Fldr.*, from Mexico (Cordoba, taken in January) we only can furnish the original *archesillea*. description, which reads as follows: "Allied to *alethes* *Bates*, but with the wings shaped as in *stesia* *Bates* marked with a dense cluster of dirty yellow basal spots, a pale ochreous band in the cell and a submarginal row of pale ochreous lunules; on the forewings the 5. lunule much the larger, the rest quite minute or blurred; on the hindwings the lunules are followed by a series of pale ochreous striae which toward the vein (costa?) are of decided yellowish tint; otherwise as in *alethes*, with which it corresponds also on the under surface, only the forewings have two apical lunules, the hindwings a basal spot and discal fascia, both much clearer white".

Ph. conferta *Fldr.* (90 d), from Bahia, of which our figure represents the type, displays the same mar- *conferta*. kings on both sides, only the ground-colour of the underside is much lighter.

Ph. ianthe *F.* (90 d, e) from Brazil and Bolivia. Upper surface blackish-brown, with white markings, *ianthe* as seen in our figure. Under surface characterized by the yellowish tint of the inner half of the forewings which otherwise reproduce the markings of the upper surface. Underside of hindwings with a row of submarginal lunules, followed by a series of eye-spots. The white median band of the upper surface is reproduced also beneath, and the basal area shows a brownish design on white ground. — **atra** *Ky.* i. l. (90 b, c), from *atra*. Argentina, has the white markings reduced, both above and beneath, and the yellowish basal area of the underside of the forewings more brilliant and extensive.

Ph. abas *Hew.* (= *fellula* *Schaus*) (90 e), from Colombia, where it ascends to altitudes of 6000 ft., differs *abas*. from *ianthe* in the narrower wings and reduced white markings of the upper surface of the forewings. Also beneath it resembles *ianthe*, but the hindwings have the submarginal row of lunules not white, but dark, occasionally quite black.

Ph. hera *Cr.* (90 e), from Surinam, is distinguished from *ianthe* by the much broader white median band *hera*. on the hindwings and the much larger and differently shaped white spots on the forewings. Underneath the

markings are very much as in *ianthe*, but likewise broader, and the basal area of the forewings is of a paler tint.

myia. **Ph. myia** Hew. (90 e), from Mexico and Central America, differs from *ianthe* in the narrower wings and reduced white markings of the upper side of the forewings. Also beneath it resembles *ianthe*, but has the submarginal row of lunules dark, sometimes black, never white. — **griseobasalis** form. nov. has the middle cell of the forewings underneath which in normal specimens is fulvous, grey.

hermas. **Ph. hermas** Hew. (= *genigueh* Reak.), from California, I only know from the description and figure furnished by the author. Upperside of ♂ dark brown, forewings with 12 or more distinct white spots, termen feebly excavated, hindwings with 2 white spots near the base, a broad median macular band, and 2 submarginal rows of fulvous spots. Under surface of forewings orange at base, then brown, with the white spots of the upperside reproduced; hindwings brownish-white, with a few indistinct white spots and a submarginal row of white lunules, termen fulvous, with one spot each at costa and middle termen.

ofella. **Ph. ofella** Hew. (90 f), from Colombia and Chiriqui; wings very elongate, with broadly white median band reaching from inner margin of hindwings to middle of forewings. Under surface very much as in *ianthe*.

leucodesma. **Ph. leucodesma** Fldr. (90 f), from Colombia and Venezuela. Wings very broad and rounded, with the bands and spots so broad that the greater portion of the upperside is white. Also underneath the white ground-colour prevails; forewings with base yellow, and terminal markings dark brownish; hindwings with a subterminal row of white lunules and, following it, a series of dark ocelli.

coela. **Ph. coela** Druce (91 e), from Costa Rica. ♂ forewings black, with a triangular white spot behind the middle of the costa cut up into 4 by the veins, a small spot at the apex, a submarginal row of 6 white spots the third of which is smallest, and a large, round, white spot at the outer angle. Hindwings fulvous-orange, base and termen black, with a white subapical spot and a submarginal series of yellowish lines. Under surface like upper side, but with all the white markings larger, a yellow streak at the base of both wings, and a yellowish spot partially entering the cell of the forewings.

nigrella. **Ph. nigrella** Bates (88 i), from Central Guatemala. A small sized species. ♂ wings very long, forewings pointed, termen gently and evenly curved outwards. Abdomen protruding beyond the wings. Upperside smoky brown, with 3 or 4 pale brown spots in the middle of the forewings and a pale brown median band on the hindwings. Under surface: Forewings brown with several dusky lines, darker in the middle, with a large triangular spot at the middle of the hindmargin and 2 pale spots near the apex; hindwings light brown, darker from middle to termen, with a series of short curved dark striae and a row of black spots parallel to the termen.

lutescens. **Ph. lutescens** Godm. a. Salv., from Guatemala, approximates to *nigrella*. ♂ and ♀ resemble *nigrella* ♀, with the spots on the hindwings always distinct, those on the forewings and the band on the hindwings, especially in ♀ much more prominent, resembling in this respect *anieta*. Probably it is only a form of *nigrella*.

cerquita. **Ph. cerquita** Dogn., from Ecuador (near Loja); only known to me from the description: "Both wings dirty white above, dusted with fine black scales; forewings bordered with black throughout, hindwings with an even black border along costa and terminal band, which latter is much broader than on the forewings, and encloses at the apex a white point, abdominal border ferruginous. The under surface resembles the upper, but all the white portions are scaled with black, and the terminal band contains a row of white dots on both wings." Size like that of *lansdorfii*.

flavida. **Ph. flavida** Hew., from Ecuador, approaches in size *flavina*, but is pale yellow above, the forewings broadly, hindwings narrowly bordered with blackish-brown. The colouring of the under surface is paler, and devoid of all markings.

albescens. **Ph. albescens** spec. nov. (90 f), from Ecuador (1 ♀), differs widely from all other species. Upper surface dirty whitish-yellow, with the border of the forewings broadly greyish-black, that of the hindwings narrow. Underneath the forewings have in addition to the dark, somewhat faded termen a few brownish striae in the cell, the hindwings fine greyish-fuscous markings on dirty yellowish ground.

albipunctata. **Ph. albipunctata** spec. nov. (90 f), from Mexico. Upper surface deep greyish-black, with a submarginal

row of white spots on each wing, on the forewing a subapical row of larger white spots and several similar spots near the base. Underneath like above, but paler, hindwings with a broad light median band and the usual *Phyciodes* pattern on the termen.

Ph. fulgora *Godm. a. Salv.* (90 f), from Costa Rica. ♂ Wings very narrow. Upper surface blackish-brown, *fulgora*, with large yellow spots on the forewings and a narrow similar median band on the hindwings. The markings of the under surface as above, but much less dark. Hindwings marked as usually.

Ph. selene *spec. nov.* (90 f), from Tolima (Colombia, 5200 ft.), captured in January 1910 by FASSL, *selene*. has the upper surface black-brown, with large brownish-yellow, band-shaped spots. Under surface of forewings yellowish, with feeble blackish subapical spots and brownish marks at the inner half of the costal margin. Under side of hindwings greyish-yellow, with a submarginal row of whitish-blue lunules, and numerous similarly coloured spots in the inner half.

Ph. etia *Hew.* (90 g), from Ecuador and Peru. Upper surface blackish fuscous, with feeble bluish lustre, *etia*. forewings with a large median blotch of fulvous and a similar subapical streak. Underside yellowish, hindwings with brownish scalloped lines, forewings with brownish basal, median and subapical markings.

Ph. calena *Hpffr.* (90 g), from Peru and Bolivia. A delicate species, above black-brown, slightly marked *calena*, with white. Under side paler, marked as above, but with the median band of the hindwings broader, and the greyish-brown termen enclosing a submarginal row of whitish lunules followed by black, pale margined ocelli.

Ph. catula *Hpffr.* (= *abasina* *Stgr.* i. l.) (90 g), from Peru and Bolivia, resembles above a small-sized *catula*. *Dynamine*. Upper surface marked with pale yellow on blackish-brown ground; underneath the forewings have a paler tint, but the same markings. Hindwings with distinct brown spots on both sides of the pale median band. — **extincta** *Stgr.* i. l. (90 g), from Peru, has the markings of the upper surface white instead of yellow, *extincta*, and those of the hindwings very indistinct, particularly the median band.

Ph. minima *spec. nov.* (90 g); from Salta. Upper surface black-brown, forewings with 6 yellow small *minima* spots, hindwings with a yellow median band and 2 similar submarginal lines. Underneath the forewings as above, but with the ground-colour brown, hindwings marked as usually. Closely resembles *catula*, but of smaller size and different shape, the forewings being narrower and the hindwings forming at the inner angle a sharp point.

Ph. orticas *Schaus.* from Brazil (Castro in the State of Paraná), described by the author as follows: *orticas*. “♂ forewings: A small light spot near the end of the cell, a short oblique whitish band from vein 4—6, a large whitish spot from the base between 2 and 3 (ground-colour?). Hindwings: A broad oblique whitish band from inner margin to 7, slightly yellowish between 6 and 7 and at inner margin, a fine greyish-brown submarginal lunular line. Under surface: Basal half of forewings reddish-brown, discal spot larger, partially margined with reddish-brown, the oblique band reaching the costal margin, preceded by a broad black shade which surrounds the large spot before the inner margin; termen brown, with a fine dark terminal line, faintly white at apex. Hindwing: The basal two thirds whitish, intersected by fine, irregular brownish lines, partially double and filled with whitish-blue, the outer third pale brown, the subterminal dots small, darker brown, followed by a fine reddish-brown line and, parallel with it, a grey terminal lunular line”. As large as *sejona*.

Ph. dicoma *Hew.* (90 g), from Rio Grande do Sul and Sa. Catharina. Wings very long, marked with *dicoma*. blackish-brown on fulvous ground. Hindwing with the median fulvous band very broad. Under surface fulvous, feebly marked with fuscous.

Ph. angusta *Hew.* (82 h) seems to be very widely distributed, our material comprising specimens from *angusta*. Colombia, Jurimaguas and Huancabamba, that show very slight, probably individual differences. On the very narrow, above deep blackish-fuscous forewings a fairly large yellow median spot, preceded by 2 partially incomplete rows of yellow dots. Under surface much paler, but the forewings marked in the outer half as above, hindwings with the usual *Phyciodes* pattern, in addition to a yellow median band.

Ph. polina *Hew.* is the first in the series of species which approach the so-called mimics. As may be *polina*, seen from the figures, it differs greatly from *nauplia* not only above, but also on the under side: In the cell of the forewings the brown basal spot is separated from the yellow discocellular spot by a black streak, the yellow spots in the outer half of the forewings are no larger than above, on the hindwings the black subbasal bands are placed more obliquely, the pale marginal band is about four times as large, the black band bordering the

- brown one on the inside is increased by another one separated from the former by a white line, and the apex is adorned by large spots of mother-of-pearl. Ecuador and Colombia. — **encina** *Fldr.*, likewise from Ecuador and Peru (Chanchamayo) is somewhat larger and darker above, with pale yellow markings. On the forewings the middle submarginal spot produced distally in the shape of a comb. Underneath the colouring is more brilliant, the apex of the forewings, as well as the light coloured portions of the hindwings bright silvery white. — **intermedia** *form. nov.* (92 g erroneously marked *polina*), from Bolivia, is intermediate between the two preceding forms, both in colouring and size. On the under surface the apex of the forewings less brightly silvered than in *encina*, the hindwings with large, pale yellow, indistinctly defined spots on silvery white ground.
- clio.** **Ph. clio** *L.* (92 h) is found from Central America to Colombia, Ecuador and Peru. ♀ with broader, more rounded wings than ♂.
- laias.** **Ph. laias** *Godm.* (90 g), from West Colombia (Rio Aguaca Valley, 6000 ft.) (1 ♂ in FASSL's collection) Upper surface blackish-brown, with yellowish brown markings. Underneath it resembles *perna* (92 g), but the hindwings with 4 black stripes and 2 silvery white semi-bands.
- perna.** **Ph. perna** *Hew.* (92 g), from Rio de Janeiro, has in both sexes, especially the ♂, the wings very long and narrow. — **alma** *Stgr.* is distinguished by larger spots. Sa. Catharina.
- sestia.** **Ph. sestia** *Hew.* (90 g, h) from Ecuador. ♀ varies very much, from pale straw-yellow (type) to yellowish-brown = **saturata** *Roeb.* (90 h).
- nauplia.** **Ph. nauplia** *L.* (92 h), from Surinam, is smaller than *clara* *Bates* (92 h), of Central America and Venezuela **plagiata.** which has, moreover, the white spots and bands larger. BATES treated *clara* as a separate species. — **plagiata** *form. nov.*, from southern Peru (upper Madre de Dios, 1500—3000 ft., A. H. FASSL), has the white markings broader, and lacks the posterior black band in the subapical spot on the forewings. Underneath marked as above, but the dark portions are heavier and deeper black.
- eranites.** **Ph. eranites** *Hew.* (92 c, d erroneously spelled *evanides*), from Chiriqui and Colombia. ♂ differs from ♀ (pl. 92 c) in having the markings of the under surface reduced, especially the white lunules at the termen of the hindwings only just indicated. The ♀ varies much in colouring as well as in the markings. — **mejicana** *subsp. nov.*, from Mexico (Presidio) is less black above, underneath more yellow.
- bella.** **Ph. bella** *Ky.* (= *mylitta* *Hew.*) (88 i), from Ecuador has a close resemblance to *Eueides aliphera* (80 a), being, however, somewhat smaller, with black inner margin of the forewings and on the hindwings, besides the black border, a similar subterminal band, with the intervening space corresponding to the ground-colour.
- casiphia.** **Ph. casiphia** *Hew.*, from Ecuador, is larger than *bella*, otherwise resembling it closely, but with a small white apical spot. Forewings black, with a red-brown band at the inner margin, a similar median and a somewhat lighter subapical band, the two latter dissected by the veins. Under surface rather paler, with a submarginal row of white spots on both wings.
- carme.** **Ph. carme** *Dbl. a. Hew.* (92 d), from Venezuela (San Esteban) differs from **oblita** *Stgr.* (92 d) in the brighter colouring and sharper markings. Under surface nearly sulphur-yellow, marked as the upper surface, but with a row of yellow spots at the outer margin of the hindwings, and the middle one of the yellow terminal spots on the forewings reaching the termen.
- aveyrona.** **Ph. aveyrona** *Bates* (92 d as *aveyrana*), from Surinam, Venezuela and the Amazon, has straw-yellow underside marked as above.
- emerantia.** **Ph. emerantia** *Hew.* (92 d), from Colombia, bears a general superficial resemblance to certain *Eueides*. Underneath the white apical markings broader, and the hindwings are adorned with a series of large yellow terminal spots. ♀ not known.

The species now follow resemble *Eueides*.

- eunice.** **Ph. eunice** *Hb.* (92 a), from southern Brazil (São Paulo, Rio de Janeiro), greatly resembles *Eueides* **esora.** *isabella*, but is smaller. Underside like the upper surface. — **esora** *Hew.* is said to differ from *eunice* in having the black median band on the under surface replaced by a row of black spots. In consideration of the variable nature of *eunice*, we cannot accept this slight difference as sufficient to base a new form upon. — **pella** *Hew.*, from the Amazon, cannot, however, be taken as synonymous with *eunice*, as KIRBY proposed. Forewings with a large yellow apical spot and with the yellow median band tapering anteriorly, on the hindwings the black median band broken up into spots, and the black border is divided by a nearly 1 mm wide band of ferruginous.
- pelonia.** **Ph. pelonia** *Hew.* (♀ = *ithomiola* *Salv.*) (92 b), from Ecuador and Peru, differs from *eunice* in the absence

of the yellow longitudinal band in the middle of the hindwings and in having the black median and terminal bands on the same wing broken into spots. Under surface, especially of the hindwings, uniformly brown, marked as above.

Ph. olivencia Bates (92 a, b), from the Upper Amazon, lacks above the clear yellow bands; on the forewings the black markings vary greatly, as may be seen from our figures of **gudruna** *form. nov.* and **brunhilda** *Stgr.* i. l. (92 b). — **polymnia** *subsp. nov.*, from Eastern Colombia (Medina 1600 ft., FASSL's collection). ♂ has on the forewing the black median band broader and the subapical band clearer yellow and interrupted; in the hindwing this yellow band broad and uniform.

Ph. mechanitis Godm. & Salv. (90 h), from Costa Rica, has narrower wings than *olivencia*, hindwings with pointed apex. The species bears a general resemblance to various species of *Mechanitis*. The underside is like the upper surface.

Ph. drypetis Godm. & Salv., ranging from Guatemala to Colombia, resembles *mechanitis*, but has on the forewings the termen fulvous proximally, not black, the yellow apical spot smaller, and on the hindwings the black transverse band narrower.

Ph. pardalina *spec. nov.* (90 h), from Pebas on the Amazon, is like *murena*, but with the black colouring of the hindwings reduced on account of the subcostal brown longitudinal band being much broader, and the posterior portion of the outer margin is taken up by a brown subapical band. On the forewings the apex black, with two rows of yellowish small spots, and a larger similar one on the termen between 2. and 3. median nervule. The black median stripe goes about as far as the 1. median. The underside is like the upper surface, but the hindwings have at the termen a submarginal row of fine white spots. — **apicalis** *subsp. nov.* (90 i), from Rio Chuchurras, has the apex uniformly black, and on the hindwings the white terminal spots of the under surface quite minute, and barely visible posteriorly.

Ph. quintilla Hew. (90 i), from Ecuador has a superficial resemblance to *Ithomia panamensis*. Underside somewhat lighter than the upper surface.

Ph. datis Hew., from Colombia, the ♀ of which was described and figured by the author, has the upper surface of the hindwings scarlet and on the forewings an unicolorous, very long triangular basal spot. In the black outer half of the forewings 5 elongate dark yellow spots, a similar spot at the end of the cell, and 2 white dots at the apex. Hindwings with termen black, containing a row of small white spots. Underside like upper one, but the forewings with a submarginal row of white spots and on the hindwings the veins brown.

Ph. murena Stgr. (92 c), from Peru (Cuzco), resembles *Heliconius bicoloratus*, but is much smaller. In the ♂ the black area on the hindwing dissected by a brown streak near the costal margin. Underside as above, only paler. — A lovely form taken at Pebas in Dezember (1 ♀) is **heliconina** *subsp. nov.* (= *pelonia* *var. B.* Hew.), distinguished by a sulphur-yellow apical band on the forewings formed of 5 elongate spots behind which, between 3. median and upper radial, a roundish spot of similar colour; moreover it has, like *murena* ♂, the black area of the hindwings divided by a brown stripe.

Ph. callonia Stgr. (88 i), from Peru, resembles *heliconina*, but has the apex of the forewing less yellow, in the place of which the median band is yellow. On the under surface of the hindwings a series of triangular white terminal spots.

Ph. eutropia Hew. (92 b), from Panama, looks like certain *Ithomiidae*; under surface like the upper side, with a row of white terminal spots on the hindwings.

Ph. nigripennis Salv. (90 i), from Costa Rica. Only the ♀ resembles certain *Ithomiidae*, whereas the ♂, on account of the shape of the wings and monotony of markings, can hardly be counted among the mimics notwithstanding its other resemblance to the ♀. The underside corresponds to the upper surface, but in the ♂ the yellow spots which above appear as dots, are produced into yellow stripes. — **dismorphina** Btlr., likewise from Costa Rica, is a paler (aberrative?) ♀ form, having all the yellow spots larger, the black border of the hindwings narrower, in consequence of which the yellow marginal spots are not edged with black inwardly, and the median area of the hindwings beneath whitish.

Ph. prisca Hpffr. (92 c), from Peru, bears a deceptive resemblance to certain *Dircenna* species. The markings of the upper surface are repeated beneath, but the median areas of both wings very pale, almost white.

Ph. ildica Hew., from Ecuador, differs from **fassli** *subsp. nov.* (90 c) from East Colombia (Upper Rio Negro, 2500 ft., A. H. FASSL coll.) in the reddish-grey forewings and orange-red hindwings, which latter have the

black outer margin sharply defined. Both forms are marked on both sides alike, but the basal area of the forewings is slightly yellowish.

- celestina*. **Ph. celestina** *spec. nov.* (90 k), from Colombia, resembles *Ithomia celestina*. Underneath the hindwings with very large terminal spots.
- ithomoides*. **Ph. ithomoides** *Hew.* (90 k), from Colombia. The ♀ mimics *Hirsutis hecalesina*, but is much smaller. The under surface exactly corresponds to the upper side, but somewhat paler. The ♂ is distinguished by the very narrow wings and the broad yellowish-brown longitudinal band on the hindwings.
- poecilina*. **Ph. poecilina** *Bates*, from Veragua closely resembles *ithomoides* (90 k). ♀ with broader wings, dark brown; forewings with an ochreous-yellow discocellular spot and a large number of similar spots beyond the cell arranged in rows: One row of 6 spots separated only by the dark nervules, from the costa at the middle, with 2 spots behind the median nervure; 2 parallel rows conforming to the termen, but not reaching the apex in which there only are 3 spots. Hindwings deep brown, in the middle and at the inner margin a large rounded blotch of orange, with a row of yellow submarginal spots and 3 others placed proximally to these near the outer angle. Underside like upper surface; hindwings with an orange spot at base of costa, but, aside from the submarginal row, without any yellow spots. Antennae pale ochreous, black at base. Abdomen yellowish-brown.
- alsina*. **Ph. alsina** *Hew.* (90 k), from Nicaragua, differs from **mimas** *Stgr.* (92 c) in having the bands contiguous, broader and deeper yellow, also the terminal spots larger, occasionally broadly spread out and united with the first yellow band. Typical *mimas* ♂♂ have the spots much smaller than would appear from the figure. The specimen which was figured on pl. 92 c as *mimas*, came presumably not from Rio Dagua, the home of the typical form, but from some other part of Colombia. We name this form **subfasciata** *subsp. nov.*
- philyra*. **Ph. philyra** *Hew.* (= *ezorias* *Hew.*) (92 c), from Mexico (and Santa Catharina ??) resembles in general certain *Heliconius* and *Dione*, all of which are protected species. Underneath as above, only somewhat paler.
- letitia*. **Ph. letitia** *Hew.* (91 a), from Ecuador and Colombia, has the general habitus of an Ithomiid, without, however, resembling any particular species. The markings of the underside are the same as those of the upper surface, but narrower, those at the termen of both wings yellowish-brown; the ground-colour lighter. — **ocellata** *subsp. nov.*, from Peru (Chanchamayo), with deeper, nearly black markings above and the median band of the hindwings narrower, yellowish-white, not sharply defined distally. On the forewings the white submarginal spot at the inner angle enlarged, centred with black scales, like a regular ocellus. In the upper outer margin of the forewings some sharply defined white spots. The markings of the underside chestnut-brown, not fulvous as in *letitia*. — **leucophaea** *Weym.* (91 a), from Huancabamba, differs from *ocellata* in the paler ground-colour of the upper surface and the blurred markings. Also beneath the terminal markings are paler brown.
- lansdorfi*. **Ph. lansdorfi** *Godt.* (92 a), from southern Brazil, closely resembles, especially beneath, *Heliconius phyllis* and *besckei* which fly in the same localities. Larva and Pupa do not deviate from the general type. — **jacinthica** *form. nov.* (90 k), from San Jacintho, has on the forewing the ferruginous area increased, with a broad, but short terminal band of ferruginous from the anal angle.
- acraeina*. **Ph. acraeina** *Hew.* (92 f erroneously as *amoenides*) is the first in the series of species that mimic *Acraea* (*Actinote*). A ♀ from FASSL's collection is larger than the figured ♂, with the base of forewings and the hindwings paler and the median band of the forewings more yellow, the yellow subapical marks reduced. The typical ♀ form is the ♂-like form figured by Dr. STAUDINGER (Exot. Schmett. pl. 36). The aberrative form figured on pl. 91 a, we name ♀ fa. **aberrans**. — A common form is **hilarina** *form. nov.* (92 e as *acraeina*); forewings with shorter red median band and black hindwings. Very similar to *Actinote hilaris* (82 e). Peru, Colombia, Bolivia (2400 ft.).
- neria*. **Ph. neria** *Hew.*, from Ecuador, is described by the author as follows: "Stands nearest *acraeina*. ♂ upper surface dark brown, forewings with a large triangular orange spot divided by the nervules, discocellular black. Under surface fulvous, veins and lines black, forewings with the basal spot as above, hindwings dusted with yellow, base yellow and two red spots. — **crina** *Schaus*, from Ecuador. Hindwings black, scaled with dark grey in the basal half; underneath the pale border seems to be absent since the author does not mention it. — **microdryope** *form. nov.* (92 e), from Colombia, is smaller, the red median band on the forewings different and the hindwings with reddish-brown lustre. Very similar to *Helic. dryope* (78 b), but much smaller.
- actinote*. **Ph. actinote** *Salv.* (= *acraea* *Hpffr.*) (92 f), from Peru, is distinguished by the narrow rusty-red terminal bands of the under surface. — **limbata** *subsp. nov.*, from Bolivia has the markings of the upper surface paler ferruginous, on the forewings the subapical spot smaller and narrower, and the ferrugous terminal band beneath very

moreover the median area of the hindwing beneath is much lighter. — *rosina* Dogn., likewise from Bolivia, *rosina*, has the upperside of the hindwing black, the markings of the forewing redder, and the rust-red marginal bands of the under surface are almost obsolete.

Ph. fallax Stgr., from Peru (Chanchamayo), is very similar to *actinote*, but instead of the rust-red *fallax*. marginal band on the under surface of both wings it has only a row of brown submarginal spots on the hindwing.

Ph. hopfferi spec. nov. (92 f, erroneously as *acraea*), from Peru, is very similar to *actinote*, but the *hopfferi*. rust-red marginal bands on the under surface are absent.

Ph. erebia spec. nov. (91 b), from Peru (province of Huanuco, 1900 m.), has the forewing red-yellow *erebia*. with only the following black markings: a broad apex, a large rounded discocellular spot and an oblong spot at the inner margin. The hindwing is unicolorous black. The under surface is marked like the upper, but of paler colour.

P. actinotina Stgr. i. l. (91 b), from Bolivia, is characterized by the red basal part of the forewing *actinotina*. and a narrow white stripe at the costal margin of the hindwing. It is sharply distinguished from the other similar species by the under surface of the hindwing, the ground-colour being here whitish. In addition to the dark brown veins and interneural stripes there are present a broad grey-brown band at the distal margin, 5 black-margined spots of the same colour near the base of the hindwing and 2 red-brown spots in the middle of the wing at the costal margin.

Ph. vanessoides spec. nov. (91 b), from Colombia (Bogota), differs from the preceding species in the *vanessoides*. *Vanessa*-like shape of the forewing. The upper surface is black with the basal part of the forewing red. The under surface is much lighter and the dark veins and interneural stripes stand out sharply against the ground-colour.

Ph. elaea Hew., from Ecuador, has the wings almost the same shape as in *vanessoides*. The upper *elaea*. surface is black-brown and the forewing has a scarlet band reaching to the submedian and becoming broader posteriorly, divided by the black veins into 4 patches. The under surface corresponds to the upper, the apex of the forewing is grey-brown and the veins and interneural stripes black, two spots near the base and a part of the distal margin scarlet.

Ph. nebrites Weym., from Bolivia (Cochabamba), is similar to *Actinote bycia*. This species has the *nebrites*. wings shaped as in *vanessoides* and is also similar in the style of markings, but has besides the vermilion basal area a subapical band of the same colour, which is divided into 7 spots by the dark veins. The ground-colour of the upper surface is brown. The hindwing is also brown, and has darker veins and interneural stripes and a white costal margin. The underside of the forewing is similar to the upper, but the red colour in the basal part is extended to the costal margin and the last spot of the outer band is distally white in cellule 3. In addition the apex and the distal margin are lighter brown and traversed by the dark brown veins and interneural lines. The ground-colour of the hindwing is white, traversed throughout by the brown veins and brown longitudinal lines between the veins. The distal margin is dusted with brown for a breadth of 4 mm., but this becomes indistinct towards the costal margin. At the base are placed 5 spots margined with red-brown, 2 of which are in the cell, in addition there are 3 red spots within a large dark brown spot on the middle of the costal margin in cellules 5 to 7 and further some brownish yellow spots close to the distal margin in cellules 2 to 5. Body brown, only the abdomen beneath with ochre-yellow median stripe. About the same size as *vanessoides*. Only 1 ♂ known.

Ph. eleates Weym. (91 a) from Colombia has the same shape as *vanessoides*, but, as the figure shows, *eleates*. is quite differently marked and coloured. Only 1 ♀ is known.

Of **Ph. epione** Godm. & Salv. (91 b), from Colombia (Bogota), 1 ♂ is before us. Upper surface steel- *epione*. blue, with the rather broad red inner margin of the hindwing standing out sharply. The under surface is black, dusted with yellowish at the base of both wings and with reddish at the inner angle of the hindwing.

Ph. styx Stgr., from Colombia, is very similar to *Actinote neleus* (figured on pl. 81 c), except that *styx*. it has the body black instead of red. The under surface is grey-black, the veins and interneural stripes are black, the base of the hindwing yellowish.

Ph. aurora spec. nov. (91 b), from Ecuador (Zamora, 3000—4000 ft.), of which 2 ♀ are before us, *aurora*. is perhaps further ♀-form of *castilla*. The under surface is lighter than the upper and the veins and interneural stripes stand out sharply on account of the dark scaling. The red anal spot of the upperside of the hindwing is absent beneath.

Ph. aricilla Hdffr., from Peru (Chanchamayo), is only known to us from the author's description *aricilla*. ♂ similar to *castilla*, wings narrower, forewing behind the apex "strongly excavated", red band of the forewing much broader, under surface entirely unicolorous brown-black, without markings.

Ph. castilla Fldr. (♂ 92 e, ♀ 91 b), from East Colombia, has the ♀ very different from the ♂. It is *castilla*.

- considerably larger and has a broad light yellow median band on the forewing, while the hindwing is red with broad black margin and black rays; on the under surface the red colour is wanting. — A further ♀-form is
- virilis*. **virilis** *form. nov.* It is extraordinarily like the ♂, only differing from it in being somewhat larger, with the ground-colour more brownish and the red median band somewhat longer and broader as well as a shade lighter.
- occidentalis*. The ground-colour of the under surface is only a shade lighter. — **occidentalis** *Fassl* (91 c), from West Colombia (2000 m.), has in the male a somewhat narrower red band and the ♀ is fairly similar to the ♂, except that the red band on the forewing is more washed-out and at the inner margin of the hindwing there are some washed-out red streaks. According to the observations of Herr FASSL *castilla* is found in company with the similar species of *Actinote* and the likewise similar day flying Geometrid *Sangala gloriosa*.
- mundina*. **Ph. mundina** *Druce*, from Peru (Huiro), is similar to *castilla*. The red band of the forewing extends from the costal margin to the inner angle and is nearly twice as broad. The forewing has at the base of the costal margin a red stripe, which reaches the end of the cell, the hindwing is brownish white beneath with black veins.
- corybassa*. **Ph. corybassa** *Hew.* (= *cornelia* *Stgr. i. l.*) (92 g as *cornelia*), from Bolivia, and the 3 following species belong to the mimics of *Actinote antea*s (83 d). In many specimens of *corybassa* a complete row of small white marginal spots is present on the hindwing. The under surface of the forewing resembles the upper, but the hindwing has in the middle a large black spot, and the veins are broadly dusted with black.
- perilla*. **Ph. perilla** *Hew.* (92 f), from Ecuador and Bolivia, has the underside of the forewing like the upper,
- lugubris*. that of the hindwing, however, is dark with red-brown stripes on the basal part. — **lugubris** *subsp. nov.* (92 f, erroneously called *actinotina*), from Peru, also occurs in much darker specimens than the example figured. The apex of the hindwing beneath is yellowish.
- pellenea*. **Ph. pellenea** *spec. nov.* (91 c), from Brazil (Reyes), is extremely similar to the *Actinote* of the same name. The under surface is similar to the upper.
- fenestrata*. **Ph. fenestrata** *spec. nov.* (91 c), from Peru (Huayabamba, 3500 ft.), has on the forewing a median band of transparent spots. The under surface is but little paler than the upper.
- levina*. **Ph. levina** *Hew.* (92 e), from Colombia, although also *Actinote*-like in habitus, cannot be regarded as a mimic, since no blue-banded *Actinote* species is yet known. The under surface is black, in the middle of the costal margin of the forewing is placed a broad light yellow half-band, at the inner margin of the hindwing there are some light yellow stripes, at its distal margin some small red spots and in the apex and at the inner angle of the forewing as well as on the hindwing some small blue spots. The female, of which only one specimen from the collection of Herr FASSL is before us, is almost like the male; it is merely somewhat larger and with the anterior part of the blue band whitish. — Specimens which, like the one figured in Dr. STAUDINGER's
- decorata*. *Exot. Schmett.* (pl. 36), show blue spots also on the hindwing, may be designated **decorata** *form. nov.* — The specimen figured by Dr. STAUDINGER l. c. is certainly not a ♀ but a ♂.
- margaretha*. **Ph. margaretha** *Hew.* (91 b) from Colombia has only a distant resemblance to certain *Heliconius* species. The under surface is quite similar to the upper, but in addition a subapical row of white dots is present at the distal margin of the forewing.

The North American species described as *hanhami* *Fletcher*, *lira* *Bdv.*, *pelopsa* *Godt.* and *selenis* *Kirby* are not cited by recent North American authors under these names, which must consequently be regarded as synonyms.

Concerning *Ph. adoxa* *Ersch.*, *castimaria* *Godm. & Salv.*, *catenarius* *Godm. & Salv.*, *durnfordi* *Godm. & Salv.*, *erysice* *Hbn.*, *flavocincta* *Dogn.*, *goujoni* *Dogn.*, *heliconoides* *Btlr.*, *klagesii* *Weeks*, *moesta* *Salv.*, *mirjam* *Dogn.*, *northbrandii* *Weeks*, *phaedima* *Godm. & Salv.*, *proclea* *Dbl. & Hew.*, *pusilla* *Salv.*, *tayleni* *Godm. & Salv.*, *tissa* *Hew.* and *trimaculata* *Hew.* we are not able to say anything, as we have not access to specimens of these species or the descriptions. Some of them are probably identical with some that we have described and figured above.

5. Genus: **Chlosyne** *Btlr.* (*Coatlantona* *Ky.*).

This genus is nearly allied, to *Phyciodes*. It only shows trifling differences from the latter in neururation, the cell of the hindwing is also open. Only in the shaggy-haired, little inflated palpus, which has a very pointed terminal joint, does *Chlosyne* differ from *Phyciodes*, yet even this character is not reliable, as the two genera are connected by transitions. Also the shape of the larvae and pupae is *Melitaea*-like. *Chlosyne* is likewise closely allied to the Palearctic *Araschnia*, from which it only differs in not having the eyes hairy. The principal area of distribution of the genus is Mexico with Central America, but offshoots occur in the south of the United States and in Peru, as well as on the Antilles. The species, like those of *Araschnia*, occur in several genera-

tions, which in some species are as different as *Araschnia levana* and *prorsa*. As the figures show, very diverse forms are included in the genus. — Egg oval, truncate at the tip and somewhat compressed, rounded at the base, the lower three-fifths with slight impressions, the upper part with about 24 obtuse-angled ribs. The eggs are laid in clusters on *Helianthus*. Larva of *crocale* varying in colour, usually black or dark red or brown, with spines like *Melitaea* larvae; it moults four times. Pupa shaped like those of *Melitaea*, light-coloured and with dark brown or black spots and lines. — The butterflies fly at the edges of woods and are fond of resting on flowers.

Chl. saundersii Dbl. & Hew. (91 d), from Venezuela and Colombia, is rather variable in the female, *saundersii*. the ground-colour on both surfaces being sometimes lighter, sometimes darker, and the light spots at the distal margin and on the basal part of the wings larger or smaller; occasionally also whitish spots occur in the light median band of the forewing. The under surface corresponds to the upper in the scheme of markings but the submarginal rows of white spots are always more distinct than above. — **paupera** Fldr., from Colombia, is *paupera*. according to Dr. STAUDINGER only a nearly black aberration. — Herr WERNICKE of Blasewitz asserts positively that he has also received *saundersii* in large numbers from Rio Grande do Sul (through MABILDE). We cannot find any differences between the 2 pairs before us from this locality and specimens from Colombia, Venezuela and Chiriqui.

Chl. mediatrix Fldr. (91 d), from Colombia, of which we figure the type, is according to the latter very *mediatrix*. similar above to *tellias*, but beneath to *saundersii*. This species (assuming that we are really dealing with a separate species, which we doubt), however, varies extraordinarily above and beneath. Thus we have before us a form from Colombia in which the proximal half of both surfaces is uniform black-brown; the upper surface has on both wings a red-brown median band, in which on the forewing some yellow spots are placed anteriorly; distally to this band there is on the forewing a curved row of white dots, in the middle of the distal margin some yellow-brown spots, and the wings have a submarginal row of yellow-brown spots. On the under surface the median markings are strongly reduced, but both wings have complete rows of yellow submarginal spots and the hindwing has a curved median row of white dots. We name this form **felderi** form. nov. (91 e). *felderi*. — **fassli** form. nov. (91 e) from East Colombia (Medina, 500 m.) is much more gaily coloured, as light yellow *fassli*. spots are present not only on the uninterrupted median band but also in the dark basal part and at the distal margin of the forewing, while the proximal part of the hindwing is not darkened but unicolorous red-brown. The under surface has the ground-colour yellow on both wings. — **fruhstorferi** form. nov., from Bolivia, has the upper surface of the forewing almost entirely black, traversed by a sharply defined dark red-brown submarginal band. — Probably *saundersii*, *mediatrix* and *fassli* are local or seasonal forms of one and the same species.

Chl. lacinia Hbn., distributed from the south of the United States to Bolivia, is usually black-brown *lacinia*. above with white spots, but specimens not infrequently occur with more or less broad red-brown median band on the hindwing and sometimes also on the forewing. The under surface is likewise extraordinarily variable, some specimens having unicolorous black underside and only very slight white macular markings on the forewing, while others are very strongly marked, with a yellow and a red-brown median band, yellow basal and marginal spots on the hindwing and similarly marked forewing. Between these two forms occur transitions of all sorts. — When the red-brown colour of the hindwing is so much extended that only the distal margin remains broadly black, we have **tellias** Bates (91 e), from Guatemala and Honduras. — **ardema** Reak. *tellias*. from Mexico and no doubt also from other localities, is one of the intermediate forms. — **crocale** Edw. (91 f), *ardema*. *crocale*. from Mexico, has a white median band on the hindwing, but on the under surface is as variable as the other forms. — **nigrescens** Wr. (91 e), from the south of the United States, has a unicolorous dark upper surface to *nigrescens*. the hindwing, whilst **rufescens** Wr. and **californica** Wr. are also only intermediate forms. — **pretona** Bdv. also is *rufescens*. *californica*. *pretona*. a not constant intergrade.

Chl. melanarge Bates (91 f), from Guatemala, is black-brown above and has a whitish yellow macular *melanarge*. median band on the forewing and the fringes are chequered with white. The under surface is like the upper, but the hindwing has also the vestiges of a submarginal red macular band and yellowish marginal spots.

Chl. janais Druce (91 f), from Texas, Mexico and Honduras, is a pretty species, in the female also *janais*. of considerable size. This species is very constant, varying only slightly in the number and size of the yellow marginal spots of the hindwing beneath. — **adjutrix** Scudd. (91 f), from Texas, is merely a form with slightly *adjutrix*. less markings.

Chl. hyperia F. (91 f, g), from Mexico, is a beautiful species with pure black upper surface, on which the *hyperia*. pure white spots and broad fringes show up effectively. The under surface, in addition to the markings of the upperside, shows on the hindwing a dark red median macular band, yellow marginal spots and a submarginal row of white dots. — **hippodrome** Hbn., said to be from Mexico, of which we have before us 1 ♀ from the *hippodrome*. collection of Herr FASSL from East Colombia (Medina 500 m.), does not differ from *hyperia* above. The under surface shows larger yellow marginal spots, a broader red median band and yellow spots on the basal part of the hindwing, as well as yellow marginal spots on the forewing. — **quehuala** Reak., from Mexico, is probably *quehuala*.

- only an aberrant form of *hyperia*, in which the red median spots of the hindwing beneath are replaced by yellow spots, while in place of the yellow marginal macular band only some white spots are present. —
- adelina*. **adelina** Stgr. (91 g), from Chiriqui, Mexico and Panama, is smaller and has the upper surface black spotted with white, but on the underside of the hindwing instead of the red median band only a red spot at the inner margin. — **marianna** form. nov., from Mexico, is as large as *hyperia* and very similar to it, but the black colouring is duller, the white subapical spots of the forewing above are not larger than the submarginal white spots and the hindwing also bears a median row of white dots, sometimes almost rudimentary. The red band on the hindwing beneath is anteriorly abbreviated, more obsolete, and the individual red spots are not so sharply separated as in *hyperia*. — **miseria** Fldr., from Mexico, is probably also only an aberrant form of *hyperia*, in which the red median band of the hindwing shows through somewhat on the upper surface, so that the hindwing above appears powdered with red.
- marina*. **Chl. marina** Hbn. (91 g, h), from Mexico, forms a transition to the following group of species. — The under surface is like the upper, but the basal part of the forewing shows red-brown spots and the basal part of the hindwing whitish striation.
- melitaeoides*. **Chl. melitaeoides** Fldr., from Mexico, is similar to *erodyle* (91 h), but the palpus is whitish instead of black with white sides. The hindwing is very yellow beneath, the black being reduced to very small spots; also the forewing has large yellow spots beneath.
- poecile*. **Chl. poecile** Fldr. (91 g), from Guatemala, Mexico and Colombia, of which we have figured the type, differs from
- fasciata*. **Chl. fasciata** spec. nov., from Mexico (Guerrero), in having a large yellow spot in the cell of the forewing, moreover the yellow colour of the hindwing reaches nearly to the base, while in *fasciata* this colour is reduced to a median band. In the ♀ of *poecile* the yellow colour has the same tone as in the ♂, whilst in that of *fasciata* it is ochre-yellow. — In most specimens of *poecile* there is only a red spot in the anal angle of the hindwing; these specimens are also smaller, but have somewhat larger yellow spots on the forewing; the examples before us come from Colombia and Costa Rica. We name this form **rubrigutta** form. nov., but must leave it to the future to settle whether it is a seasonal or a local form.
- erodyle*. **Chl. erodyle** Bates (91 h), from Colombia, Chiriqui and Honduras, is very similar to *poecile* on the hindwing, but on the forewing it has white spots instead of yellow markings. The under surface is likewise very similar to that of *poecile*.
- narva*. **Chl. narva** F. (= bonpland Latr.) (91 c, d), from Venezuela, Peru, Colombia and Mexico, is very constant. The markings on the under surface correspond to those of the upper, but the yellow ground-colour is somewhat paler. — **brunhilda** Stgr., from Chiriqui, is larger and has the basal half of the hindwing yellow-brown, only bearing in the middle a narrow, mostly interrupted, black half-band.
- gaudialis*. **Chl. gaudialis** is before us in 2 forms: **gaudialis** Bates, from Guatemala, with yellow median band on the hindwing, the forewing only with restricted red colouring, which in the cell does not extend so far at the base as in **laeta** subsp. nov. (91 h), from Nicaragua (Cap Gracias, June), and otherwise only occurs in a small spot between the origin of the 1st median vein and the submedian; also in *gaudialis* there are only 4 small white spots on the hindwing instead of the complete row. On the under surface, in addition to the differences of the upperside, *laeta* is distinguished by larger yellow spots at the middle of the costal margin of the forewing and by a row of yellow marginal spots on the forewing. The ♀ (ex coll. FASSL) is much rounder-winged and the red part of the forewing more extended.
- perezi*. **Chl. perezi** H.-Schäff. (91 h), from Cuba, has mahogany-brown ground-colour on the upper surface with black markings and a subapical row of white spots on the forewing. The under surface is similarly marked to the upper, but the hindwing has a submarginal row of small white spots, a row of red dots behind it and a large yellow spot in the cell, the rest of the wing being black.
- tulita*. **Chl. tulita** Dew., from Porto Rico, is similar to *perezi*. As this species is unknown to us we reproduce the description. The forewing is long and narrow, rounded at the apex, the distal margin fluxuose, with very short black fringes, between which some tufts of white fringe are very feebly marked. The distal margin of the hindwing is undulate, likewise adorned with short black fringes; in the incisions of the undulate marginal line, however, we again see weak whitish tufts. In *perezi* the white marginal tufts are much stronger and hence more noticeable. — Upper surface: the ground-colour of the wings above in *tulita* is black with red spots. The red is of almost exactly the same tone as in *perezi* H.-Schäff. HERRICH-SCHÄFFER there calls it blood-red, which description does not seem to me suitable; I would rather say rust-red. Only these two colours are found on the upper surface, that is if we except the white marginal tufts (fringes), which in single examples are almost entirely suppressed. The distal margin of the forewing is accompanied by a double row of red spots; whilst those of the proximal row are rounded, those of the distal are more crescentic in shape. The total number of

the dots in each of the two rows is 8; but the first dot of the distal row (counting from the costal margin) on the upper surface is either not at all or only faintly visible, in the proximal row the second is mostly much reduced and never equals the others in size. The two spots of the last three of these 8 pairs of spots (i. e. those placed next to the inner margin) are more or less fused together. On the hindwing there is only one row of red spots (6 in number) running parallel with the distal margin; the distance of these spots from the distal margin is the same as that of the proximal row of spots on the forewing. The 3rd, 4th and 5th spots counted from the costal margin are in the ♂ either reduced or entirely suppressed. Between the marginal spots and the bases of the forewing and hindwing are placed in the black ground rust-red spots and bands, often interrupted. On the hindwing 2 such bands are especially prominent: whilst, however, in the ♀ these are placed independently of one another, being separated by the black, in the ♂ they are confluent towards the costal margin, as the black runs in a wedge into the red and does not entirely break through it. — Under surface: on the underside of the forewing we likewise see the black ground-colour with the red spots showing through from the upper surface. The lunules at the distal margin are enlarged towards the latter and are divided into a double series by a black line running parallel with the distal margin. The black of the hindwing has a slight steel-blue reflection. Here also the markings of the upper surface are reproduced, but between the rust-red marginal spots and the distal margin there are white lunules, of which on the upper surface nothing at all is visible in the ♂ and at most traces in the ♀. Most of the other spots on the underside of the hindwing have a light yellowish white colour and they are much more numerous, particularly in the ♀; in the ♂ these light spots and bands of the under surface also occasionally assume the dark colour of those on the upper. Both the under and the upper surface of the forewing are almost entirely alike in both sexes. The body is black, with red hairs on the breast, on the ventral side and between the segments reddish; of the same colour are the legs and palpi, the antennae black with the club much thickened, slightly reddish on the underside. — “The butterfly occurs very commonly from October to January in the mountains of Quebredella, but has hitherto been observed nowhere else”. — The butterfly is of the same size as *laeta*.

Chl. seitzii *spec. nov.* (91 h), from Jamaica, is similar to *tulita*, about the same size, but has much lighter *seitzii* ground-colour than this and *perezi* and the marginal spots on the upperside of the forewing are entirely absent, on the other hand *seitzii* has a rather broad black border to the forewing. The under surface is similar to that of *tulita*, but the distal margin of the forewing is not light but, as above, rather broadly black, before it is placed a row of red-yellow spots running parallel with the distal margin and in the black apex there are 3 small crescentic white spots.

Chl. judith *Guér.* This species, which was described in the year 1844 and said to be from Colombia, *judith* does not seem to have been found again. As it is only known to us from the description we can merely give a translation of this. It runs: “*Cethosia judith*. Wings oblong, dentate, forewing with strongly concave hindmargin (= distal margin), apex prolonged and cut off almost straight, brown-yellow with 3 broad black longitudinal bands and black apex. Hindwing of the same colour with black borders and a black transverse band in the middle, the fringes alternately black and yellow. Under surface of the forewing black from the base to beyond the middle, with broad red longitudinal band, distally brown-yellow, varied with blackish, with 2 large triangular yellowish spots, which are marked with brown at the costa and at the apex. The hindwing entirely varied with blackish brown, smoke-brown and yellowish colour, with 2 dentate black lines at the hindmargin, separated by a grey interspace, which is broader at the apex. Body black. Wing-expanse 7 cm. This species is rather nearly allied to *Cethosia bonpland* *Latr.*, but is sufficiently distinct. — According to the shape of the wings this seems to belong to the genus *Chlosyne*, but it is an enigmatical insect on account of the complete difference of the underside of the hindwing from those of the rest of the genus. Perhaps GUÉRIN was dealing with an aberrant and at the same time discoloured specimen of *narva*.

6. Genus: **Microtia** *Bates*.

This genus is only represented by one species, which is likewise nearly allied to *Melitaea*, but differs in a good structural character, the upper radial being long-stalked with the subcostal; hence the upper discocellular is wanting. In this character *Microtia* differs from all the other Nymphalids.

M. elva, from Mexico, Guatemala, Nicaragua and Colombia (Bogota), is a small butterfly, which occurs in very various forms. The best-known form is *elva* *Bates* (88 h), with black-brown upper surface and *elva* brown-yellow bands. The under surface only differs from the upper in having the median band of the hindwing whitish. — **horni** *Rbl.* (88 h) is smaller and has the upper surface yellow with a black stripe at the basal *horni* half of the costal margin, black apex and a black spot in the posterior angle of the forewing; on the hindwing only the margin is black. — **draudti** *form. nov.* (88 h), from Mexico, of which we have specimens before us from *draudti*.

the collection of Professor DRAUDT, is likewise small; forewing black with broad yellow subapical band and large yellow triangle at the inner margin of the forewing. The hindwing is black on the distal half, yellow on the proximal half, and at the costal margin there is a black basal stripe.

7. Genus: **Gnathotriche** Fldr.

Of this genus only 2 species are yet known, both of which occur in the high mountains. As regards the build of the body the genus stands between *Phyciodes* and *Chlosyne*, but it is distinguished from both by the upper discocellular, which is as long as the middle discocellular and has the same direction; the cell of the forewing is likewise open. The club of the antenna is pear-shaped. The butterflies fly in lonely, shady places and are fond of drinking at running water.

exclamationis. **G. exclamationis** Koll. (88 g), from Colombia and Venezuela; the ♂ is similar above to the Satyrid *Eteona tisiphone*, figured at pl. 52 a, but the under surface is essentially different, as in *exclamationis* ♂ it is quite similar to the upperside, only paler. The ♀ (according to the material kindly placed at our disposal by Herr A. H. FASSL) occurs in two very different forms. One is similar to the ♂ and has the upper surface black-brown with a yellow transverse band on the forewing. This form may be considered as the typical *eresia*. The second, which we name **eresia** *form. nov.* (88 g), is deceptively like a *Phyciodes* of the *Eresia* group both above and beneath. The under surface of the forewing corresponds to the upper, but the apical part is lighter and has dark veins and stripes. The under surface of the hindwing is grey with dark veins and stripes and 3 red-brown spots near the base. The distal margin of both wings is narrowly red-brown. It is fond of drinking at running water in quiet, shady places.

sodalis. **G. sodalis** Stgr. (88 g), described from specimens from the Cauca Valley in West Colombia, but also occurring in other parts of Colombia, is of the same size as *exclamationis*, with dark smoke-grey ground-colour and much more indistinct greenish yellow markings. In the cell of the forewing stands a larger basal spot and a smaller, very obscure one in the middle, then follows a similar, but much more indistinct macular band and behind it there is a further row of 5 or 6 small, distinct, round spots. On the hindwing are placed at the end of the cell 3 larger yellowish spots and some indistinct smaller ones, directed anteriorly, so that an almost rectangular band is formed. In addition there are in the distal part 2 very obscure bands composed of greenish spots. On the under surface of the forewing the large yellow spots stand out distinctly, the spot at the inner margin being especially large, and the basal spot in the cell is elongate. The apex is whitish grey with black veins. The under surface of the hindwing is yellow-grey with dull brown-grey marginal stripes; at the end of the cell is placed a spot, before it an orange shade and behind it are whitish yellow spots, corresponding to those of the upper surface; at the base there is a red spot.

8. Genus: **Morpheis** Hbn.

The only butterfly in this genus, which is more often called "*Anemeca*", is extremely near *Chlosyne*. It is a moderately small black butterfly with red legs, and shows a biological resemblance, which is difficult to explain, to some likewise black butterflies of the same size from quite different families. *Morpheis*, namely, like the Pierid *Eucheira socialis* and the Erycinid *Hades noctula*, is very local and also closely restricted geographically, but occurs gregariously, sometimes in swarms. It is very striking that the wing-pattern also — black with light vein-stripes and beneath red base — is reproduced in the *Hades* species.

Head of *Morpheis* large with thick, strongly prominent eyes, palpus long, middle joint swollen, 3rd long. Antenna short with strong, suddenly thickened club, which consists of 15 segments, whilst the antenna itself is composed of 22. Thorax thick and stumpy, forelegs hairy, the others naked and red. Wings of normal shape, without angles and teeth, moderately broad. The butterflies are common, but have quite definite and limited places of flight. The flight itself is heavy and resembles that of *Chlosyne hyperia*.

ehrenbergii. **M. ehrenbergii** Hbn. (93 a). Black above with distinct bone-coloured vein-streaks before the apex, especially on the forewing. Beneath the hindwing has the veins yellowish throughout and the forewing towards the apex, and the base is red. Only known from Mexico: Mazatlan, Oaxaca, Mexico, la Soledad and other places, common locally.

B. Group **Vanessidi**.

The Vanessids are the commonest butterflies almost all over the world. In the northern temperate zone they are chiefly represented by the genera *Vanessa* (Europe) and *Polygonia* (North America), in the tropics by *Precis*, in the southern hemisphere principally by *Pyrameis* and *Hypanartia*. The butterflies are mostly the earliest in the year and even in very

cold regions they often hibernate as imagines. They are distinguished by having strong angles or teeth at the distal margins, between which the wings are often deeply emarginate. The palpi are long and strong, but not inflated, the antennae long, strong and straight, with the clubs spindle-, not spoon-shaped, the head and body in the species which hibernate as butterflies, at least in the autumn brood with thick, furry hair. The colours are nearly always very bright, with fiery red or variegated bands or margins. They are all good fliers, rivalling birds in the rapidity of their movements. They are protected by no internal fluids, but the butterfly when at rest is mostly concealed by the bark- or leaf-like under surface. Many species are fond of flowers, while numerous others do not touch them, but frequent the flowing sap of wounded trees, syrup, fruits, rotten substances, etc. The larvae are all spined, the spines harder, longer and more pointed than in the preceding group; also the pupae mostly have stronger and more pointed angles than those of *Argynnis* and *Melitaea*, often with silver or gold tips. In America the species extend from Alaska to Patagonia and ascend in the mountains to very considerable elevations.

9. Genus: **Polygonia** Hbn.

Here belong about 50 forms distributed over the northern hemisphere, which are all very similar. They were formerly referred to the genus *Vanessa* and are even now better known under KIRBY's generic name *Grapta*. They are easily distinguished from the true *Vanessa* by their larvae, which are not gregarious but solitary and bear spines on the frontal hemispheres, which are commonly designated "eyes." From *Pyrameis*, to which they likewise approximate, they differ in that the larvae live free, not in spun-up leaves. The eggs are also differently shaped from those of *Vanessa* and *Pyrameis* and are mostly not laid in clusters but piled up one upon another into chains. Attempts to separate *Polygonia* anatomically from *Vanessa* in the imago have not thus far been successful and even the anatomical investigation of the palpal scaling, the genitalia of the ♂, etc., have failed. Superficially, however, the genus is easily distinguished by the more deeply excised margins of the wings, the almost absolutely unicolorous upper surface (brown, with dark spots) and by the very great similarity of the butterflies where the larvae often differ greatly. The latter live principally on Urticaceae and are very strikingly coloured. The butterflies are met with at almost every season of the year, even on warm winter days, and they fly both in the gardens of the towns and also at the edges of woods and on the open fields. Almost all the species of the genus are at least locally common.

P. interrogationis F. (= *fabricii* Edw.) (93 a). The largest form of the genus and the one with the strongest sexual dimorphism. The forewing has below the apex a long tooth, pointing downwards, and the hindwing in the distal margin a tail, as long as that of a *Papilio machaon*. At the end of the cell of the hindwing beneath there is a bright metallic *c* or *g*, sometimes interrupted. — **umbrosa** Lintn. (93 a) is the summer form, with a shorter tail, the teeth below the apex of the forewing also shorter, but especially distinguished by the almost entirely black-brown upper surface of the hindwing, which is only relieved with red-brown in the basal and costal part, and by the somewhat more confused markings of the under surface. — Egg green, either laid singly or in chains of 4—8. Larva dirty white or light flesh-coloured, isabelline yellow or whitish grey, also even blackish with brownish or yellow red, thick, almost knob-like spines; on nettles, elms, hops, etc. Pupa wood-coloured grey-brown with very long dorsal tubercle and small silvery points on the back of the abdomen. The butterfly lives from the autumn until May and again, as *umbrosa*, in June and July. There is not, however, such a constant distinction between the two generations as in *Araschnia prorsa* and *levana*; often eggs laid at the same time produce half one and half the other form, much as in the European *c-album* (on the other hand in the East Asiatic *c-aureum-pryeri* a constant alternation takes place in the species, the hibernated specimens always belonging to the form *pryeri*). Common almost everywhere in the United States, only wanting in the western states; throughout the year, even in the earliest spring on sugar-maple. interrogationis.

P. comma Harr. (= *harrisii* Edw.) (93 a). Mostly smaller than the preceding, the under surface much more variegated, usually traversed by a rosy white, light violet or fleshy reddish irregular median band, which in the disc of the forewing sends out light stripes along the veins. On the upper surface the hindwing may be red-brown with dark spots or (in the summer form) entirely suffused with dark black-brown; the latter is the form **dryas** Edw. (93 b), which stands in the same relation to *comma* as *umbrosa* to *interrogationis*. — Larva very variable, black with white spines, grey, tinged with greenish, or entirely snow-white, with similar or variegated spines. Like the preceding, all the year round on elms, hops, nettles, etc. Pupa with somewhat shorter dorsal protuberance but very strong points on the back of the abdomen. Like the preceding widely distributed over the east of the United States from Canada to Texas, but wanting in the west. Common. comma.

P. satyrus Edw. (93 b). This species differs from the preceding in the lighter yellow-brown upper surface, on which the dark marginal markings are reduced, particularly on the hindwing. Under surface more unicolorous, more yellow than dark brown, shaded with dark brown across the middle of the wings and at the distal margin between the teeth. — **marsyas** Edw. (93 b, c) is the lighter form, in which the hindwing has only traces of dark shading towards the distal margin. — Larva black with yellowish or reddish spines; from the 3rd segment onwards runs along the dorsum a broad, greenish or greyish white saddle-stripe. Like the preceding on nettles, etc. From Ontario westwards, over the Rocky Mountains to the Pacific coast, but more sparingly and more local. satyrus.

zephyrus.

P. zephyrus Edw. (93 b). This butterfly about corresponds to the eastern *c-aureum*. The distal part of the upper surface is very light red yellow, scarcely dark-shaded, the *c* on the underside of the hindwing finely marked but large and wide open. — Larva very similar to that of our *c-album*, anteriorly red-brown, posteriorly with white saddle; has been found on *Azalea occidentalis*. The butterfly is common in places, flies all the year round and is distributed from the Rocky Mountains westwards to the Pacific Ocean.

chrysoptera.

P. chrysoptera Wr. (93 c). In this form, which nearly approaches the preceding, the hindwing is of a fiery yellow-red, with all the brown shading of the distal part wanting, being replaced by dull orange-red splashes and clouds. The ♂ has a deep black-brown distal border to the forewing and very dark spots; under surface wood-coloured, the *c* thin but very widely opened. California.

faunus.

P. faunus Edw. (93 c, d). Judging from both butterfly and larva this is the American *Polygonia* form which corresponds to the European *c-album*. Upper surface much darker yellow-brown than in the preceding, more strongly and darkly spotted and both wings broadly margined with black-brown. Beneath the silvery *c* of the hindwing, exactly as in the European species, is short-curved, compact, strong; the under surface itself very variable individually. The autumn brood with the wings more strongly dentate. — **rusticus** Edw., which seems to be near the Californian form *silvius* Edw. (unknown to me), is more intensively coloured, as the somewhat lighter red-yellow ground-colour contrasts with the dark spots and margins, especially on the hindwing; west coast of the United States. — Larva of *faunus* almost exactly like our *c-album*, but strangely enough is said to live on willows. EDWARDS, who did not at the time know the larva, argued in a long article against the supposition of a close relationship between *P. faunus* and *c-album*.

*rusticus.**gracilis.*

P. gracilis Grt. (= *c-argenteum* Scudd.) (93 d). This form, which belongs in the same group with *progne* and the small *hylas*, forms the continuation of the East Asiatic *agricola*, which is not (as vol. I states) only a local form of *c-album*, but in places occurs together with this, just as in parts of Europe *egaea* flies together with *c-album*. *gracilis* may be easily known by the very dark black-brown margins, before which (on the forewing) or in which (on the hindwing) are placed small light yellow spots. The under surface resembles that of *agricola* or *hamigera* (cf. vol. I, pl. 64 a), whilst the upper, which is very similar to *faunus*, more recalls *c-album* (cf. vol. I, pl. 63 e). The larva is not known, the butterfly is essentially Canadian and only penetrates into the north of the United States. Westwards it extends to Alaska and specimens which have been taken beyond Behrings Straits in Kamschatka scarcely deserve a separate name. On the other hand in Alaska occurs together with this species also the smaller *progne*, which may possibly represent merely an offshoot of *gracilis*.

progne.

P. progne Cr. (= *grogne* F.) (93 d). This very variable species is distributed over an enormous area and extends almost through the entire continent of North America from the Atlantic coast to Alaska. Southwards it extends in the eastern states as far as Pennsylvania. Above the wings have small but sharp spots and dark margins; before the distal margin a chain of small light yellow spots. The under surface marked as in *gracilis*, but the distal part more sharply separated from the basal, lighter, more strongly contrasted. Larva more uniform yellow-brown, mostly without distinct white saddle, with variegated spines, on currants and gooseberries, also on elms. Pupa grey-brown, with a shorter, more obtuse dorsal protuberance, as in *faunus*. In the southern part of its range the butterfly is to be met with almost the whole year round, hibernating, the generations not differing sharply, but occasionally occurring in a slightly different form (*l-argenteum*) and an aberration corresponding to the European *f-album*, sometimes with more brown (south-east) or grey (north-west) under surface. Common in places, although not every year.

oreas.

P. oreas Edw. (93 d). Similar to the preceding species, but mostly larger, the yellow spots before the dark distal margin, especially on the hindwing, larger, lunate, the under surface of both wings usually more unicolorous, dark brown, though varying strongly and in the smaller form *oreas* Edw. sometimes almost unicolorous black-brown with small, dull *c*. The black spots on the upper surface are usually much more extended, commonly the ground-colour itself deeper and duller red-brown. The larger, proximally bright tawny form is **silenus** Edw. (9 e, d, e), which is easy to recognize by the light yellow submarginal lunate spots of the upper surface standing out strongly from the ground-colour. In both forms the wings, particularly the hindwing, are very deeply dentate. Only in the west of the North American continent, from Washington and Oregon to Alaska. Locally common.

*silenus.**haroldi.*

P. haroldi Dew. (93 e). This is one of the southern species of the genus, from Mexico. May be known by having the dark basal part of the wings distinctly defined against a lighter distal part, which again is distally dark-margined. The hindwing above very little spotted. Hitherto very rare in collections; our figures are drawn from the type in the Berlin Museum; I have seen one specimen in coll. SCHAUS.

g-argenteum.

P. g-argenteum Dbl. & Hew. (93 e). A large species, and only in size resembling *interrogationis*, with which GODMAN and SALVIN not very happily compare it. It is probably more nearly allied to *faunus* and *zephyrus*, and is thus not very far from the European forms. It is, however, much larger, the upper surface, especially in the distal part, more yellow-red than brown-yellow, the light yellow spots before the marginal band very large and light, before the distal margin dark lunules. Mexico, not common: Oaxaca, Popocatepetl, Guerrero, in the highlands.

P. l-album *Esp.* (= v-album *Schiff.*) (vol. I, pl. 63 d). As large as the largest *interrogationis*; the typical form not occurring in America but in the Old World, where it flies in eastern Europe and as *samurai Fruhst.* in Japan. The American form, **j-album** *Bdv.* (93 f), is as a rule larger and the upperside of the hindwing much lighter (clay-yellow instead of dark brown) than in examples from the Old World. The species may be at once distinguished from all the other *Polygonia* by the whitish or bone-yellow spots at the costa of both wings. ab. **aureomarginata** *Cock.* is lighter, more gold-yellow, and the distal margin of the wings unspotted. In America, as in the Old World, aberrations occur with irregularly confluent blackish spots: ab. **chelone** *Schultz.* — Larva iron-grey or earth-brown with clay-yellow spines, on willows. More in the north, from Labrador to Alaska, southwards as far as the central United States, singly and not common. — The Japanese form (*samurai Fruhst.*) (vol. I, pl. 63 d) is intermediate between the European and that of North America. The species forms a distinct transition to the genus *Vanessa*, but the imago has the stronger teeth in the wing-margins and the hook-shaped white median marks on the hindwing beneath and the larva the spines on the head which characterize *Polygonia*.

10. Genus: **Vanessa** *F.*

The „spring-heralds“ of the eastern hemisphere, with one exception (*io*), are represented in America by forms which correspond with those of the Old World. Thus *californica* corresponds to *xanthomelas* or *polychloros*, *milberti* to *urticae*, *cyanomelas* to *canace*; *antiopa* is common to both hemispheres. Wings broad, strongly angled, above very brightly coloured, beneath protectively resembling bark. The larvae have no spines on the head itself, on the other hand back and sides are strongly spined. They live in nests on nettles, willows, fruit-trees, birches, elms, etc., and mostly remain near together almost to pupation. The butterflies live both in the plains and the mountains, are good fliers, lively sun-loving insects and hibernate; most species are very common.

V. californica *Bdv.* (93 e). Similar to *Pol. j-album*, but without the white median mark on the hindwing beneath; the costal spots of the forewing more sharply defined, the distal margins broadly blackish brown. The larva likewise similar to that of *Pol. j-album*, blackish with variegated spines, venter lighter, without true spines on the head; on *Ceanothus thyrsiflorus*. The butterfly flies in the west of the United States and is common.

V. milberti *Godt.* (= *fureliata Say*) (93 e). Basal half of both wings black with red cell-spots; distal part red-yellow, proximally, especially in the ♀, lighter yellow; margins of the wings blackish, spotted with yellow and blue. Under surface somewhat recalling that of *V. urticae*, but the disc of the forewing less yellow, while the whole distal part of both wings is lighter. — Larva more brownish than that of the European *V. urticae*, with yellow spots and spines; on nettles. Butterfly distributed in the whole of northern North America, from Newfoundland to the Pacific coast, almost everywhere common, but mostly far less abundant than is *urticae* in central Europe. — The lighter form, **subpallida** *Cock.*, is that of the Rocky Mountains; its larva lives on *Urtica subpallida*, *gracilis*.

V. cyanomelas *Dbl. & Hew.* (93 f). Under surface almost as in *polychloros*, to which (like the Asiatic *cyanomelas*, *canace* group) this species approximates; above black with blue margin and washed-out blue submarginal band. Mexico, very rare, only a few specimens known; I figure it from an example in FRUHSTORFER's collection.

V. antiopa *L.* (= *morio L.*, *grandis Ehrm.*, *hippolyta Lyman*) (93 f, vol. I, pl. 63 b). The „Mourning Cloak“ is black-brown, wings with yellow margin and blue dots before it. Distributed over the entire northern hemisphere except North Africa, becoming rare in the south but occurring as far as Venezuela; there small and confined to the mountains. — ab. **hygiaea** (vol. I, pl. 63 e) has the margin broad and the blue dots reduced or entirely absent. — *antiopa* shows no constant variation, as was formerly believed, in the form from the United States (to which the name *lintneri Fitch* was given), but only in the extreme north, in Alaska. From there a specimen lies before me with very bright red-brown upper surface, white (not worn) margin slightly tinged with violet and on the under surface a light band across the middle of both wings; I figure it under the name **hyperborea** *form. nov.* (93 f). — Also from the extreme south of its range a form has been named: **thomsoni** *Btlr.* It differs in the yellow margin, which is twice as broad on the hindwing as on the forewing, occupying nearly $\frac{1}{3}$ of the whole hindwing, and in having the subapical spot of the forewing followed by a chain of smaller yellow-white spots arranged in an angled row. Described from a specimen in the Tring Museum, but probably scarcely constant. — Larva black with red prolegs, on deciduous trees, such as willows, birches, pears, poplars, elms. Whilst in Europe the species is mostly not very common and has only one generation, in North America it is in many places abundant and has often two generations. The larva is very easy to rear and changes

into a grey-brown pupa with very strong teeth on the anterior part. The butterfly appears after 3 or 4 weeks and is not protected, but when its powers of flight are fully developed is not pursued by birds; newly emerged specimens, on the contrary, are eagerly seized upon by insect-eaters. Of over 100 freshly emerged *antiopa* which I released all, even to the very last one, were caught by a number of *Muscicapa grisola*. The butterflies do not visit flowers, but drink at bleeding trees and at fruit (on which they always rest head downwards), as well as at wet places in the road. The flight is quiet and graceful. The pupa is nearly always attacked by small ichneumons, which pierce it at the moment when the larval skin is shed, so that only about 10% of all the larvae that pupate in the open produce butterflies.

11. Genus: *Pyrameis* F.

The species of *Pyrameis* have not the sharp teeth on the forewing which characterize the preceding genera. The apex of the forewing is always spotted with white. The larva has no horns on the head and does not live free and gregariously, but singly and in a habitation formed of leaves drawn together. Most species of the genus are very common; some, however, are confined to islands, while others are true cosmopolitans. Very striking is the prevalence of the *Pyrameis* species on certain islands: while on the continents in most places 2 species occur, or at most 3, there are 4 on the Canary Islands and 4 in New Zealand, which is otherwise very poor in butterflies; on Teneriffe *P. vulcanica*, *atalanta*, *virginiensis* and *cardui*, in New Zealand *itea*, *gonerilla*, *atalanta* and *kershawi*. The largest and most beautiful species — *P. tameamea* — inhabits the remote Sandwich Islands.

atalanta. **P. atalanta** L. (= *admiralis* Retz.) (94 a and vol. I, pl. 62 c). Deep velvety black-brown; forewing with black, white-spotted apical part, preceded by a scarlet band; hindwing with red, black-dotted marginal band. Europe, Asia Minor and North Africa; accidentally introduced into New Zealand; in America everywhere in the United States, from there southwards to Guatemala and on Haiti. North American specimens differ from European in the somewhat narrower band of the forewing, African are about intermediate between the two. — Larva black-grey, yellow-brown or red-brown, strongly chequered and marked with yellow; on *Urtica*, *Boehmeria* and hops. The butterfly from July to the autumn, in warmer regions hibernating regularly, in colder only exceptionally. It is especially fond of grape and beer sugar or the sap of wounded trees. Only rare in the south.

cardui. **P. cardui** L. (= *carduelis* Cr.) (vol. I, pl. 62 d). Apex of the forewing similar to that of the preceding species, disc fleshy red to tawny, spotted with black. Separate names have been very unnecessarily given, small specimens being called *minor*, pale ones *pallens*, those with few spots *inornata*, very strongly spotted *elymi*; cf. vol. I, p. 199 seq. In the Old World everywhere; either common and endemic, or (in the north) annually as an immigrant, and only temporarily sedentary as a summer brood. In North America it is much rarer than in the Old World and by no means generally distributed; southwards it certainly extends to Central America; its reported occurrence in South America is probably due to some mistake; a form known from Australia and *kershawi*. New Zealand, *kershawi* McCoy, has been erroneously reported from Central America. In addition to the blue-pupilled eye-spots on the hindwing above, this form has also a quite different under surface, which in the examination of the alleged American *kershawi* was not taken into account. Except in *kershawi* no distinct racial variation at all can be detected; neither the East Asiatic nor the African specimens allow of separation as subspecies. Cf. FRUHSTORFER in vol. IX, p. 525 of the „Macrolepidoptera of the World“. — The larva is iron-grey or yellow-brownish, the ground-colour mostly similar to the earth on which the infested thistle stands, with short, strong spines, which urticate somewhat when touched; marked with light, fine, more or less interrupted lines, spots and dots. Chiefly on thistles, the leaves of which it draws together loosely into a tent in which it lives. But it also occurs on nettles; and in certain years in which it multiplies enormously (as in South Germany in the summer of 1879) the huge swarms of larvae sometimes destroy the nettles over wide areas. The migratory instinct of the butterfly is wonderfully developed. The ♀♀ appear sometimes to migrate alone or separated from the ♂♂, at least the numerous specimens which I took where the insects had assembled or during their journeying proved without exception to be ♀♀. SKERTCHLY in Africa observed the simultaneous emergence of whole swarms of *cardui*, which directly their wings were dry started on their travels. *Merops apiaster* has been noticed as a bird that preys upon *cardui*. — *cardui* appears singly in the spring in migrated (north) or hibernated (south) specimens. The larvae are full grown from July to September, the butterflies appear in the north chiefly in August. The ♂♂ dash rapidly along on mountain-summits and high roads and love flowers of all sorts; they rest on the ground nearly always with the wings closed, but occasionally with them spread quite wide and play with *Pyrameis* of their own or other species, by preference with the ♂♂ of the *atalanta* group; on these occasions the *atalanta*-like butterfly always rests head downwards on a rock or stone, but *cardui* sits before it horizontally on the ground with its head turned towards its playmate. This relation I have observed between *atalanta* and *cardui* in Europe, *indica* and *cardui* in Japan, *vulcanica* and *cardui* on Teneriffe and *itea* and *kershawi* in Australia. — It may be assumed that *cardui* will spread more widely and become commoner in America.

P. carye Hbn. (= *charie* Blch., *muelleri* Letch., *caryae* Holl.) (94 a). Similar to the preceding, as also *carye*. on the under surface, easy to distinguish by the light subapical band on the upperside of the forewing, which in American *cardui* is indeed occasionally somewhat clouded, but in European nearly always quite pure white, never of the tan-yellow ground-colour typical of *carye*. The eye-spots on the hindwing, as in *kershawii*, pupilled with blue above also. — Larva blackish with small light spines and spots, on Malvaceae and thistles. Widely distributed, a true prairie butterfly, frequenting wide grassy plains and resting with closed wings on heaps of earth or prairie tracks. In North America more in the west, in hot regions (Mexico) preferring the highlands and mountains, in temperate South America again descending to the plains, where I met with it commonly in February near Montevideo. At Buenos Aires still common on corn-fields, in Patagonia often the only common species; the larvae there sometimes in enormous numbers and when they become excessively abundant taking to cannibalism (C. BERG). I took the species especially in company with the South American form of *Pyrameis huntera*. Northwards of South Brazil I no longer found *carye* in the plains.

P. huntera F. (= *hunteri* Hbn., *belladonna* Pet., *iola* Cr.) (94 a, b). This species, which occurs in the *huntera*. yellower form *virginiensis* Drury (94 b) in North America and on the (Palearctic) Canary Islands, may be at *virginiensis*. once distinguished from the preceding by the two large eye-spots in the distal part of the hindwing beneath. South American specimens in fresh condition are a wonderful rose-colour, especially those that I took in Bahia and at Rio. In both places the butterfly flies together with *Pyram. myrinna*, which it somewhat resembles in flight, though differing in its smaller size and in having less black on the hindwing. These splendid rose-coloured Brazilian specimens are sold under the name *rubia* S'gr., but the colour withstands the influence *rubia*. of light very badly and soon changes to brownish, such as is shown from the first by typical *huntera*, like those I took on the lower La Plata. Old specimens in collections may even fade to such an extent as to resemble the pale North American specimens known as *fulva* Dodge. — In *braziliensis* Moore, from Brazil, the black *fulva*. spots on the upper surface are enlarged, so that the insects, especially when taken fresh, give a darker im- *braziliensis*. pression. — *altissima* Rosenb. & Talbot, from Peru and Ecuador, approximates to the preceding and like them, *altissima*. has the black increased; the markings of the under surface white, not tinged with yellow; a mountain form. — Larva iron-grey, with weak spines and black head; on the back of each segment is placed a velvety black transverse spot, which bears red dots and small, light subdorsal spots. On Gnaphalium and Antennaria. The larvae of the South American form I do not remember to have seen so brightly coloured as it is represented in the figures of *virginiensis* given by ABBOTT, BOISDUVAL and HOLLAND. The butterflies fly much more slowly than those of *cardui* and *carye*; they are nearly always found only on flowers; they do not favour the open steppes, but places where there is luxurious vegetation, and in Brazil they are sometimes met with in clearings in the middle of the primeval forests; in the hot districts they fly all the year round and are common.

P. terpsichore Phil. (94 a). Similar to the preceding species and probably only its representative in *terpsichore*. the trans-andine south-west. On the hindwing above only 2 separated ocelli, which are sharply cut off from the little marked disc by a black curved stripe. Also the reddish-coloured disc of the forewing less spotted than in the preceding. Beneath the bark-brown ground-colour of the hindwing is transversed by an irregular yellow median band, with silver-white spots and margins. Chile; common.

P. myrinna Dbl. (94 b). Similar to the two preceding, but easy to distinguish by the straight, regular, *myrinna*. deep black postmedian band of the hindwing. On the under surface this band is sepia-brown and encloses the two large eye-spots. The ground-colour of the upperside is a magnificent rose-red (ab. *incarnata*) so that the insect is in life one of the most beautiful butterflies that I know, though specimens in collections give no idea of it. Even in papers the colour fades in a few weeks after death, in set specimens after only a few days, and changes into the dull rose-colour which is shown in our figure. — Full-grown larva red-brown, with small white transverse bands on the posterior part of the segments and a light lateral band below the spiracles and with black spines; on *Achyrocline flaccida*, the leaves of which it nibbles in order to spin itself a domicile from the chewed fragments. The pupa reddish white or with a dull yellow gloss, with washed-out grey markings and more distinct longitudinal stripes on the back of the abdomen and above the stigmata; the tubercles blackish. The butterfly flies in Brazil and in a scarcely different form in Ecuador. Whether this form is the *aequatorialis* Wagn. which WAGNER mentions as a „representative species of *cardui*“ from Chimborazo, *aequatoria-* but does not recognizably describe, or whether this is identical with the form of *huntera* passing as *braziliensis*, *lis*. or only a synonym of the preceding species, I cannot determine; WAGNER only records it as a „still undescribed species“ in his collection, without giving any precise distinctions. It would be well to strike out this „i. l.“ name entirely.

12. Genus: **Hypanartia** Ky.

This genus was formerly made to include a number of African forms which, however, were afterwards rightly separated by ROTHSCHILD and JORDAN as *Antanartia* and are dealt with under this name in vol. XIII, p. 227 of the „Macrolepidoptera“. It is so near to the preceding genus that many species, e. g. the small *H.* (now *Antanartia*) *abyssinica*, until quite recently oscillated between the two genera. The species which concern

us here are characterized by a tooth, mostly long, at the end of the upper median venv. The apex of the forewing in many species is exactly as in *Pyrameis*, and the coloured bands on the wings in some species also show the position of the analogous bands in *Pyr. atalanta*. — The larvae are rather short and thick with short fleshy spines and rough, but not horned head. They live until pupation in cases formed of leaves and change after the 5th moult into smooth pupae with quite short conical horns on the head and strong saddle across the middle of the back, somewhat compressed laterally with weak dorsal carination.

lethe. **H. lethe** F. (= *daemonica* Hbn. ♂, nec ♀) (94 b). Above tan-yellow, the apex of the forewing yellow and spotted with white; a rather straight transverse band runs from the end of the first third of the costa to beyond the anal angle; it is separated from the more strongly brown-yellow disc by a faint black nebulous streak. Under surface light ochre-yellow with red-brown reticulate markings, the costal part of the hindwing lighter. Brazil, especially on the east coast, at Rio Janeiro, on the Corcovada, at Santos in the lowlands towards São-Vicente, everywhere in the Serra do Mar, in Sta. Catharina, at Blumenau, particularly in moist valleys. Northwards to Texas. — Larva very variable, at first blackish with small white dots, when full-grown nearly white, before pupation becoming yellow; the spines after the moults white but most of them afterwards become black, only one here and there remaining white. On *Boebmeria* in leaf domiciles. Pupa light-green, with dark green oblique streaks and some silver spots. It is very mobile and even after a slight touch it keeps wriggling for a long time. The butterflies fly over the forest-paths and rest on the branches of trees or bushes overhanging the road, the head directed towards the road, mostly at a height of 2—3 m., in exactly the same way as the Old World *Symbrenthia* and many *Polygonia*. When disturbed they persistently return to the same place or settle on a neighbouring branch, so that they can be caught without any difficulty. They sometimes leave their posts of their own accord, fly rapidly several times up and down the road without quitting it and return again to their resting-places. In South Brazil a large species of Mantis takes advantage of this habit and, concealed by its leaf-like appearance, lies in wait at the ends of the branches and catches the butterfly; numbers of examples of this species daily fall victims to it. The species is common.

godmani. **H. godmani** Bates (= *atropos* Fldr.) (94 c). Similar to the preceding, but quite considerably larger; the whole apical half of the forewing black, only quite at the apex sparingly spotted with white, not yellow. Under surface quite different to that of the preceding, very brightly marked with white, bluish and yellow. Mexico, through Central America to Colombia; not rare.

bella. **H. bella** F. (= *zabulina* Godt., *daemonica* Hbn. ♀) (94 c). Likewise similar to *lethe*, not larger than the latter, the apical half of the forewing with 2 rows of spots, as in *lethe*, but these are white, not of the yellow ground-colour. The under surface is quite different, recalling *Pyrameis* in the scheme of markings, the border with a distinct tooth below the apex, whilst in *lethe* the border of the forewing is quite feebly dentate or only somewhat undulated and in *godmani* nearly straight, slightly crenulate. Very common in Brazil, at Rio and Santo, habits and localities exactly as in *lethe*, so that the two species are mostly captured together.

paullus. **H. paullus** F. (= *tecmesia* Hbn.) (94 c). Somewhat recalling a light coloured *lethe* or *bella*, but the black light-spotted apical part of the forewing is here entirely of the tan-yellow ground-colour, only dark-margined and sparsely spotted with black; hindwing with 2 points. From the Antilles.

kefersteini. **H. kefersteini** Dbl. (94 c). Both wings strongly dentate, the hindwing almost tailed. Upper surface copper-brown, forewing without the yellow oblique band of *lethe* and *bella*, the apical part black, with bright vitreous white spots. Venezuela, Colombia, parts of the Amazon region, and reaching as far as Bolivia. — In *indigii*. **H. indigii** Fldr. (94 c) the forewing is less sharply angled, the apex not so strongly produced, the colour more copper-red and the transparent white bands and spots in the apical part of the forewing are much enlarged, producing a superficial resemblance to *Anartia amathea*, which flies with it in the same districts (the north of South America). This northern or western form seems to be considerably rarer than the more southern *kefersteini*.

dione. **H. dione** Latr. (94 c, d). This common form inclines in its superficial appearance towards certain *Megalura* species, as *lethe* does towards *Pyrameis* and *kefersteini* towards *Anartia*. Thus the hindwing is produced into a long point; the upper surface velvety brown, with 6 or 7 parallel transverse stripes, between the median veins a hyaline comma-shaped spot, and often in addition some small hyaline dots on the forewing, which look like pin-pricks. Throughout the north of South America, distributed from Venezuela to Bolivia and mostly not rare. It also occurs in Guatemala, although rarely. Between this locality and Colombia, however, it seems to be wanting and to be mostly replaced by the next species.

arcae. **H. arcae** Godm. & Salv. (94 d), near the preceding species, as is already evident from the long point of the hindwing and the hyaline comma-spot in the middle of the forewing, and representing it in Panama, where the true *dione* is wanting. *arcae*, named after its discoverer ARCE, is larger than *dione* and the forewing has an orange wedge-shaped band in the distal third of the forewing. This is due to the fact that in the haunts of *arcae* the commonest *Megalura* is not *Megalura chiron*, the model of *dione*, but a species of the *M. marcellus* group, which bears a wedge-shaped orange band beyond the middle of the forewing. Costa Rica and Panama, apparently not common.

H. splendida *Rothsch.* (94 d), from Peru, seems to be a rare species and was only recently discovered. *splendida*. In it the brown-yellow is extended over the entire upper surface, which produces a certain similarity to *Megalura peleus* (= *petrea*, 96 f). This is heightened by the straight, stalk-like tail of the hindwing, the length of which is further increased by a sinus in the distal margin near the extremity of the radials. This gives the hindwing a somewhat distorted appearance, which renders misidentification impossible.

13. Genus: **Precis** *Hbn.* (*Junonia* *Hbn.*)

The *Precis* species are characteristic butterflies of the hot regions and like *Catopsilia* are the first to meet the traveller in a tropical country; only *Anartia* is equally prominent in America. In Africa and East India *Catopsilia* and *Precis* play much the same role as *Pieris*, *Gonepteryx* and *Vanessa* in the north of Europe. The egg is almost spherical, with longitudinal ribs, the larva short and strongly spined; horns on the head may be present, but are sometimes wanting. The larvae live free on Labiatae and Acanthaceae, on *Justitia*, *Vitex*, *Antirrhinum*, *Achyranthes*, etc. The pupae have the anterior part rounded and differ from those of *Vanessa* in the absence of large points on the head; so far as I remember, they have no metallic spots. In the butterfly the distal margin of the forewing is feebly angled at the end of the upper radial, the subcostal 5-branched, the branches at their origin almost equidistant. The lower discocellular is wanting on the forewing, so that, as the hindwing also has no transverse vein, both cells are open; on the hindwing the costal is strongly curved. The shape of the wings varies in the Old World species to such an extent that even the course of the veins is somewhat modified by it; with the fall of the leaf the under surface begins to become leaf-like, the large eye-spots disappear and are replaced by leaf-like markings: the midrib of the leaf is copied by a stripe from the costal margin of the forewing to the anal angle of the hindwing, which is produced like a leaf-stalk (cf. figure of the underside of *P. almana*, vol. I, pl. 62 a, also many figures in vol. IX, pl. 116—117, as well as vol. XIII, pl. 51 *). The size of the eye-spots on the upper surface varies quite considerably even in specimens taken at the same place and on the same day, and there is also great variability in other directions. The butterflies are without exception common, except at the extreme limits of their range; they migrate, sometimes gregariously. 175 forms have been described hitherto, of which only 14, which perhaps are all only forms of one species, are from America. The former separation of the genus *Junonia* has not been found tenable.

P. lavinia. In America it is possible that only one, but very variable, species of *Precis* occurs, which again is merely the western representative of the Old World *villida*, while *villida* itself is nearly related to many forms of *orithya* which are distributed over the whole of South Asia (vol. I, pl. 62 b). Of the American forms many are geographical, such as a small form with the upper surface entirely orange-yellow, which the dealers call *livia* *Stgr.* (94 d) and in which I think I recognize FELDNER's *vestina*; for this no locality is given, but it is described as not unlike a small *vellida* (= *villida*). This similarity also holds if we compare it with one of the *villida* forms distributed in North Australia and in many of the South Sea Islands, which are likewise predominantly yellow-red above. It occurs in Bolivia and seems to be a mountain butterfly. — The North American *coenia* *Hbn.* (94 e) also is nothing more than a form of *lavinia*, with the band of the forewing very pale, very unevenly forked, and the upper eye-spot of the hindwing unusually enlarged. *coenia* is a very common butterfly in the south of the United States, extends northwards to New England and southwards over the whole of Central America and the larger West Indian Islands to Colombia. — *lavinia* *Cr.* (94 d) has been split up into a large number of forms, which, however, for the most part represent nothing more than accidental and individual aberrations. The typical *lavinia* *Cr.* (= *evarete* *Cr.*, *flirtea* *F.*, *larinia* *F.*, *esra* *F.*, *cortez* *Hbst.*) is characterized by blue-green, but dull reflection on the upperside, particularly in the ♂, in which the band of the forewing shows all degrees of development and which differs constantly from *coenia* in the smaller peacock eye-spot between the radial veins. Out of a swarm of this butterfly which I met with at Palermo, on the La Plata, I caught many hundreds of examples, from which the most diverse series of forms can be picked out, ranging from those with the upper surface entirely dull brown (= *genoveva* *Cr.*) to those with the wings almost uniformly blackened above and beneath (= ab. *infuscata* *Fldr.*) (94 e). — ab. *negra* *Fldr.* is larger than the North Brazilian form, occurs as far as Guiana and has the wings broader and more rounded; it is also found, however, in the extreme south, where in Uruguay together with small, pointed-winged specimens larger, broad-winged examples occur almost at the same season. — ab. *zonalis* *Fldr.* has the forewing more produced and the reddish submarginal band on the upperside of the hindwing is almost entirely obsolete. — ab. *pallens* *Fldr.*, from Venezuela, is almost exactly like a dull-coloured *genoveva*, but has more distinct gloss on the upperside of the hindwing, and on the forewing the spots of the band placed in the cell are very much lighter than in Surinam *lavinia*. — ab. *divaricata* *Fldr.* is likewise very near to *genoveva*, especially on the under surface, but is there paler, more yellowish in tone, and the band in the distal part is strongly constricted below the fork. — ab. *incarnata* *Fldr.* is similar, but the band of the forewing, on the contrary, is much widened and somewhat reddish in tone. — ab. *constricta* *Fldr.* has the forewing grey-brown, the distal band narrowed, constricted in the middle, the proximal arm of the fork narrower than in *genoveva*, the lower eye-spot of the hindwing enlarged; from Colombia. — *hilaris* *Fldr.*, from Paraguay, is probably the nearest to typical *lavinia*.

*) Concerning the seasonal dimorphism of *Precis* cf. AURIVILLIUS in vol. XIII, p. 227 of the "Macrolepidoptera."

the ♂ above almost identical, but with stronger metallic gloss, the band in the ♂ slightly constricted below the fork, the antemarginal stripe lighter and broader, and also on the hindwing the submarginal band is widened and ochre-brown. The ♂ on which this form was founded was taken together with a ♀ of the typical *lavinia* *). *occidentalis*. A sharp separation of the western form, such as FELDER attempted under the name **occidentalis**, is scarcely tenable. ♀♀ of this form are said to differ constantly in the broader forked band of the forewing. This band, *basifusca*. however, also varies very strongly in eastern specimens even from the same district. — In ab. **basifusca** Weym., from Ecuador, the area from the base of the forewing to the large eye-spot, which stands in a light patch, and the entire hindwing as far as the pale submarginal band are unicolorous dark coffee-brown. The form is merely an aberration, extremely near to *infuscata* Fldr. (94e), and flies among the type-form, but apparently only in certain definite localities. The under surface varies even more than the upper, but there seems to be no regular contrast, as in India, between specimens with the under surface variegated (of the rainy season) and those in which it is unicolorous or leaf-like (of the dry season). — The larva is rather stumpy with short, thick spines, dark brown or iron-grey with light longitudinal stripes, some of which are interrupted, the horns on the head directed forwards, of moderate length; common on Plantago, Gerardia and Antirrhinum. It occasionally occurs in swarms on stubble-fields, commonly resting on the bare earth or on sand-heaps. The pupa is light wood-brown, somewhat concave ventrally. In the tropics the butterfly flies throughout the year without interruption. In the north and south it is a summer species, and sometimes congregates and migrates like *Pyrameis cardui*; these migrations take place in the United States in July, in Argentina in February.

14. Genus: **Napeocles** Bat.

Of this genus only a single species is yet known, which varies little and is very restricted in its range. The body is strongly built, the palpus unusually long, the antenna strong, distinctly clubbed at the end, the wings shaped like leaves, the forewing below the apex produced into a posteriorly directed tooth, incurved below this and projecting above the anal angle. The hindwing shows a uniformly curved margin and strongly produced anal angle. Characteristic is the very strongly curved costa, which leaves a comparatively broad space between it and the subcostal, and also the very broad cell, which on the hindwing is open.

jucunda. **N. jucunda** Hbn. (95 a), the only known species, is black above with small, whitish, blue-edged subapical spots and broad, abbreviated, metallic blue median band, often lighter proximally. Under surface brown with leaf-like markings. Amazons to Bolivia.

15. Genus: **Anartia** Hbn.

Medium-sized butterflies, in habitus strongly recalling our Vanessids, with angled wings and mostly with bright white spots or bands on the upper surface; head small, with strongly protruding, hemispherical eyes and pointed, elongate palpi; antenna with flat, spoon-shaped club; thorax strong, abdomen slender; wings broad, forewing as a rule, hindwing always angled; brightly coloured. Legs long and thin. Worthy of note is the anastomosis of the 1st and 2nd subcostals with the costal, also the open cells of both wings. Four species are known, all very common in their respective haunts. The egg is spherical in shape, beneath flat with 9—11 narrow longitudinal ribs, which disappear towards the pole; the eggs are laid singly on the upperside of leaves. The adult larvae are black, moderately spined; the larva of one species (*jatrophae*) was represented as densely haired, but without spines, which is no doubt to be traced to an error.

jatrophae. **A. jatrophae** L. (94e). White with slight mother-of-pearl gloss and sparse grey markings **), which are chiefly confined to round the base of the forewing, on the cell-bands and at the distal margin. In the disc of the forewing one, on the hindwing two punctiform eye-spots of very varying development. The under surface is dull white with fine rosy-red and orange-yellow markings. *jatrophae* was described from northern South America, but is distributed over most of the warmer part of South America, strongly variable individually (but little geographically), and in South Brazil is still one of the commonest butterflies. The flight is different from that of the other *Anartia* species. The insect darts along with the wings spread out (swimming flight) and gives exactly the same impression as the Indian *Precis atlites* (vol. IX, pl. 117 a). — **saturata** Stgr. is the West Indian form, characterized by the broad yellow distal margin and the stronger markings. — **luteipicta**. **luteipicta** Fruhst., from Central America, has the yellow of the distal margin of the hindwing sometimes extended proximally across the middle of the wing, occasionally covering the whole upper surface. — The larva is said to live on *Jatropha manihot* and in SEPP's figure, which seems to have been prepared with the assistance of MERLAN's sketch, more resembles that of a moth. *corone* Gosse, *jamaicensis* Möschl. and *luteipicta* Fruhst. are names for forms from the Antilles or Honduras, according to the amount of the yellow suffusion.

*) The specimen of *lavinia* figured from the underside at 94 d forms a transition to *hilaris*.

**) The specimen figured at 94 e is a ♀ with unusually copious brown markings.

A. lytrea *Godt.* (= *chrysopelleia* *Hbn.*) (94 e). Only known from Cuba and in a similar form also on *lytrea*, others of the Antilles. The Cuban *lytrea* has a broad, straight white band on the forewing and an oval white discal spot on the hindwing, so that it is unmistakable. — **eurytis** *Fruhst.*, from Antigua and perhaps also *eurytis*, some of the Greater Antilles, inasmuch as it possibly approximates to **dominica** *Skinn.* from Haiti, has the *dominica*, oval discal spot of the hindwing produced into more of a band and the band of the forewing is narrower on the under surface. The species is not rare where it occurs.

A. amathea *L.* (= *amalthea* *auct.*) (94 e). The typical form of this species, which is easily recognized *amathea*, by the blood-red disc of the hindwing, comes from Guiana and is distributed over the whole north of South America and the greater part of Central America. The forewing has the disc black-brown with scattered red spots varying in number and across the middle as well as before the distal area run chains of disconnected white spots, which are sometimes continued on the hindwing also. The under surface similar to the upper, only paler. — **sticheli** *Fruhst.*, from Bolivia, seems to be a very local form with the white and red markings *sticheli*, much reduced; but transitions also occur, particularly to the preceding form. — **roeselia** *Eschh.* (94 f) is the *roeselia*, South Brazilian form, and is extraordinarily abundant at Santos in Sao Paulo; it may be recognized by the much broader white spots of the forewing, which are united into an oblique band. — **thyamis** *Fruhst.* is said *thyamis*, to occur in Santa Catharina and São Paulo (where I, however, only found the preceding form); the ♀ is said to have darker red margins, the submarginal spots of the hindwing narrower, more curved and the upper ones darkened. All the apical and median spots and dots of the forewing reduced. The median dots in the ♀ scarcely recognizable. — The adult larva is black with moderately strong black spines and has been found on various species of Acanthaceae. The pupa resembles that of *Victorina* in shape and colouring, but has no points on the head nor on the 2nd, 6th and 7th segments. In place of these points there are sometimes dots.

A. fatima *F.* (94 f), allied to the preceding; distinguishable by the more strongly produced apex of *fatima*, the forewing, the broader oblique band of the forewing, which is continued as a broad, straight stripe on the hindwing, and the reduction of the red, which on the forewing is entirely suppressed, on the hindwing only represented by a small, narrow, dull band behind and below the cell. Only known from Central America, where it occurs from Honduras to Costa Rica. — Whilst in typical *fatima* the oblique band of the forewing above is distinctly tinged with bone-yellow, in the form **venusta** *Fruhst.* it is white and the light band of the hindwing *venusta*, only extends to the lower radial. The red discal patches of the hindwing are somewhat broader and darker in *venusta*. Mexico, Guatemala.

16. Genus: *Victorina* *Blch.*

Rather large butterflies of extremely striking colouring with rather long, broad wings, sometimes angled or tailed, rather large head with strong palpus, somewhat curved inwards at the tip. The antenna more than half the length of the costa, strong, with flat club. The legs long and strong, the thorax powerful, the wings broad with dentate distal margin. The cell broad, open on both wings. On the forewing the first subcostal vein arises close before the end of the cell, the 2nd at the end, the 3rd behind it and the 4th shortly before the apex. On the hindwing the 1st and 2nd subcostal veins arise before the end of the cell, the 3rd, 4th and 5th are stalked. The hindwing is strongly dentate, the tooth on the upper median often prolonged into a tail. The larva is only known of one species.

V. steneles *L.* is dark black-brown above with green oblique band and spots of the same *steneles*, colour; beneath the green is more extended, traversed by silver-white bands margined with orange. *steneles* *L.* is the form from Guiana and the Amazons, and is distributed westwards to Ecuador and southwards over the whole of Brazil. In it the green oblique stripe is broad, there is only one spot in the cell and the under surface is very lightly marked. — **pallida** *Fruhst.*, from Texas, Florida and Mexico to Honduras, has in the cell of the *pallida*, forewing two large light green spots, of which the anterior is almost triangular. — **bipunctata** *Fruhst.* (= *meri-* *bipunctata*, *dionalis* *Fruhst.*) (95 a), from Espirito Santo and Rio Grande do Sul, has two small dots in the cell of the forewing and on the under surface of the hindwing a narrower silver-grey distal border. — **sophene** *Fruhst.*, from *sophene*, Ecuador, has in the cell of the forewing only one small yellow-grey dot, the light markings are much narrowed and the median band is reduced. — **lavinia** *F.*, from the Antilles, has only one spot in the cell of the forewing, *lavinia*, but a distinct orange-yellow anal spot on the upperside of the hindwing. — **biplagiata** *Fruhst.* (95 a) has two *biplagiata*, quadrate cell-spots on the forewing and the bands of the under surface, which separate the green spots, are very broadly margined with deep orange. — An interesting aberration is **stygia** *Schaus* (95 a), in which on *stygia*, the forewing the green band only reaches from the inner margin to the lower median vein, all the rest of the wing being black-brown without markings. — The butterfly is very common, but its early stages are not yet known. It shows a remarkable similarity to forms of *Metamorpho dido* (84 a), which extends not only to the colouring and markings, but also to the flight and habits, so that it is sometimes difficult to separate the two species, which I have seen flying together round the same bush. When resting, however, *V. steneles* mostly closes its wings over its back, while *M. dido*, like its red relatives, commonly keeps them spread out.

sulpitia. **V. sulpitia** Cr. (= *symachia* Godt., *elissa* Hbn.) (94 f, as *sulpicia*), although very variable in size, is considerably smaller than the preceding species, the median band is not green but white, the colouring of the upper surface somewhat recalling many Old World *Pantoporia*. Under surface predominantly whitish, traversed by dark-margined, rust-coloured bands. The band varies greatly in breadth, the oval and the subapical spot on the forewing in size; the small white spot in the end of the cell, which is always distinct beneath, sometimes shows through above much more than on our figure, but may also be entirely absent and the dull band between the white median band and the distal margin may be much more conspicuous and tinged with rust-yellow. The species is distributed over the whole northern part of South America and occurs scattered but not rarely westwards to South Peru.

epaphus. **V. epaphus** Latr. (= *epaphia* Godt.) (95 b). As large as *steneles*. Black-brown; distal half of the forewing red-brown, divided from the dark proximal half by a white band; hindwing with straight white half-band from before the apex to before the small tail. Very variable; the white band of the forewing may be narrower, broader or posteriorly widened. The band of the hindwing may terminate in a point between the median veins, but also at times bends round and reaches the inner margin as a thin streak. Here it sometimes terminates in a white subanal spot, but the latter may also be isolated or even absent. On the under surface the apical part of the forewing may be concolorous or traversed by a broad light band; this light band is sometimes split up into two by a dark longitudinal dividing line, but is also sometimes absent or replaced by irregular clouding. On the hindwing the narrow (proximal) white band is not invariably present, but may be absent or incomplete; also on the upper surface the pointed white band of the hindwing may be abbreviated or posteriorly broken up into spots. The species is distributed from Mexico southwards to Brazil and Peru, in many localities common, sometimes in only one form, sometimes several of the forms described above fly together.

trayja. **V. trayja** Hbn. (95 b) is the southern representative of the preceding and scarcely specifically different. It flies in Central and Southern Brazil and is like *epaphus* except that the distal part of the forewing is not rust-brown but dull black-brown, like the rest of the wing. The species is rarer than the preceding, but quite as variable; in addition to the possible variations mentioned for *epaphus* there is frequently a whitish subcostal spot before the apex of the forewing and the under surface is often marked with ochreous before the distal margin of both wings or with red before the band of the hindwing. — Eggs spherical, white, with 9—11 sharp longitudinal ribs; they are laid singly on Acanthaceae. Adult larva velvety black with orange or light yellow spines, head black with 2 red horns. Pupa rather smooth, without projecting carinae, on the head, on the middle of the thorax and on the back of the first 2 or 3 segments of the abdomen with small, short points; dull light green, somewhat transparent. — The butterfly flies on clearings, at the edges of woods and on open places overgrown with bushes.

superba. **V. superba** Bates (= *aphrodite* Btlr.) (95 b). Differing from the preceding chiefly in the shape of the wings. The distal margin of the forewing forms a tooth between the extremities of the radials, the hindwing is much more deeply dentate and the tooth in the middle of its distal margin is produced into a long spur. Colouring and markings similar to those of *trayja*; the white band extraordinarily variable, sometimes twice as broad as usual. Apical part of the forewing sometimes spotted with bright orange. To give names to these aberrations is as unnecessary as it is unsafe, as for instance concerning the breadth of the bands, the red admixture, etc., nothing at all is said in the original diagnosis, and it cannot be decided whether the type belonged to the broad-banded, the unicolorous, or other form. Central America and Mexico. — This and the two preceding species have been separated from the true *Victorina* under the generic name *Amphirene*, principally on the ground of differences in the male genitalia.

17. Genus: **Didonis** Hbn.

Black-brown butterflies with scarlet band on the hindwing, of medium size, body rather slender; head small, but the palpus in the ♀ very long. Wings rounded, forewing entire-margined, distal margin of the hindwing undulate. Especially striking is the costal of the forewing, the basal part of which is strongly inflated. The ♂♂ have a peculiar scent-organ, which I described and figured as long ago as 1889. There are 2 stellate, extensile hair-pencils at each side of the middle of the abdomen, which, however, are usually retracted and invisible. In spite of the quite different aspect of the species, *Didonis* corresponds to the *Ergolis* of the eastern hemisphere and has also like the latter a characteristic floating and swaying flight, as they glide along with the wings spread out flat and moving but little, much like a *Liminitis* or *Neptis*. 7 forms have been distinguished, which are distributed from Mexico to Paraguay.

biblis. **D. biblis**. Black-brown, with brilliant scarlet band at or before the distal margin of the hindwing. From Mexico through the whole of South America to Paraguay and South Brazil, on open places overgrown with brushwood, common throughout the year. — Egg white, oval, flattened at both poles, with fine white down, arranged like a rosette above. Adult larva grey-brown with light oblique streaks and small, thin green tubercles, on the 7th segment a light band. The spines moderately long, on the head two somewhat curved

horns crowned with a star at the end; on *Tragia volubilis*; when at rest it keeps the anterior and posterior parts raised. Pupa green or grey-brown, with a slight rosy admixture, compact, with the edges of the wings projecting as in *Ergolis*, but otherwise not so smooth as the latter. The butterfly has an elegant but not rapid flight and very commonly rests on bushes; in Bahia I frequently found the insects enmeshed in the horizontally placed webs of a large spider, in which numbers perish. — As no district is known where more than one form of *Didonis* occurs, all are probably merely representatives of a single species. The most northerly is **aganisa** Bdv. (94 f), with the forewing uniform dark brown; the scarlet band runs in a zigzag from the apex *aganisa*. to the anal angle of the hindwing and cuts off the distal-marginal part of the hindwing; from Mexico to Central America. — **pasira** Dbl. & Hew. has the scarlet band placed nearer to the distal margin of the hindwing and *pasira*. broken up into separate red spots by the very thick veins. The distal part of the forewing is much lighter. It flies in Guiana and is only to be regarded as a transition to the typical *biblis*. — **biblis** F. (= *hyperia* *biblis*. Cr., thadama Godt.) (94 f) likewise has the forewing lighter at the distal margin; in it the scarlet band follows throughout the curve of the distal margin of the hindwing, leaving only a narrow black border free. This is the usual form, is distributed from Colombia to beyond Central Brazil and is still very common in Rio Janeiro and São Paulo. — **nectanabis** Fruhst. has the scarlet band darker red above, beneath the band of the hindwing *nectanabis*. is much narrower than in North Brazilian specimens; Rio Grande do Sul. — **sisygambis** Fruhst. is said to be *sisygambis*. larger than Brazilian specimens, the red band of the hindwing beneath is more strongly narrowed and sprinkled with black scales than in the preceding form. — **laticlavata** Thieme, which R. HAENSCH discovered on the upper *laticlavata*. Rio Negro, has the broadest scarlet band of the forms; this becomes quite especially broad in the middle of the distal margin, where it extends so far basal that its proximal edge becomes convex towards the base, whilst otherwise it is concave. — The species belongs to the *Ergolids*.

C. Group: **Ergolids**.

To this group, which is typically represented in Asia and Africa by *Ergolis*, *Eurytela* and *Biblis*, and which has been variously called *Ergolids*, *Eurytelini* or *Biblini*, belongs already the genus *Didonis* just dealt with, and only by mistake this paragraph stands after instead of before that genus. According as the habits, the neuration or the life-history is put in the foreground, the group is somewhat differently defined. The 3 American genera which certainly belong here (*Didonis*, *Vila*, *Cystineura*) have also been further separated as „*Didonidi*“. AURIVILLIUS gives first importance to the inflated base of the veins of the forewing (especially the subcostal), according to which a further series of American genera should be included e. g. *Bolboneura sylphis*, named from this peculiarity and formerly merged in the genus *Temenis*. *Libythina* and *Antigonis*, concerning whose life-history we still know almost nothing, would connect the group with *Eunica* and *Lunicia* with the *Epicalidi*. Until we know the larvae, which will no doubt here prove quite characteristic, it is useless to waste many words on the affinities of these groups. Whilst on the one hand the entire agreement in the habits of *Ergolis* and *Didonis* and the striking similarity of *Cystineura teleboas* and *Neptidopsis* (which is not only superficial) argues in favour of a union of the Old World genera into one subfamily with the corresponding genera of the New World, on the other hand REUTER separates the two and advocates a closer association of *Ergolis* with the *Vanessidi*. It is, however, very striking that all the larvae which are known of *Byblia* (Africa), *Ergolis* (Asia) and *Didonis* (America) live on one and the same food-plant, the evil-smelling *Tragia*. When in conjunction with such unusual morphological conditions as the swelling at the base of the costal, the nature of the larval spines (spines on the head very long, a crest of spikes at the end of the spines, etc.) and the like, we find further agreement in an otherwise unusual food-plant, a close systematic connection between these geographically remote genera seems very probable.

18. Genus: **Vila** Ky.

As *Vila* is one of the comparatively few butterfly genera of which I have never observed an example in the open, I am not in a position to say anything as to its bionomics. According to its affinities (it is closely connected with the *Ergolis-Didonis* group) one would expect a darting or sailing flight with the wings held horizontally; but on account of an unmistakable tendency to mimic certain Ithomiids it would appear that an alternately fluttering and jerky flight, so as to complete the illusion, would be more advantageous for the insect. — The genus consists of 6 rather nearly allied forms, which all (except one) have the upper surface of the wings predominantly dark with vitreous white patches and bear an orange-coloured arcuate line on the under surface. All the species seem to be rather rare and are only received in Europe in single specimens. Their proper habitat is the watershed of the Amazons, from which they extend northwards to Guiana and southwards to Peru. — The *Vila* species have a moderately broad head with thick, naked eyes, palpus about the length of the head, with the 2nd segment thickened and the 3rd somewhat hollowed; antenna half the length of the costa, gradually and slightly thickened at the end; the body is slender, on the thorax are whitish bands and spots, as in a *Pantoporia*; wings entire-margined, broad with rounded distal margin. The neuration similar to that of *Cystineura*, on the forewing the cell is closed, the subcostal in the ♂ swollen at its base into a thick cyst. Cell of the hindwing open. — Concerning the early stages nothing is known.

V. azeca Dbl. & Hew. (95 c). Forewing with broad white cell-wedge, subapical oblique band and white *azeca*. streak between the median veins; hindwing with hyaline white costal area. Under surface with orange-yellow, dark-edged marginal stripe. Bolivia and Peru.

- cacica*. **V. cacica** Sigr. is quite similar above, but the cell-wedge cut through before its apex, the oblique band split up into 2 spots; spots before the apex, and between the median veins diffuse white spots; hindwing with uniform light band. From Ecuador.
- stalachtoides*. **V. stalachtoides** Bates. A very easily recognized species, resembling a *Stalachtis phaedusa* (pl. 143) or *Leucothyris egra* (39 b), or again a *Pseudoscada exornata* Hsch. (41 b). The forewing is variegated with light, dull yellow spots, the hindwing has transparent disc, black costal margin and, what is most striking, an orange-red stripe before the black distal margin. From the Lower Amazon.
- caecilia*. **V. caecilia** Cr. (95 c). Forewing with a broad, white, oval or band-like apical spot, white discal spot and small whitish blue band, which cuts off the basal part of both wings. Hindwing sometimes with whitish median band. From the Upper Amazon.
- emilia*. **V. emilia** Cr. is quite similar to the preceding, but the large white spots on the forewing are broken up into smaller ones. The hindwing shows always beneath, often also above, a median band intersected by the veins. Guiana and the Amazons.
- mariana*. **V. mariana** Bates is quite similar to the preceding above, but has on the hindwing white marginal markings and fringes; the forewing is somewhat more strongly spotted with white, and in the apex itself stands an obscure white line. The underside of the hindwing lacks the small white subbasal band, distinct in *caecilia* and *emilia*. From the Upper Amazon. Rare.

19. Genus: *Cystineura* Bsd.

This genus is composed of 12 forms, 11 of which approximate very closely, but the 12th is remarkably different and both structurally and in habitus approaches an African species. The genus, at least as concerns the first 11 forms, cannot be confused with any others, it consists of extremely delicate, broad-winged, rather small butterflies, the forewing elongate with the costal margin straight, the distal margin long and the inner margin either quite straight or even slightly concave. Noticeable in the venation are a thick, ampulla-like swelling at the base of the subcostal, the very broad, closed cell of the forewing and the open cell of the hindwing. The colouring, with the exception of the 12th species, which scarcely belongs in the genus, is white or grey with a somewhat orange tinge. Concerning the early stages nothing definite is known. The geographical distribution extends from the most southern part of the United States to Paraguay. A correct separation of the species and arrangement of their forms is attended with great difficulty and the intergrading of the different forms leads us to suspect that we are only dealing with quite a few variable species, which all vary in a similar direction.

- hypermnestra*. **C. hypermnestra** Hbn. (= *hersilia* Godt. p. p., *tokantina* Bates) (115 e, 97 a under surface). Already in my „Lepidopterologischen Studien“ (Zool. Jahrb. System. 4, p. 912) I have called attention to the extreme variability of this species, which was noticeable even among the numerous specimens which I took at the same place and almost at the same hour in Bahia. The ♂♂ may be almost unicolorous grey above, but have mostly a rather broad light discal band across the forewing, which is widened below the cell and is continued on the hindwing, but considerably narrower. The under surface in the ♂ has mostly a rather weak ochreous tinge, principally in the distal area, and shows a white subbasal band on the hindwing, which is at least as broad as the discal band or even surpasses it. In the ♀ also the ochreous tinge of the under surface may be strong or weak. The species is only known from Bahia, where it flies throughout the year. — Further to the south, from Rio to Paraguay, flies a form with the apical part of the forewing broadly orange-yellow, which *apicalis*. STAUDINGER calls **apicalis** and in which he already suspected a southern local form of *hypermnestra*. This form is figured at 115e as the last figure but one, but has by oversight been given the incorrect name *bogotana*, while the name *apicalis* has slipped under the preceding figure, which represents a *C. corviana*. Of this local form, whose yellow colouring is subject to great variation in extent, MOULTON now describes a further subvariety *burchelli*. from Brazil, which he calls **burchelli**.
- bogotana*. **C. bogotana** Fldr. in certain forms nearly approaches the preceding species, thus e. g. in the form **cana** *Erchs.*, which on the upper surface has like *hypermnestra* hardly any yellow and only differs from the dark-dusted examples of the latter in its smaller size and darker margins and on the under surface in the considerably narrower subbasal band of the hindwing; other specimens again are almost entirely white, but nevertheless belong no doubt in the *bogotana* series of forms. But that *semifulva* Fldr. (97 a) can be specifically identical with *bogotana* seems to me to be precluded by the fact that in addition to other differences the latter shows a narrow subbasal band on the underside of the hindwing. Colombia and Venezuela.
- semifulva*. **C. semifulva** Fldr. (97 a), likewise from Colombia, has the basal half of the forewing and the whole hindwing shot with dull ochre-yellow, the apical part of the forewing densely covered with white longitudinal spots. Not rare.

C. anymone Mén. (115 e) differs from the preceding species in that the median band on the under- *anymone*. side of the hindwing, although broad at its commencement at the costa, is narrowed beyond the cell into a chain of small, round white spots. The forewing resembles that of *hypermnestra* above, but the hindwing has the distal part ochre-yellow. Found from Texas through Mexico and Central America. — In Florida occurs a form with unicolorous ♂♂ suffused with grey, = **floridana** Streck., which according to MENGEL resembles *cana*, but *floridana*. differs from it in the shape of the band on the underside of the hindwing; probably, however, it is nearly allied to a form from the island of Trinidad with the ♂ unicolorous dark brown-yellow **corviana** Btlr. (115 e or *corviana*. roneously called *apicalis* which name belongs to the figure on its left).

C. aurantia Weeks (115 e) has the upperside in the ♂ white, only at the distal margin of the forewing *aurantia*. quite narrowly tinged with yellow; we figure the under surface. It is characterized by the discal band on the hindwing beneath which consists of a chain of rounded white spots placed in a brown-grey. Bolivia.

C. dorcas F. (= *hersilia* F., *mardiana* Cr.) (97 a) cannot be confused with any other species. Both *dorcas*. wings above are bright yellow-red in the distal part, the proximal part is white with dull greyish markings. From Jamaica.

C. teleboas Mén. (97 a). This species differs structurally from all the other *Cystineura* in having the *teleboas*. palpus even more elongate, the distal margin of the hindwing more strongly dentate and that of the forewing undulate, the markings also quite unlike this genus, bearing a remarkable resemblance to those of the African *Neptidopsis ophione* (vol. XIII, pl. 49 d). Not only the elongate palpus, the inflated base of the costal and the black and white colouring unites the two, but also the markings of both surfaces, particularly the peculiar double row of eyespots beyond the white median band, are common to both. *teleboas* only occurs on the Antilles.

D. Group: **Marpesiidi**.

As we hesitated to separate *Didonis*, *Bibliis*, *Eurytela* and *Ergolis*, in spite of their very different habitus and widely separated localities, in the same way the sole American genus belonging here — *Megalura* — approximates very closely to an Asiatic-African group, which consists of the genera *Cyrestis* and *Chersonesia*. The larvae of the genera in this group have no true spines, but in addition to two long horns on the head bear only isolated, not paired, rather soft appendages, one placed on the 5th and one on the 11th segment, sometimes also one on one or two of the intervening segments, in that case usually shorter. — In addition *Megalura* is associated with *Cyrestis* by the common food-plant; as a rule the larvae are found on *Ficus* or allied plants. — Finally, the butterflies almost all show in the anal angle of the hindwing a small lobe, which hangs down when the insect is resting with the wings spread out. — Both in the Old and the New World the *Marpesiidi* are represented by 20–25 species and almost entirely confined to the tropics; they differ in that the tail in the American species is long, in those of the Old World short.

20. Genus: **Megalura** Bleh.

This genus, which was formerly referred to *Timetes* and *Marpesia*, is as isolated and independent in the American fauna as its nearest relative, *Cyrestis*, in the Old World. These two genera exactly correspond in the spines of the larvae and the shape of the hindwing, which bears a peculiar, somewhat curved, small anal lobe. The *Megalura* species have a rather broad head with broad front and protruding eyes. Palpus long, particularly the 2nd joint, the 3rd also long and pointed; the palpus with appressed scales, the antenna moderately long, with well developed, elongate club, into which it gradually swells. The subcostal of the forewing 5-branched, the 1st branch arising almost at the middle of the cell, the 2nd at its end, the 3rd to 5th stalked; the lower discocellular wanting on both wings, so that the cells are open. Usually the forewing is produced or pointed at the apex, the distal margin undulated, the inner margin quite straight. The hindwing shows a pointed tail traversed in its entire length by the upper median vein and mostly in the anal angle a small, somewhat distally curved, sometimes brightly coloured lobe.

The larva shows a great reduction in the spines. The lateral spines are almost entirely suppressed and there are only unpaired soft spines on the back, thus showing an approach to the form of the *Apaturidi* larvae. On the whole they probably approximate most nearly to *Chlorippe*. Most species are very common where they occur, feed both on the honey of flowers and also the moisture of wet places on the roads, and from their head-quarters, northern South America, scarcely a consignment of butterflies reaches Europe which does not contain one or more representatives of this group. Their range extends from the south of the United States (Texas and Florida) to Paraguay and northern Argentina in the east and Peru and Bolivia in the west. Single species show analogy with butterflies of other groups, together with which they fly, but it does not amount to actual mimicry, while on the other hand the under surface is frequently adapted to their environment. About 25 forms are known.

- coresia*. **M. coresia** Godt. (= *cerynthia* Hbn., *sylla* Per.) (96 a). Dark chocolate-brown above, with the distal margin lighter, beneath the basal half of the forewing is satiny white, the distal half brown. In Texas, but there mostly still rather rare, through Central and northern South America southwards to Peru and southern Brazil. The popular name „Waiter“ alludes to the upper surface (dark, long-pointed frock-coat) and the under surface (white waistcoat).
- norica*. **M. norica** Hew. (96 a). Mostly smaller than *coresia*. The forewing black-brown, with single light stripes running off from the inner margin towards the median. The hindwing lighter brownish with dark longitudinal stripes. The under surface quite different from that of *coresia*, brown with dark dentate lines and a small transverse band, mostly somewhat lighter, from the inner margin of the hindwing to the upper median vein; the distal margin of the forewing mostly frosted with whitish. Ecuador and Peru.
- themistocles*. **M. themistocles** F. (96 a). Wings pretty uniformly striped with yellow-brown and black-brown, under surface similar to that of the preceding species. The difference is that in *themistocles* the light stripes traverse the entire forewing, in *norica* they are only distinctly visible at the inner margin. Brazil.
- chiron*. **M. chiron** F. (*chironias* Hbn., *cinna* Swains. nec Cr.) (96 a). The commonest and best known *Megalura*. As in the preceding, the wings are striped with yellow-brown and black-brown above, but the stripes are quite straight, not curved as in *themistocles*. The under surface entirely different, with slight mother-of-pearl gloss, mostly dark grey-brown in the distal part, light dusty grey in the proximal part; the two parts divided by a straight, white, dark-edged band traversing both wings. In typical *chiron* there are 5 or 6 distinct white punctiform spots before the apex of the forewing above. The species has an extraordinary range, occurring from the Antilles and Mexico through the whole of Central and South America far towards the south. On Cuba, together with typical specimens, others occur in which the apical dots of the forewing above are absent, and which also mostly differ in the ground-colour from typical *chiron* and often have the under surface more unicolorous tan-yellow, little opalescent. These have been distinguished as ab. **chironides** Stgr. I have before me quite a number of transitional forms from Cuba, so that I cannot agree with STAUDINGER's opinion, also shared by FRUHSTORFER, that *chironides* is a distinct species. **insularis** Fruhst. (= *marius* Stoll nec Cr.), described from Jamaica, presents such a transition. — The larva of *chiron*, like most *Megalura* species, probably lives on *Ficus* and *Morus*; according to MÖSCHLER it has been found in Porto Rico on *Maclura tinctoria*.
- merops*. **M. merops** Bdv. (96 b). Dirty grey-brown above, apical half of the forewing black, copiously dotted with white; beneath dull silver-white with brownish parallel transverse lines. From Costa Rica through the whole of northern South America to Bolivia. In the south of its range the species alternates with *egina* Bates. Common.
- alcibiades*. **M. alcibiades** Stgr. The upper surface of this butterfly exactly resembles *chiron*, the under surface *berania*. It differs from both in the absence of the anal lobe on the hindwing. The butterfly must be very rare or be seldom taken on account of its similarity to the very common *chiron*. Central America: Chiriqui and Veraguas.
- egina*. **M. egina** Bates. This species, which is very common on the Upper Amazon, though very like *chiron* or *themistocles* above, is at once distinguished by the light, glossy under surface, in which it approaches *M. merops*.
- harmonia*. **M. harmonia** Dbl. & Hew. (96 e). This species also has the light, satin-glossy under surface, traversed by parallel lines. Above it is bright orange-yellow, almost exactly like *berania* ♂, but the apex of the forewing is much more pointed and the distal-marginal line bright black. The ♀ is also on the upperside dull white, with a yellowish tone. Mexico.
- tutelina*. **M. tutelina** Hew. is marked almost like *harmonia* on the upper surface, but the apex of the forewing is even more pointed, the ground-colour more fiery red-yellow; it chiefly differs on the under surface, the red-brown having a violet gloss, traversed by 3 small, linear brown bands, so that the underside resembles *themistocles*. Amazons; apparently very rare.
- berania*. **M. berania** Hew. (96 c). ♂ above fiery red-yellow, but with rounded apex, beneath dull yellow, with white satiny gloss and 6—8 yolk-yellow transverse bands. The ♀ is dull grey-brown above, whitish beneath, but marked quite like the ♂ except that the bands on the upperside are broader and more distinct. The typical ♂♂ have a black distal margin to the forewing, dark border at the apex and dark, on the hindwing almost black lines (= *crassilineata* Fruhst.). FRUHSTORFER is quite right in calling attention to the difference of this form from the Honduras specimens, which have a dark yellow transverse line; but these latter are the non-*fruhstorferi*. typical and must be renamed (= **fruhstorferi** nom. nov.) (96 c).
- livius*. **M. livius** Kirby (= *berania* ♀ Hew.) (96 b). Upper surface black-brown with dark transverse bands not unlike *norica* (96 a), but the under surface is like white satin, with fine brown lines. Ecuador, Bolivia and Peru.

M. crethon *F.* (= *crithon* *Godt.*) (96 b). Under surface very similar to the preceding species, likewise *crethon*. satiny white, but with a peculiar rosy violet tinge. Above the wings are earth-brown with white median band and 6 small white spots in the distal area, of which the one in cellule 5 is displaced proximally, that in cellule 6 distally. Before the distal margin often white dots. Probably distributed over the whole of northern South America, sometimes occurring with broader, sometimes with narrower white band, but seems to be often rather rare.

M. catulus *Fldr.* is quite similar to *crethon*, but the median band is very narrow, the hindwing before *catulus*. the distal margin with stronger stripes and at the anal angle with more distinct orange spot; on the forewing only the upper white dots are clear and well developed. Ecuador.

M. orsilochus *F.* (= *cinna* *Cr.*) (96 b). Likewise resembles *crethon* above, but in the distal area of the *orsilochus*. forewing instead of the row of dots a second, narrower, white band runs about parallel to the proximal one. Under surface, however, quite different; this is not traversed by fine grey lines, as in *crethon*, but by broad brown bands tinged with gold-yellow. The tails of the hindwing very long and pointed. Northern South America, especially Venezuela; in many places rare.

M. corinna *Latr.* (96 c). Brown, forewing with rather narrow orange band, hindwing with violet *corinna*. reflection on the disc. Under surface distinctive, showing besides other silvery markings a silver median band (quite straight on the hindwing). The ♀ has on the upperside of the forewing a white band, according to STAUDINGER sometimes light yellow. Colombia to Amazons. — **lazulina** *Fruhst.* (96 c) are specimens of the *lazulina*. smaller Peru form, such as are obtained in numbers from Chanchamayo; they are quite like *corinna*, but have the proximal boundary of the orange band of the forewing irregular and the tails of the hindwing brighter red-yellow.

M. marcella *Fldr.* (♀ = *valetta* *Btlr.* & *Druce*) (96 d). In this common butterfly the whole disc of the *marcella*. forewing in the ♂ is orange, and in addition the apical part of the hindwing. The under surface is almost exactly like that of *corinna*, so that the two were for a long time regarded as forms of one species. Central America and northern South America.

M. corita *Ww.* (= *theonis* *Bdv.*) (96 d). Upper surface almost exactly as in *marcella*; the apex of the *corita*. forewing perhaps somewhat more pointed, the hindwing before the tail with beautiful violet metallic crescents, which in *marcella* are at most only indicated. Quite different is the under surface, where a dark brown band, only shaded with silver, runs through the middle. Mexico to Central America. Common in the woods of Vera Paz, on river-beds. — **phiale** *Godm.* & *Salv.* is said to be quite like *corita* in the ♂ upperside, but differs in the *phiale*. more red-yellow under surface. The ♀, which in *corita* is dark brown with ochreous band on the forewing, is in *phiale* much paler, with narrower ochre band, but with lighter, yellow-grey transverse bands and stripes. From the volcano Atitlan in Guatemala.

M. hermione *Fldr.* (= *heraldicus* *Bates*, ♀ = *funebis* *Btlr.*) (96 d). In the ♂ the larger inner-marginal *hermione*. half of the forewing is bright orange, the distal part of the wing black-brown; the ♀, which BUTLER described as *funebis*, is reddish yellow-brown, with ferruginous transverse bands. The species is distributed from Guatemala to Peru and Bolivia and varies strongly, but more according to habitat and elevation or individually than geographically. The ♀♀ in particular are very inconstant and the ♂♂ vary with regard to the delimitation of the orange basal part; many show violet-blue reflections at the proximal edge of the black distal part, but never so strong as in *iole*. — KIRBY's Catalogue cites with this form an **M. poeyi** *Sagra* from Cuba; this is un-*poeyi*. known to me, but the following species, *iole*, has been occasionally recorded from the Antilles, as by CRAMER and DRURY.

M. iole *Drury* (= *furcula* *F.*, *zosteria* *Hbn.*) (96 e). The colours of the ♂ as in the preceding, but *iole*. the red-yellow on the basal part restricted, often only visible on the forewing, and behind it on the black disc a very intensive, glorious violet-blue reflection. The ♀ is distinguished from the more grey-brown ♀ of the preceding species by the red-brown tone and rust-yellow oblique band, yet both species vary strongly in this. From Central America through Colombia and Venezuela to Ecuador and Peru. Common.

M. peleus *Sulz.* (= *petreus* *Bates*) (96 e). Fiery fox-red with black (southern form) or brown (northern *peleus*. form) transverse stripes. Recognizable by the tooth of the forewing below the apex, which projects far distal, the long, quite straight, somewhat spatulate tail at the median of the hindwing and the shorter (but always several mm in length) tail at the anal angle. Costal and distal margins, especially in southern specimens, strongly blackened. — Larva violet-reddish, white on the venter, the abdominal segments sulphur-yellow above. The head bears 2 horns, the 5th, 7th, 9th and 11th segments each an erect, soft filiform process on the back. The pupa dull white with small black spots and long spines on head, thorax and abdominal segments and distinct dorsal carina. The larva on Cachou (*Anacardium*). The butterfly is common; in consequence of the strongly produced forewing it much resembles *Colaenis julia*, *Dione junio* etc., with which I took it on the same flowering shrubs.

When I started the butterflies up by beating and they flew round the bush before settling again, it was scarcely possible to distinguish *peleus* in flight from the swarm of *Colaenis* etc.

cleuechea. **M. eleuechea** Hbn. (= *pellenis* Godt.) (96 e). Pretty similar to the preceding, but darker fox-red, more strongly marked with black, and abundantly distinct in the shape of the forewing, which is much shorter and has a short tooth below the apex. From the south of the United States (Texas, Florida) and the Antilles; not rare on Cuba.

E. Group: **Hypolimnadidi.**

If the Hypolimnadids are not reckoned directly to the *Vanessidi*, but are separated from *Anartia* and *Victorina*, which nearly approach the Vanessids, they have scarcely to be considered in the American fauna, as their sole representative has certainly been accidentally introduced. We therefore place it here by itself.

21. Genus: **Hypolimnas** Hbn.

The only species found in America is *H. misippus*, which is here rare, but in Africa and South Asia quite common and mimetically adapted to the Danaids occurring there. Hence it is dealt with fully elsewhere (vol. IX, p. 545, and vol. XIII, p. 212) and, as it has also reached the Palearctic Region in Syria, it is figured in the first part of this work.

misippus. **H. misippus** L. (vol. I, pl. 60c). The reader is here referred to what has been said in vol. I, p. 195, vol. IX, p. 547, and vol. XIII, p. 213. ♂ black with white discal area with blue reflection on both wings; the ♀-form found in America is the one figured in vol. I, pl. 60 c, as the typical ♀-form of *misippus*, *diocippus* Cr., a mimic of *Danaüs chrysippus*. The butterfly is still rare in America and has been found in quite isolated localities; thus in widely distant parts of North America (New York-Florida), on the Antilles and in northern South America. No doubt pupae have been repeatedly imported, and as the larva lives on field-produce (Batatae) and the species runs through the whole cycle from egg to imago in only some 4—5 weeks, it has succeeded in gaining a firm foothold. The flight of *H. misippus* is quite unlike that of other Nymphalids, which often have a darting or sailing motion, on the contrary it resembles the irregular flight of the Danaids, which the female mimics, just as the other mimetic *Hypolimnas* that of *Euploea*.

F. Group: **Gynaeciidae.**

This group of butterflies approximates in some degree to the *Vanessidi* and at the same time to the nearly allied *Hypolimnadidi*. As far as they are known the larvae are strongly spined, the pupae have points on the head and often also peculiar teeth on the dorsum, the butterflies are most conspicuous by the peculiar scheme of markings on the under surface, where this is not softened into a leaf-like pattern. There are scarcely a dozen forms, which are divided into 6 genera, all confined to America, there often common and sometimes so general that they may be described as characteristic butterflies of a South American landscape. Sometimes butterflies of this group are seen flying along at great elevations, all in the same direction, apparently migrating.

22. Genus: **Historis** Hbn.

To this genus is assigned a large butterfly, common in almost the whole of South America, which about corresponds with *Doleschallia* of the Old World. The sole species is so characteristic that a description is almost superfluous.

orion. **H. orion** F. (= *danae* Cr.) (104 e). Very large, forewing produced at the apex and hindwing at the anal part. Above black-brown with orange disc to the forewing, this orange colour beyond the cell reaching nearly to the distal margin, before the apex of the forewing a white costal spot, the hindwing light-margined. Under surface leaf-like. From the south of Florida, where, however, it is probably only an immigrant, the species is distributed over the West Indies and Mexico through Central and South America as far as Argentina and it extends from the Atlantic to the Pacific coast. — The larva is thick and firm, with short branched spines and two short spinose clubs on the head, yellow-brownish to greenish with dark brown transverse markings on the segments. The pupa is laterally much flattened with sharp dorsal ridge, likewise yellow-brownish to wood-coloured, and has two long horns on the head. The butterfly does not visit flowers, but drinks at wet places on the road and especially at sugar, sap and fruit, where it rests head downwards, always with the wings closed, but when in danger dashes away with very powerful, though not very elegant flight

(about like a *Charaxes*). Probably it owes its constancy to this great power of flight, so that in its enormous range no permanent races have been developed. Specimens which lie before me from Bolivia and Ecuador differ in nothing from those coming from Colombia or South Brazil. Only in Haiti the orange area of the forewing is said to be somewhat broader and the distal margin of the hindwing brighter white. For this form FRUHSTORFER reserves the name *odius* F., otherwise treated as a synonym. Very common in tropical America, *odius*, and by preference keeping near the Indian huts, on heaps of refuse and in fruit-gardens; at Rio de Janeiro it begins to get rarer and occurs very irregularly. The larvae live on the Embauba and rest very high up, mostly on the upperside of the lobed leaves.

23. Genus: **Coea** Hbn.

The sole butterfly which belongs in this genus I only place here provisionally, as its larva is unknown to me; but as the butterflies of the two groups agree very exactly not only in shape, colouring, neuration, etc., but also in the finer structure (REUTER's basal spot of the palpus), I follow REUTER and W. MÜLLER and introduce it there. It is probably very near the Old World *Kallima* and has doubtless nothing to do with *Charaxes* of the Old and *Prepona* of the New World.

C. acheronta F. (= *cadmus* Cr., *pherecydes* Cr.) (104 d). Similar to the preceding, the disc of the *acheronta*. forewing duller orange-ochreous, before the apical part of the forewing an oblique chain of white spots; before the apex a small, shining white vitreous costal spot, exactly as in *Hist. orion*. Hindwing with a tooth or small tail; beneath marked more like bark than leaves, rather variable and in many specimens recalling certain *Charaxes*. As, however, nearly every specimen is different beneath I do not regard this variability as constant, and treat *cadmus* as a synonym. Distributed from Mexico over the Westindies and Central America to South Brazil, where it is still common at times; it rests on tree-trunks head downwards, often with the wings spread out wide, comes to sugar and flies very rapidly. I have no doubt that the unknown larva has short, thick spines and lives on *Cecropia*. The butterfly is uncommonly variable in size and together with specimens as large as the figured *H. orion* others occur like a small *Pyrameis atalanta*.

24. Genus: **Smyrna** Hbn.

Large butterflies with the upper surface golden brown in the ♂, dark brown in the ♀, and with 3 light subapical spots in the black apical third of the forewing, which is separated from the disc by an oblique band, dull golden yellow and not sharp in the ♂, sulphur-yellow and sharp in the ♀. Very characteristic is the under surface of the hindwing, where a confusion of blind or pupilled eye-spots surrounded by rings and with small spots and bands placed between them makes the genus unmistakable.

S. blomfildia F. (= *proserpina* F., *blomfildii* Hbn., *bella* Godt., *pluto* Westw.) (104 e). ♂ gold-orange *blomfildia*. above, darker in the basal part, the 3 subapical spots white, as also in the ♀, the latter with dull yellow oblique band. On the underside of the hindwing there are 4 or 5 dark brown, yellowish-margined spots between the pupilled eye-spot and the base; before the pointed anal angle an obtuse but distinct tooth. In specimens from South America, where the species extends from the north coast southwards to Paraguay and Peru, this tooth is rather strong. — **datis** Fruhst. (104 d) designates specimens from Mexico and Central America; *datis*. these have this tooth weaker, the wing-contour on the whole more rounded, the upperside of the ♂ lighter, more glossy yellow, and a narrower, darkened oblique band on the forewing in the ♀. Beneath the hindwing is darker and the grey-white band, which in *blomfildia* extends from the upper cell-wall between the radials to the distal margin, is wanting. — The larva is strongly spined, the dorsal spines much as in the following genus, with whorl-shaped secondary points; the head with thick, short, tuberculous horns terminating in a five-pointed knob. The butterflies are common almost everywhere in tropical America, fly in many districts throughout the year, rest on walls and tree-trunks and by preference frequent fruit-gardens and refuse-heaps.

S. karwinskii Hbn. (104 d) is quite similar to the preceding species, but in the ♂ the subapical spots *karwinskii*. are often (not always) strongly tinged with golden brown; the hindwing has no tooth before the anal angle and its under surface is much more indefinitely marked; in particular the marking between the pupilled eye-spot and the base of the hindwing is much finer, the brown spots narrowed into streaks, giving more the effect of a chasing. In Mexico and Central America, locally and at times common.

25. Genus: **Pycina** Wtw.

The two very closely allied butterflies belonging here somewhat recall *Smyrna*, but the forewing is considerably more pointed. The eyes are densely haired; on the forewing the 2nd subcostal vein arises nearly

at the end of the cell, the upper discocellular is short and recurved, the middle long and sinuous, the lower closing the cell obliquely; the submedian slightly thickened at the base. Early stages unknown; the butterfly, in contrast to the preceding genus, rare and the genus much less widely distributed.

zamba. **P. zamba** Dbl. & Hew. (104 e). Above almost like *Coea acheronta*, beneath superficially recalling a *Pyrameis*, especially the underside of the hindwing, which shows a complicated grey-brown pattern. The yellow-red of the upper surface varies somewhat in extent, but is never so restricted as in *zelys*. From Colombia and Venezuela to Ecuador and Peru, apparently everywhere rare.

zelys. **P. zelys** Btlr. & Drc. Very similar to the preceding and formerly regarded as a form of it, but probably a separate species. The hindwing is much more black, in the whole distal part, not only in the anal part, as in *zamba*; the yellow marginal spots are wanting. In addition the whitish costal spots are in *zelys* very much smaller or even only rudimentary. Costa Rica and Panama, especially on Mt. Chiriqui.

26. Genus: **Megistanis** Wtw.

As the larva of these species is unknown the position of the genus remains uncertain. Of a *Charaxes* larva one need think so much the less that even *Coea*, which except for the points on the hindwing is deceptively like a *Charaxes*, has been placed here by most systematists on the assumption that it has a spined larva. The butterflies are very powerfully built, the abdomen, as in *Charaxes*, in the ♂ — and hardly any but ♂♂ are known — sometimes only hanging as a small appendage to the robust thorax; the cell of the hindwing open, the closing vein of that of the forewing extremely fine, scarcely perceptible. The hindwing bears 2 or 3 pairs of points and its distal margin is dentate; the under surface very strikingly marked, but with a scheme of markings which brings the genus near to *Smyrna*, *Gynaesia* and *Callizona*, also very singularly marked beneath. We know 4 forms from the Amazon region; opinions still differ as to their relationships.

baeotus. **M. baeotus** Dbl. & Hew. (= rayi Voll.) (104 d). ♂ black with dull blue-green reflection and metallic blue median band, transverse spot of the same colour beyond the cell and row of bluish dots in the distal area. Very characteristic is the under surface, dull white with closely crowded row of small black spots and 4 large ochreous spots proximally to and above the anal angle. Amazon region and Colombia. — *deucalion*. **M. deucalion** Fldr. (104 e), which was long regarded as the ♀ of *baeotus*, is according to STAUDINGER certainly a good species; beneath quite similarly marked, but the ochreous spot of the forewing strigiform, and on the upper-side the median band is not blue but yellow, and on the forewing often somewhat shorter; flies likewise in the Amazon region and Colombia. As a matter of fact the ♀ *baeotus* is also almost like *deucalion*, with yellow bands, but may be recognized by the crescentic (not band-like), more strongly blue-marked transverse spot beyond the cell of the forewing and by the absence of the light dots in the distal area (FRUHSTORFER).

japetus. **M. japetus** Stgr. (104 e). Almost exactly like *baeotus* above, but distinguishable beneath by the smaller ochreous spots and the generally finer markings, and especially by having two lines in the cell of the hindwing instead of 4 thick dots as in *baeotus*. From the Upper Amazon, Peru. — Here belongs a lost species, passing as *aecclus*. **M. aecclus** F. (= *aecclus* Cr., aile Hbn.), in which the band on the upper surface is wanting. If, as has been assumed, this was a damaged specimen in which the band had been obliterated by chemical influences, it would be best to cancel the name, since „artificial products“ — and we are probably dealing with such, as several specimens are said to have been altered in a similar way — should bear no names. If it should prove that it is a definitely recognizable and but little modified specimen, or even an actually occurring aberration, then *aecclus* F. should be regarded as name-type and *japetus* Stgr. as „subform“. The species is rare.

27. Genus: **Gynaecia** Dbl.

The sole species of this genus is common, widely distributed and equally striking in wing-form and under surface. The most remarkable feature is the almost rectilinear, scarcely appreciably curved distal margin of the hindwing. The antenna is long, the eyes naked and large, the palpus thick, pointed, obliquely directed upwards, the body moderately strong, the legs, especially the middle tibiae, very long and thin. The larva is black, with branched horns on the head and yellow spines, the pupa is very peculiar, shaped and coloured like a splint of wood. The butterflies fly throughout the year, by preference in open country, and rest on tree-trunks.

dirce. **G. dirce** L. (97 a). This butterfly may be at once recognized by the under surface. It is widely distributed in South America, extending from Honduras over the Antilles and the whole of warmer South America to Paraguay and South Brazil. It has an irregular, fluttering, but at the same time rapid flight, in which, curiously,

it resembles the otherwise quite dissimilar long-tailed *Hypna clytemnestra*. But it mostly flies a little higher and likes to rest 2—3 m high on the trunks of trees, with closed wings and head downwards. I have never seen it visiting a flower. — The larva is also to be found the most frequently of all the butterfly-larvae. It is black with yellow spines, yellow transverse bands and yellow, mostly black-pointed horns on the head that are not straight (as in SEPP's illustration), but slightly tortuous. In another form — *dircoides* Sepp (97 b) — *dircoides*, which is said also to produce smaller butterflies, the front spines are not yellow and the lemon-yellow transverse bands are missing. At first it lives gregariously on the Embauba tree and Cassia, but seems to drop down very easily, for it is often found creeping on the road. The pupa is wood-coloured and resembles exactly a splinter of the plank on which it is usually hanging. The front is quite straight, the head has two short points, but the back of the abdomen has a number of prongs turned upwards, as if the small piece of wood the pupa feigns to represent were splintered here. The butterflies are common; before sitting down on the trunk of a tree, they often use to circle round the chosen resting-place for a long time. KAYE states that the butterfly is stridulating when flying, like the *Ageronia*-species; I have never heard such a stridulation in *Gynaecia*.

28. Genus: **Callizona** Dbl.

Very similar to the preceding genus, the larvae, however, with shorter horns on the head and pretty short spines, the pupa with long antler-like appendages on the head, and on the back of the abdomen instead of the splinter-like continuations there are short spikes; the butterflies have more obtuse forewings and rounded hindwings, the latter without the straight distal margin and without the anal-lobe. From Costa Rica throughout Colombia to Guiana and Peru.

C. acesta L. (97 a). Beneath almost like *Gynaecia dirce*, but smaller and above orange-coloured with *acesta*, a similar oblique band of the forewings and little white spots before the apex. Central America to Guiana. Specimens from the Upper Amazon were described as *fulvescens* Btlr. (97 a); their orange-coloured transverse *fulvescens*, band commingles here and there with the orange-coloured base-half, and with *latifascia* Btlr. (97 a) from the *latifascia*, more southern Peru (Chanchamayo) and Bolivia the oblique band is broader and lemon-coloured. — Larva light green, often tinged yellowish, with light green lateral stripe, beneath darker coloured, head and spines black; on cocoa (*Theobroma*). Pupa greenish-yellow, red-toned with branched wing-like continuations on the head, small white points, green spikes and black markings. Not rare.

G. Group **Epicaliidi**.

By far the most varied group to which most of the neotropical Nymphalidae belong. They show decidedly the characteristic markings of the tropical American butterflies: bands and oblique spots of brilliant metal blue, orange-colour or hemochrome on jet-black ground. There is hardly any retrogression noticeable with respect to the spines of the larvae in comparison to the copious branched spines of the *Vanessidi*, *Hypolimnadii* or *Gynaeciidi*. In the genuine *Epicalia* there is a very remarkable sexual dimorphism prevailing; in the *Eunica* and homogeneous species it is by far less, mostly only reflection in the ♂, white spots in the ♀; finally in the *Catagramma* and their homogeneous species, the *Pyrrhogyra* etc. it is almost totally missing. The animals are absolutely tropical, and of the whole great number of butterflies belonging to this group, only 2 *Eunica* and one *Callicore* reach the very utmost southern extremity of the United States. Nor did I discover near Buenos Ayres any more species, although in the forests of the hinter-land the last remainders of this branch of the Nymphalidae may still be found.

29. Genus: **Pyrrhogyra** Hbn.

The 6—8 species of this genus reaching from Honduras to Paraguay, which are, however, sometimes missing even in woody districts *), are very similar to each other, especially on the under surface. Above they are black with a white or light green subapical spot and a similar median band; the lower surface is preponderantly white with broad dark distal margin and a hemochrome dark-edged line very characteristic of the genus, surrounding the light inner part and often also the apical spot.

Head strong with thick bare protruding eyes and strong palps sometimes prolonged like a nose. Antenna thin, gradually quite slightly thickened. Body tender, abdomen very slender. Wings broad, margin of the forewings curved, of the hindwings dentated or undulated, in the centre angled. On the forewing the costal and median are thickened at the base, but not properly inflated. Cells of all wings closed.

The larvae are still very little known. Their spines bring them in close contact with *Eunica*, *Temenis* and *Epiphile*; they have well and uniformly developed dorsal spines, but as much as is to be seen from the illustrations, the lateral spines are less developed. The pupa shows the same peculiar attachment as that of

*) As for instance near Rio de Janeiro.

Myscelia, because it is attached to the upper surface of the leaf and stands upright or lies right across the leaf. — The butterflies are always met single, but in many districts they are not rare; they fly especially early in the morning and drink from wet places on the road. Their flight somewhat resembles that of *Dynamine* and *Adelpha*. There are about 25 forms known.

a) Upper surface black and white.

P. neaerea. This species, denoted in collections as „*typha*“ is, in its typical form up to now, known only from Surinam. The species, however, ranges from Mexico to Paraguay and reaches far to the west in the Amazon region. The most northern form — **hypsenor** *Godm.* and *Salv.* (= *ollius Fruhst.*) (95 d) from Central America, which came over in great numbers, especially from Honduras, is recognizable by the pointed forewings, the straight band of the hindwings and especially by the white subapical spot of the forewings terminating, downwards and distally, into a pointed tip. — In typical **neaerea** *L.* (= *tipha Ky.*, *docella Möschl.*) this spot is below more rounded off, the bands generally a little broader, those of the hindwings quite slightly bent; from Guiana. — **juani** *Stgr.* (95 d) has considerably broader bands, these rounded and not entirely white, but with a greenish tinge; from Colombia. — **kheili** *Fruhst.*, likewise from Colombia, but according to FRUHSTORFER probably from another district, leans with respect to the breadth of bands to the type of the species; they are narrower, proximally more convex than in *juani*, the band of the forewings cut off straighter and therefore more rectilinear; the lower tip of the subapical spot downwards not so obtuse as in *juani*. — From the Upper Amazon three forms are described. The subapical spot of the forewings is oval, the bands very much broader, but nevertheless varying, so that the forms **cuparina** *Bates*, **amphira** *Bates* and **argina** *Fruhst.* are scarcely constantly different. From the northern form *amphira*, which is mostly to be noticed by the white submarginal dots on both its wings, differs *argina* *Fruhst.* by its smaller size, the band of the hindwings distally sharper defined and a very bright hemochrome spot in the anal-angle of the hindwings, *cuparina* by very broad bands inwardly somewhat blended; this form comes from the southern part of the Amazon and will occur similarly in Para. — In Central Brazil as far as Bolivia and Peru, moreover, flies **ophni** *Btlr.* (95 d) in which the subapical spot of the forewings is far separated from the inner marginal spot by the black ground-colour what is especially striking in Bolivians. — **susarion** *Fruhst.* from Pernambuco is said to approach the *ophni* from Espiritu Santo as well as the *neaerea* *L.* from Surinam, being, however, smaller and with a white band especially broad in the ♀, and at the under surface with a light red line. — The most southern form, **arge** *Stgr.* (95 d) from Southern Brazil and Paraguay, has by far less pointed wings, the subapical spot of the forewings is very obliquely, almost transversally placed and the middle median band very broad (more than double as broad as in *hypsenor*), therefore the ground-colour-bridge which separates both is not so broad as in *ophni*, but much longer. — The larva is rosy red with a light yellow saddle-streak edged in brown across the dorsum and a reddish head shaped a little like a heart, the spines of which are the longest and have fine accessory spines. It quite certainly does not occur on coffee, as stated, but probably lives on Paullinia; the pupa towers almost vertically above the upper surface of the leaf and turns itself towards the light; green with obtuse anterior part; from the back of the thorax projects a green securiform continuation; the partings of the wings and the dorsal carina are tinged with purple-brown. The butterflies fly single, but are not rare, especially in the morning, when they are seen drinking from wet stones and mud-holes on the road.

P. typhoeus *Fldr.* This species is quite similar to the preceding, but the forewings are more obtuse, the hindwings less angled, more rounded in the anal part; the median band is very broad and in the distal area of the forewings there are two small light spots. Colombia.

P. catharinae *Stgr.* (95 e) is one of the largest forms. STAUDINGER knows only ♀♀ and BUTLER who describes his *ophni* from the same district, states only the ♂ of it. I believe that both belong together, but BUTLER's description is so insufficient that one cannot say anything without examining the type. As in many *Pyrrhogyra*, the *catharinae* — ♀ has above chains of white antemarginal spots; they are, however, on the under surface of the hindwings, not flown together to a white cloud, but remain separated, each being surrounded in dark. Sa. Catharina to Bolivia.

b) Bands more or less light green.

P. stratonicus *Fruhst.* This species, unknown to me, is said to be in close contact with the *typhoeus*, but has more greenish white bands, and the little hemochrome band before the distal area of the under surface of the hindwings runs quite straight. The forewings show a little roundish subapical spot, an oblong spot above the cellula and a high narrow median spot. Upper Amazon.

P. edocla *Dbl.* and *Hew.* (95 e). At once recognizable by the beautifully Nile-green bands, a smaller spot in the apex of the forewing, apical from the larger subapical spot and the hemochrome median of the forewings below. The costa of the hindwings, however, which in all *neaerea*-forms is hemochrome below, is here

only red at the base, otherwise white. Typical *edocla* come from Colombia. — In *aenaria* *Fruhst.* (95 c) from *aenaria*. Central America, the apical spot is larger, the subapical spot smaller than in the typical form, so that both the spots do not differ so much in size. — *athene* *Fruhst.*, without exact habitat, perhaps only a temporal form *athene*. of *edocla*, is smaller, with narrow, very pale bands which, on the forewing, are distally deeply notched by the ground-colour. — *lysantias* *Fldr.* from the Upper Amazon is immediately to be recognized by the more obtuse *lysantias*. forewings and the pale-green double as broad band of the wings. — *maculata* *Stgr.* (95 e) showing all the transi- *maculata*. tions from *lysantias* is exactly like this, but has rows of white-green spots before the distal margin of both the wings; Peru, especially known from the Chanchamayo. — *anthele* *Fruhst.*, discovered by R. HAENSCH in Ecu- *anthele*. dor, is darker and smaller, without the dotting in the distal area, or only with remains of it, the light margin of the wings on the under surface being narrower. Seems not to be so frequently occurring as *neaerea* is in its district.

P. otolais *Bat.* (95 c). Mostly much smaller than the preceding, almost the whole upper surface of *otolais*. the wings taken up by the very much broadened, pale Nile-green band, differing thereby from the long-palped *nasica* which has a narrower darker band not reaching as far as the inner margin of the hindwings; on the upper surface very similar to the *crameri*, but below immediately discernible by the median of the forewings being white-green, not hemochrome. From Central America. — *neis* *Fldr.* from Mexico is a little larger and has broad- *neis*. der bands.

P. crameri *Auriv.* (*neaerea* *Cr. nec L.*) (95 c). This is the only *Pyrrhogyra* in which the lower cell-margin *crameri*. on the undersurface of the forewing does not separate the cellule by a little hemochrome band bordered in dark. Above almost like *otolais*. Guiana. — *hagnodorus* *Fruhst.* from Peru has a narrower black margin and *hagnodorus*. on the upper surface a brighter apical spot of the forewing, and *nautaca* *Fruhst.* from Colombia and the Upper *nautaca*. Amazon is larger, the bands narrower and deeper green, and the distal margin of the wings clouded in a brighter violet. — The larva seems extraordinarily similar to that of *neaerea* *L.*, with only a little more black markings, and the pupa is quite equal to the pupa of that species; there may, however, also have occurred a mistake in so far as, owing to the homonymy, indeed a larva of that species was taken for this species.

P. nasica *Stgr.* Similar to the preceding, but at once recognizable by the very much elongated palps *nasica*. and by the green very broad median band not reaching as far as the inner margin of the hindwings; this is, on the contrary, of a brownish black. Colombia. — In *olivencia* *Fruhst.* (95 d) the green area is as broad as in the *olivencia*. typical form, but the red band of the hindwings is distally bordered in brownish black, to such an extent that the bone-yellow in the distal area is diminished to a little narrow band. — *seitzi* *Fruhst.* (95 d) from Bolivia *seitzi*. has narrower and darker green bands; the band on the hindwing is tapering behind and shows with this point in the direction of the red anal dot.

30. Genus: **Lucinia** *Hbn.*

Little yellow butterflies with insignificant black markings on the upper surface, but below richly decorated hindwings with big metallic eye-spots. Head broad with broad front, palps a little elongated, but pretty slender and bent upwards; antenna curled with well deposited clavola. The body slender, the forewings triangular, with smooth or scarcely undulated margin and a little below the apex quite slightly drawn in. The hindwings in the anal part dented, the costa of the forewings weak at the base, the median strongly inflated, the cellule broad. On the Antilles. Only four forms probably belonging to one species, interosculating a great deal and hardly to be maintained as subspecies.

L. sida *Hbn.* (97 b) from Cuba and Haiti, is sufficiently recognizable from the figure.⁵ The animals *sida*. vary considerably in the size of the eye-spots on the under surface of the hindwings, and big-eyed specimens with broad dark wing-margin were separated as subspecies and named *cubana* *Fruhst.* — *cadma* *Drury* from Jamaica *cubana*. *cadma*. is larger, the upper surface of the hindwings has a greyish brown ground instead of white, and the metallic violet-white line before the margin of the hindwings on the lower surface, being distinct in *sida*, is absent. — *torrebia* *Mén.*,⁶ a form hardly differing from *cadma*, occurs in Haiti. *torrebia*.

31. Genus: **Peria** *Ky.*

The little species forming this genus I have never seen alive nor do I find anywhere an indication as to its habits. The species known as *Peria lamis* occurs in many places of northern South America and it differs only with respect to its size. The head is moderately large, the palps short, the eyes naked. Antenna gradually thickened to a thin clavola. Wings entirely bordered, the cells of all the wings closed. Cell of forewing very broad, rather short, the subcostal with 4 veins. The first vein branches off close in front of the end of the cell, the second one considerably further back, the third one terminates into the costa, pretty far before the apex. Precostal of the hindwings bifid, branching off towards the deflection of the subcostal.

lamis.

P. lamis Cr. (= *laphria* Godt.) (97 b). Upper surface without any markings brownish black, under surface honey-yellow, quite slightly strewn in dark; on each wing a straight dark streak runs from before the apex to behind the middle of the inner margin, and before the margin there is an irregular dark line.

32. Genus: **Pseudonica** Ky. (*Nica* Hbn.)

This genus likewise contains but one species, which had been first described by GODART as *Nymphalis flavilla*, and been figured and placed in the genus of *Nica* by HÜBNER. It is a little animal, almost unicolorously honey-yellow, distributed in 4 forms over a great part of Central and South America. The markings on the under surface show pretty much the same design as in *Peria*. Head medium-sized, palps strong, antenna of more than half the costa-length, finely curled, at the end scarcely thickened. Cells of all the wings closed, those of the forewings rather broad. Margin of the forewings almost smooth, that of the hindwings scarcely undulate. Nothing is known of its early stages. The butterflies fly single on forest-roads and like to rest with half-opened wings on leaves close above the ground.

*flavilla.**lunigera.**sylvestris.**canthara.*

P. flavilla Hbn. The Brazilian form has bright orange-coloured upper surface, brown margin of the forewings. The markings of the under surface shines distinctly through to the upper surface. — **lunigera** Fruhst. is the form from the utmost south of the range, Paraguay in the east and Peru in the west. Its forewings are extensively bordered in black; the black margin extends far into the anal angle. At the cell-apex a broad reddish-brown transverse spot. The hindwings have above, at the margin, a complete chain of moon-spots distally bordered in violet. — **sylvestris** Bat. (97 b) from Colombia and the Amazon has in the dark apex a little light dot; the under surface is less marked than in *flavilla*, but still more than in the fourth form **canthara** Dbl. (97 b) from Venezuela and Central America, which is very fallowly ochreous and so faintly marked at the under surface that the markings do not shine through above.

33. Genus: **Temenis** Hbn.

The little species *sylphis* having been taken out of this genus and established in the genus of *Bolbo-neura*, there are only 2 *Temenis* left one of which, however, has an extreme geographical variation. They are medium-sized butterflies with wings of a honey-yellow or hemochrome colour and are spread over the greater part of tropical America. Head pretty stout with strongly protruding eyes, the palps long and strong, antenna gradually thickened to a quite delicate clavolet. Thorax strong, abdomen very slim in the ♂. The forewings in one of the species are angled below the apex, in the other they are of a normal shape; the cellule is very short, at the end broad and straightly clipped. On the forewing the first subcostal vein branches off just before the cell-end, the second close behind, the third, however, far beyond. The larvae are green with a cordiform head bearing two long horns furnished with rosettes of accessory spines; the dorsal spines are reduced in number, somewhat irregular, those on the 3. and 11. segment thickened in the shape of a clavola; the pupa is green with fine red markings and two points on the head; the butterflies fly single, but are not rare.

T. laothoë. This common butterfly varies a great deal, so that 16 forms have been named. It occurs from Mexico to Paraguay and Peru. The most northern form, **liberia** F. (97 c), is above unicolorous of a dull orange colour, with a hardly darker apex of the forewings. — Slightly different from it is **hondurensis** Fruhst. from northern Central America; it resembles also the **ariadne** Cr., but the hindwings are lacking the reddish distal margin, the apex of the forewings is of a pale reddish colour as in **agatha**, with a light apical spot before it. — **agatha** F., flying like **liberia** and **hondurensis** also in the West Indies has a more brown apex of the forewings. — **columbiana** Fruhst. from Colombia approaches very much the Central American form, but it is larger than **hondurensis**, and the ochreous ground-colour as well as the apex of the forewings are a shade darker, especially also the under surface. — **ariadne** Cr. (= **merione** F.) is the longest-known form from Guiana, in which all the forewings have a dark distal margin. — **ottonis** Fruhst. (= **merione** Hbn. pt.) (97 c) has quite ochre-yellow wings in the ♂, but the apex of the forewings is cut off by an oblique subapical band, the lower end of which runs along the distal margin to the anal angle; Surinam. — **violetta** Fruhst. (97 c) from Rio Waupes which occurs to the south as far as Bolivia, has broad blackish brown apex of the forewing and the ♀ almost quite dark hindwings which are coloured in yellowish red only at their apical area. But in Bolivia flies also the **ottonis**-form with ochre-yellow hindwings in the ♂. — In the Amazon district fly furthermore the forms **pseudolaothoë** Fruhst., forewings with broad dark apex like in **laothoë**, but the hindwings not dark, but yellow, and **pseudoariadne** Fruhst., in which the ground-colour is paler ochreous and more fallow, the apical area of a duller colour, and in the ♀ the inner border of the dark apical area is quite slightly obtuse-angled. This form was described from Obidos. — **laothoë** Cr. is the form having a blackish brown apex of the forewings, its inner margin being uniformly rounded, the forewing-discus of a bright yolk colour, the hindwings above preponderantly blackish-brown. This design of colouring very much reminds us of that of *Epiphile lampe-hübneri*. **thusa** with which the species flies together in different places. — **hübneri** Fruhst. (= **merione** Hbn. pt.) is simi-

lar, but here only the inner margin-half and the margin of the hindwings are blackish brown, the costal half, however, golden-yellow; from the interior of Brazil (Minas-Geraes). — **bahiana** *Fruhst.* is a little form, intensely *bahiana*. ochreous, forewings with subdued violet apical margin and the same oblique band with angled inner margin. — **santina** *Fruhst.*, from South Brazil to Paraguay, has the apical area of the forewings more pregnantly marked *santina*. in violet; the ♀ larger than *bahiana*, the light zone behind the cell broader and paler. — **pedaina** *Fruhst.* from *pedaina*. Pernambuco approaches *santina*, but differs from it by the narrow, sharply delimited blue margin of the hindwings. The hindwings of the ♀ with a smoke-brown tinge suffused with a slight blue reflection, before the blue transverse band of the forewings a large pale-red spot. Has not come to my hand. — **korallion** *Fruhst.*, *korallion*. likewise unknown to me, is said to be the most beautiful form of the species. „Forewings with red apical area and red cellule and the same broad subapical oblique band. Cellule, however, sometimes overflowed in blue, as well as the transverse band on the forewings. Hindwings of a magnificent violet blue with the exception of a red sharply delimited distal margin.“ — Larva green with head marked in white, dark longitudinal line and blackish transverse saddles, the thorax-rings quite blackish. Venter albescent, with dark markings; feet albescent, as well as the spines on the 12th ring, otherwise the dorsal spines black, those on the 3rd and 11th ring claviformly thickened; on *Paullinia seminula* and *Serjania meridionalis*. Pupa light green, with dark green and with some red markings, at the head two short wings. The butterflies are seen on forest roads in company of the similar *Pseudonica*; they usually fly only short distances and especially rest on branches of bushes hanging over the road.

T. pulchra. Above black with intensely hyacinth-blue reflection which, however, becomes only visible when observing the butterfly from the direction of the origin of the light. Forewings with red base-third and oblique band, hindwings with large red spot in the anterior discus; under surface brown, often with some blue metallic dots. As in *laothoë* the colouring changes according to the other butterfly flying with it (*Pseudonica canthara*, *Epiphile lampethusa* etc.), the apportionment of the red colour in *pulchra* depends on the companion-butterfly from the genera *Catagramma* and *Siderone* together with which it flies; the former belong to the *pitheas*-group. In the typical **pulchra** *Hew.* (97 c, d) from Colombia the red oblique band of the forewing is narrower, *pulchra*. the base-red not so extended as in the Peru-form; on the under surface base-red and oblique band are separated by a black band (like on the upper surface). — In **dilutor** *Fruhst.* (97 d) from Peru the separating band *dilutor*. between base-red and oblique band on the under surface as well as the apical area is overlaid in red, so that the hindwing seems almost unicolorous red in which the black appears but like a mere shadow. — **amazonica** *Fruhst.* from the Upper Amazon has still less base-red than *pulchra* and the red forewing-band *amazonica*. stands more steep. — As a ♀ form of *pulchra* *STAUDINGER* describes a butterfly which he denominates **melania** *melania*. (97 d) and which we illustrate according to a specimen in *FASSEL*'s collection. The forewings have an orange oblique band, the hindwings a large, subanal blue-silver spot; from Colombia, taken near Muzo. — On the whole, *pulchra* is the same *Proteus* as *laothoë*, and we could construct still more names for it than for the latter; of all the 14 specimens I have at hand, there are not two fully alike on the upper surface, everywhere there is another distribution of the red colour; the most constant is still the under surface of the hindwings, with mostly 2 blue little eye-spots in the discus, but there are also specimens with 1 eye-spot and even without any at all.

34. Genus: **Bolboneura** *Salv. and Godm.*

Only one little Mexican butterfly forms this genus. Formerly placed to the *Temenis*, it was separated from this genus by *SALVIN* and *GODMAN* chiefly owing to the structural differences of the veins and legs. Indeed its proper position might be near *Epiphile* with which genus also its colouring and markings are somewhat harmonizing. By the basally inflated costal and median it approaches, however, the *Cystineura* as well as certain *Eunica*. But the shape of the wings immediately differentiates it from *Cystineura*: the apex of the forewings is obliquely clipped. Furthermore the under surface shows intense metallic markings, which are never found in *Cystineura*. Like in *Epiphile* the 1st and 2nd subcostal veins originate before the cell-end; the upper discocellularis is short, the lower discocellularis meets the median close behind the origin of the 2nd vein. The front legs are very slightly haired, the middle and hind legs without spines, with short strongly curved claws. The palps are similarly prolonged as in *Cystineura*, especially the terminal joint and rather more in the ♀ than in the ♂. The middle joint is thick and inflated.

B. sylphis *Bat.* (97 d). Not to be confounded with any other species. Above the forewings are interiorly *sylphis*. overflowed by magnificent blue reflection, the distal area black with 2 ochreous bands, the hindwings of blue iridescent colour, before the dark marginal band orange. At the marginal band itself a blue metallic line. The under surface yellow, on the forewing two black oblique bands with metallic-blue centre. The butterfly is local but not rare.

35. Genus: **Epiphile** *Dbl.*

The range of this genus extends from Mexico to Paraguay. Of the 18 species there are about 14 occurring in Colombia, Venezuela and Central America where the genus consequently has its principal range; the

animals live preponderantly in the mountains. They are characterized by their exterior and a marking peculiar of all species: on the under surface of the hindwing there is a light triangular costal spot contrasting with the ground-colouring. As *Epiphile* is hereby already well discernible from all the other genera, it is unnecessary to give a description of the formation of the veins etc.

According to W. MÜLLER the shape of the eggs of *E. orea* and the way they are deposited, is like in *Myscel. orsis*. The larva lives on *Paullinia seminuda* Rod. and *Serjania meridionalis* Cambes. It has at each side of the head a horn as long as the face, furnished with very little additional spines; at the head there are beside the two white stripes coming down from the horns another white spot above the mouth and another white one between the horns; the back part of the head and of the horns is pale red, body velvety green, the region beneath the stigmata lighter; there are the following yellow dark-edged lines: 2 dorsal lines running rather distant from each other, 2 lateral lines approaching each other at the sectional border and margining the spines there, a stronger yellow line along the stigmata interrupted in the region of the stigmata, and an undulating line between the lateral and stigmata-lines, on each section there stand 2 lateral spines which in their turn have again very short spines. When at rest, the larva is in a defensive position pressing itself flat on the leaf with protruded horns, as well as in an offensive position resting like the *Sphingidae*-larvae with raised head, while its horns are raised as if threatening. The larva, as far as to the 3rd stage sticks fecal lumps to the browsed ribs of the leaves. The pupa is likewise similar to that of *Myscelia orsis*; ground-colour above beautiful velvety green, beneath pale whitish-green, above beyond the 5th segment as if covered with a thin layer of wax, both the regions sharply separated by a line running transversally across the 5th section and being composed of 3 anteriorly open arcs; a narrow brown line runs along the edge of the wings; on the base of the wings and on the head there are spots of a bright mother-of-pearl gloss; its reaction upon luminous effects is like in *Mysc. orsis*, though rather sluggish.

E. orea differs from the similar species by a little rounded spot on the upper surface of the forewings near the base of the wings which has the same colouring as the two bands of the forewings. — **orea** Hbn. *iblis*. (97 e) from Brazil (to the south of Rio de Janeiro) is but little different from **iblis** Fldr. from Colombia in which the yellow bands of the forewings are only a little broader. The ♀ of *orea* is, as the figure shows, rather different and has no reflection. The ♀♀ of *iblis* usually have a yellow, exceptionally an almost white band of the forewings; this form we call **albifasciata**.

plusios. **E. plusios** G. and S. (97 e) from the Chiriqui, regarded by the said authors as a form of the *orea*, has a white subapical spot of the forewings, the bands of the forewings are composed of differently shaped spots and the hindwings are opalescent green (not blue).

negrina. **E. negrina** Fldr. (97 e) from Rio Negro and Colombia has 3 yellowish brown subapical spots and differently shaped median bands of the forewings.

epimenes. **E. epimenes** Hew. (97 e) from Colombia has a magnificent greenish blue reflection on the upper surface, with the sole exception of the apex of the forewings and the costal margin of the hindwings.

kaltreyeri. **E. kaltreyeri** Fassl (97 e) from Western Colombia (Aguaca valley, 2000 m) has more of a blue than green, but very intensive gloss and the band of the forewings is strongly reduced.

plutonia. **E. plutonia** G. and S. (97 f) from Central America, has beside the blue spot on the wings no blue reflection. This species differs also by the more compact shape of its wings.

electra. **E. electra** Stgr. (97 f) from the Venezuelan mountains (Merida) is remarkable for its magnificent reflection and differs from all the similar species by a light band of the hindwings.

dilecta. **E. dilecta** Stgr. i. l. (97 f) from Bolivia has a beautiful violet reflection of the whole upper surface except the apex of the forewing; the band of the wings is straight and uniformly broad.

dinora. **E. dinora** Fassl (97 g) from Western Colombia (Aguaca valley, 2000 m) is the largest species of the *boliviana* genus. Only on the light falling upon it in a very acute angle, a slight blue reflection is noticeable. — **boliviana** form. nov. from Bolivia (Coroico, 1200 m) has a distinct white subapical spot on the forewings, a little narrower and lighter yellow bands and in the anal angle of the hindwings a distinct yellow eyespot. The under surface is lighter brown and less marked.

epicaste. **E. epicaste** Hew. (97 g) from Colombia has its ♀ entirely different from the other *Epiphile*-♀♀, since its band of the forewings shows a greenish-blue colouring with a metallic glimmer; similarly coloured is the distal margin of the hindwings. It was discovered by Mr. A. H. FASSL in the Aguaca valley at an altitude of 2000 m. Another ♀ form is called **bonplandioides** Fassl; it has sulphur-yellow under surface of the hindwings with hardly any markings and the same apices of the forewings. — The form from Bolivia (Coroico, 1200 m) which we call *latifasciata* **latifasciata**, shows a little broader and lighter yellow bands of the forewings and a straight band of the hind-

wings of the same colour, but about double as broad and reaching almost to the distal margin of the wings. The under surface of the hindwings is lighter (more yellowish) and the yellow spot on the costal margin has almost double the size as in *apicaste*.

E. fassli Weym. i. l. (97 f) from Peru (Pozuzo) is similar to the *apicaste latifasciata*, but smaller and *fassli*. it also lacks the black spots near the base of the forewing. The under surface resembles that of *dinora*, but it is lighter.

E. hübnéri Hew. (98 a) from Brazil and Southern Brazil differs from the similar species by the rather *hübneri*. light basal area of the hindwings as well as by the sphenoidal spots near the wing-base on the upper surface of the forewings.

E. chrysites Latr. (97 g) from Colombia and Venezuela resembles *hübneri*, but differs by the dark basal *chrysites*. part of the hindwings; the under surface is much more marked than in the latter form. The ♀♀ discovered by Mr. A. H. FASSL have a white band of the forewings and almost entirely dark hindwings.

E. adrasta Hew. (97 g) is distributed from Mexico to Panama. It is distinguished by the straight *adrasta*. yellow bands; in many ♂ specimens there is a little white spot in the apex of the forewing; this spot is much larger in the ♀ which has also a light yellow median band of the hindwings. — **bandusia** Fruhst. from Guatemala, *bandusia*. from the volcano Chiriqui and from Eastern Mexico is smaller and has broader black bands. The ♀ shows a more extensive rusty brown basal part.

E. grandis Btlr. (98 a, b) from Costa Rica, as shown in the figure, is an entirely different form. Whether *grandis*. it belongs in this genus, we cannot ascertain, because we were unable to procure a specimen of this species.

E. eriopis Hew. (98 a) from Colombia also shows like the following species a divergent feature. No *eriopis*. other species has in the ♂ a white band of the forewings. The ♀ discovered by Mr. A. H. FASSL is of an insignificant appearance.

E. lampethusa Dbl. and Hew. (98 a) from Colombia and Bolivia differs by the style of its markings *lampethusa*. from all the other species. The ♀ discovered by Mr. A. H. FASSL has a duller colouring and 2 sphenoidal subanal blue spots on the hindwings.

36. Genus: **Catonephele** Hbn.

The species of this genus which is distributed from Mexico to Paraguay, without exception show such a great sexual difference that it is often difficult to find out the sexes of the different species. By their exterior all the species, in spite of the sexual dimorphism, are so well characterized that the ♂♂ are without exception, the ♀♀ mostly, easily to be recognized as members of this genus; only the ♀♀ of the smaller species resemble the ♀♀ of certain *Myscelia*-species. — The forewings have five subcostal veins of which two are branched off before, the 3rd vein soon after the end of the middle cell; the precostal of the hindwings is furciform, the legs are of a tender structure and sericeous. Eggs, larval form and development are similar as in *Myscelia orsis*. The larvae of *Cat. acontius* and *numilia penthia* live on *Alchornea iricura* Cas. and *cordata* Müll. Arg., the most frequently on the former.

Prof. Dr. THIEME has given the following description of the habits of the butterflies: „The species of this genus live in the densest neotropical primeval-forest; we shall never find them in the plains or on cleared land. Humid soil, an extremely rich vegetation together with ozonic air seem to be absolutely necessary to them. They are, like many of the very most iridescent Nymphalidae, decided gourmands. Their fondness for dainties, however, is mostly turned upon filthy food. They disdain the banks of rivers and brooks; but further up on the wooded terrace where the little Indian hut lies hidden, in which our mules are stabled and where, on the barn-like square the poured out yeast of the national sugar-cane drink and other refuse are drying in the sun, — that is where you will be sure to find them during the hot noon-tide, intermixed with innumerable specimens of the *Callicore* and *Catagramma* species, among which they shine through afar owing to their size. And should we not find them here, we will discover them behind the house where, in the midst of heaps of all kinds of refuse, there are still more malodorous temptations which the careless Indians use to deposit here. We easily notice their delight in relishing their fetid meal, running to and fro round the lure and flapping with their wings as if desirous to balance themselves, so that the magnificent golden spots of the upper surface are now sparkling in the sunshine, while, when at rest, they seemed to resemble a faded leaf. In spite of the filthy surroundings we strike out with the butterfly-net and are glad to succeed in taking the animals without having seriously befouled the instrument. But even so we notice the remains of the disgusting meal on the surfeited animal, and with a feeling partly of loathing partly of pleasure we drop the butterfly into the bag. When opening it in the evening, however, our olfactory nerves once more remind us of the joy and sorrow of catching butterflies in the tropics.“ — According to A. SEITZ the butterflies are fond of being on the top of high trees.

- nyctimus*. **C. nyctimus** Westw. (98 c) is distributed from Mexico to Venezuela and Ecuador and apparently not rare.
- salacia*. **C. salacia** Hew. (98 c) from the Upper-Amazon (and Brazil?) differs from the preceding in both the sexes by another shape of the wings, in the ♂ by the median band of the forewings running almost rectilinearly, in the ♀ by the absence of the rusty red spot near the apex of the forewings and by the rusty yellow colouring in the anal angle of the hindwings and beneath by the exterior bands having the same shape as on the upper surface.
- sabrina*. **C. sabrina** Hew. (98 d) from Brazil and Southern Brazil is remarkable for the style of colouring in the ♀ which does not repeat itself in this genus.
- antinoë*. **C. antinoë** Godt. (98 d) from Brazil and the Amazon region is considerably larger, the ♂ having far protracted apices of the forewings. Although the ♀ is very similar to the ♀ of *acontius*, it has in the middle of the discocellularis of the forewing, close to the subcostal, a rusty red spot which is missing in the ♀ of *acontius*, whereas the latter shows more rusty red markings near the apex of the forewings. Beneath the ♀♀ of the two species are very different, as in the ♀ of *antinoë* the brown colouring is prevalent.
- chromis*. **C. chromis** Dbl. and Hew. (= *pierreti* Dbl. and Hew.) (98 d, e) from Honduras to Bolivia is more stoutly built and has narrower golden-yellow bands. The ♀ has a broader yellow median band of the hindwings. —
- columbana*. ab. sex. ♀ **columbana** Stich. (from Colombia) has yellow spots on the forewings and white spots on the hindwings.
- godmani*. **C. godmani** Stich. (98 e) from Northern Colombia and Central America (specimen before us from Chiriqui) has a similar shape as *chromis*, but a broader and shorter golden-yellow median band. In our ♀ the markings on the hindwings and the two spots in the middle of the costal margin of the forewings are yellow, the other markings of the forewings, however, are white. The figure shows that, compared with the ♀ of *chromis*, the median band of the hindwings is considerably narrower, while the submarginal spots are broader.
- salambria*. **C. salambria** Fldr. (98 e) from Colombia, Peru and Bolivia has still more broadened golden-yellow bands which fill up the whole interior area of the hindwings, except a black spot at the base of the wings. The ♀ resembles the ♀ of *godmani*, but has in the apex of the forewings larger and more strongly expressed spots all of which are yellow; the submarginal yellow spots of the upper surface of the hindwings are narrower, something like in the ♀ of *chromis*.
- numilia*. Of **C. numilia** 4 forms are described. The typical form *numilia* Cr. (98 b) occurs in Surinam and on the Amazon; it is chiefly characterized by the ♀ which shows a short and broad yellow median band of the forewings and yellowish-red discus of the hindwings. — In *esite* Fldr. from Mexico to Colombia the golden-yellow spots are reduced in size in the ♂, and the ♀ has black hindwings and a narrower, but longer yellow spot of the forewings. — *penthia* Hew. from Brazil (to the south of the Amazon) is smaller, the ♂♂ have somewhat less blue spots at the distal margin of the hindwings and the ♀♀ have yellow instead of greenish blue submarginal markings of the hindwings (like the ♀ of *esite*). But there are also ♀♀ occurring that have the hindwings similar to those of *numilia*, only the brown-red colour being darker; we denominate this form ab.
- fulva*. **fulva**. — *neogermanica* Stich. from Paraguay is the smallest form; the golden-yellow spots are more subdued and the bluish markings at the distal margin of the hindwings are only suggested. The ♀ has a strongly cornered apex of the forewings, a concave distal margin rounded behind and a straight inner margin; the hindwings are rounded, at the anal end a little angular. — The larva of *penthia* is in the last stage bright green, at the black head there is above the mouth a large red spot, so that only lateral stripes remain of the black colouring, the whole animal is as if overstrewn with white glass beads, the ground of the dorsal and subdorsal spines is of a bright red, the other spines being pale yellow, above them all the spines as far as the middle of the accessory spines are green, then follow a black point or a black transversal band and a white point. The larva has similar habits as the larva of *Myscelia orsis*, but it does not cover itself with faeces; when at rest, it is about S-shaped, in which position its body and head are lying flat on the leaf. The pupa on the whole resembles that of *M. orsis* and is something less flattened out; ground colour green, above preponderantly whitish green, especially on the 6. to 9. segment, between the edge of the wings and the margin of the wings there is a brown stripe which is continued forward and, enclosing the upper part of the horns and the base of the antennae, unites itself there with the other side; on the 6. and 7. segment there are little black dots as remainders of the spines. The pupa is fastened to the upper surface of the leaves and raises itself under the effect of light, or rather turns towards the light.
- acontius*. **C. acontius** L. (98 c) from Colombia, Guiana, Brazil and Paraguay exhibits, together with the following, very closely connected species, in the ♂ a special shape of the wings; the figures make a further description dispensable. The ♂ is distinguished from the following *orites* by a brown-coloured scent-organ on the upper surface of the hindwings and, besides, by the golden-yellow band of the forewings being semicircularly bordered in front. — *exquisitus* Stich. is a larger form from the Upper Amazon distinguished by a strongly

curved costal margin, a strikingly expanded apex and a very concave distal margin of the forewings, and an almost straight costal margin and undulated border of the hindwings. The ♀♀ are also larger corresponding to the ♂♂, but with respect to their shape, markings and colouring not essentially different from the typical *acon-
tius*-♀♀. — The larva is, according to the figure, in the last stage green with 4 rows of brown branched spines on each segment; the two long horns on the head, branched out in three grades, are of the same colouring, the head is black, in the middle white, the ventral part and the legs are dull yellow. The pupa, according to the description of W. MÜLLER, resembles on the whole that of *penthia*, and like this reacts also upon the influence of the light.

C. orites Stich. (98 b) from Panama to Peru (?), though there is also a ♂-specimen from Southern *orites*. Brazil (Santa Catharina) in our possession. The golden-yellow median band of the forewings is in front bordered rectilinearly and the androconium of the hindwings is grey-coloured. In the ♀ the yellow spots are less sharply separated than in the *acontius*-♀♀. This species, on an average, is also larger than the *acontius* flying in the same districts and there are even very remarkably large specimens among the ♀♀. — *C. acontius* and *orites* also differ somewhat in the shape of the male secondary sexual organ, it is, however, possible that the two forms might be temporal forms of one and the same species.

37. Genus: **Nessaea** Hbn.

This genus, which only a few years ago was justly separated again from *Catonephele* by H. STICHEL, has but few species differing very little in their exterior. It is distributed from Mexico to the Amazon River. Compared with *Catonephele* there is but little difference in the veins. BATES says about *N. obrinus*: „This charming butterfly frequents swampy places in the woods of Para and, with the exception of some districts, is less often found in the whole Amazon valley. Its flight is extremely impetuous, but it is fond of resting on leaves where a ray of sunshine breaks through the shade.“ This description apparently applies to all the species of this genus. The larva of *obrinus* was known already to the ancient authors. If the description be right, this larva essentially differs from the well-known larvae of *Catonephele* by the considerably shorter and stronger spines on the head and by only one row of spines (instead of 4 as in *Catonephele*) being, however, on the back.

N. obrinus L. (99 b) from Guiana, the Amazon and Bolivia, is the most beautiful species of the genus, *obrinus*. the ♂ being adorned on the hindwings by a broad orange-yellow band, which in other species is seen only less developed or not at all. The ♀, as already indicated, has not got this orange-yellow band, but it has an elongated green spot in the apex of the forewings. — The larva is green, has a dark red lateral stripe, a red head with two moderately long branched spines of the same colour and, on each segment of the body, in the middle of the dorsum a short green ramose spine.

N. batesii Fldr. (99 c), also from Cayenne and the Amazon, differs in the male sex from *obrinus* by *batesii*. having a short straight band instead of the broad yellow band of the hindwings, and by a short green band in the apex of the forewings.

N. aglaura Dbl. and Hew. (99 c) from Mexico and Guatemala, differs considerably from the preceding *aglaura*. forms by the quite different position and shape of the yellow band of the hindwings; the under surface, however, is quite similar.

N. regina Salv. (99 b) from Venezuela and Colombia is on the forewings like *aglaura*, but the hind- *regina*. wings are unicolorously black, except a small brown spot at the inner angle. The ♀♀ are of a more subdued colour (greyish-black) and, like the ♀ of *obrinus* and *hewitsoni*, have 2 red-brown little spots in the middle cell of the forewings.

N. hewitsoni Fldr. (99 b) from Colombia, Ecuador, Peru and the Upper Amazon is above black with *hewitsoni*. one green band on each of the wings. The ♀ has no green band on the hindwings.

38. Genus: **Myscelia** Dbl.

The species of this genus are distributed from Mexico to Southern Brazil. They are easily to be recognized by the shape of the wings, for both forewings and hindwings have corners and spikes. By this shape they differ from *Catonephele* in which thus shaped wings do not occur; moreover the *Catonephele*-species, with 2 exceptions, are considerably larger. In the *Myscelia*-species an iridescent-blue upper surface of the ♂♂ is prevalent. As to their veins etc. they are not different from the *Catonephele*-species. One species, *capenas*, having hitherto been united with *Catonephele*, has been removed to *Myscelia* by H. STICHEL. We also place here *sophronia* because, according to its exterior as well as according to the formation of its veins and palps, it better belongs here than to *Cybelis*. — According to MÜLLER the following is to be said about the early stages. Food-plant of *M. orsis* is *Dalechampia triphylla* Lam. The egg is about hemispherical, a little oval and, with a broad basis, sticks on to the leaf, it has fine transversal stripes, is covered with 10 or 11 longitudinal veins growing

narrow but distinctly higher towards the top, not reaching, however, the pole; the eggs are singly stuck to the lower surface of the leaves. In the last stage the larva is 16 to 28 mm long, the head is green from each side of which, like antlers, there rises a horn of about three times the diameter of the head. These light-brown horns are in two places shortly ramulous, and on their top there is a star-like formation (rosette), the segments of the body show short branched green spines in varying numbers, the body is green with numerous white papillae; after the 1. or 2. skinning the animal, when at rest, takes up a position in which the body in its entire length is lying flat on the leaf, the head being lowered in such a way that the points of the horns are touching the leaf (defensive position). During the first two stages the little larva gnaws off the leaf as far as the ribs on which it deposits its faeces. The pupa is somewhat flattened out, especially at the posterior parts, on the dorsum, except the 2. segment, without any edge, appearing therefore, when seen laterally, rather slender, from above especially in the region of the segments 5—7 broad, from here towards the front a little, towards the back considerably reduced in width; it is little tuberosus, 2 short conical points at the head, a tapering edge on the 2. segment, a very prominent, smooth edge of the wings, 3 movable connections of the segments, rather freely movable in all directions, the end of the abdomen is like in *Ageronia* broad, flattened down. The pupa is fastened to the upper surface of the leaves, raises itself under the effect of the light and turns itself towards the light. — A. SEITZ reports about the butterflies: The ♂ of *M. orsis* most positively belongs to the most magnificent sights. The sparkling blue colour attracts even the glances of those who are not specially interested in nature. The living specimen never exhibits the large shining grey spot at the inner margin of the hindwings, which disfigures the prepared butterfly, for even in its swiftest flight the *orsis* never raises its forewings so high that this spot would become visible. The ♂ of *orsis* is very frequently seen (near Rio). Everywhere in the woods, on wet roads, on bushes, at little clearings they are resting in wait at the ends of branches and they occur in most any season of the year. In São Paulo, I do not remember of having returned from any of my numerous excursions without having found some specimens of *orsis*, although I never saw many of them together. The ♀♀ of this species remind us a great deal of some *Neptis*; but while the Indian species of the latter genus particularly rested on flowers, I never noticed the like in the *Myscelia*-♀♀. The latter always settle on leaves, the ♀♀ fluttering indefatigably from one leaf to another and resting on each of them but for seconds. If one chases them, they retire into the interior of the bushes (while the other Nymphalidae, quite on the contrary, fly out of them when being pursued); this strange conduct is, of all the day-butterflies, experienced but in the *Brassolidae* and some *Satyridae*.

- orsis*. **M. orsis** *Dru.* (98 f) is the best known species from Brazil; there is a considerable difference in the sexes. Like the following species, the ♂ has an androconium consisting of a black spot near the costal margin of the hindwings and in a corresponding blank friction-area, on the under surface of the forewings, being accompanied by a ventricose expansion of the inner margin of the forewings.
- cyanomelas*. **M. cyanomelas** *spec. nov.* (98 f) from the Lower Amazon (Santarem) has a much darker (brown) under surface with bluish-whitish markings.
- cyaniris*. **M. cyaniris** *Dbl. and Hew.* (99 a), distributed from Mexico to Venezuela, is a rare species. The ♂ is of a bright iridescent blue. The light markings are in the non-iridescent ♀ either whitish or bluish.
- ethusa*. **M. ethusa** *Bsd.* (99 a) from Mexico has only shining blue stripes, but no reflection.
- rogenhoferi*. **M. rogenhoferi** *Fldr.* (99 a) from Mexico, which is known to us only from the figure, is presumably a temporal or local form of *ethusa* from which it differs by more violet striate markings and larger white spots on the forewings.
- pattenia*. **M. pattenia** *Btlr. and Druce* from Costa Rica resembles *ethusa*, but the markings are more greenish-blue and the second and third blue bands of the hindwings are narrower and nearer to each other. The white spots on the forewings are more strictly separated.
- leucocyana*. **M. leucocyana** *Fldr.* (99 a) from Venezuela has markings shining in blue on the wings and also whitish spots on the forewings.
- cyananthe*. **M. cyananthe** *Fldr.* (99 a) from Mexico has likewise blue-shining, but much broader markings; there are no white markings.
- skinneri*. **M. skinneri** *Mengel* from Mexico (Boyemena, Sinoloa) has not become known to us. It is described: Ground-colouring of the whole upper surface black, along the inner margin of the hindwings little lighter. Beginning at the base of the forewings there stands a purple spot extending more than $\frac{3}{4}$ inch in the middle cell, nearly $\frac{1}{4}$ inch in the wings. Along the margin of the wings there runs a line of white or light-blue spots, broken along the whole margin. There is a parallel line of spots of similar colouring, though somewhat darker, running close to the angle. Here there are two white apical spots surrounded by a very fine blue shine, 3 sub-marginal spots and 2 in the centre of the costal margin of the same colouring. The hindwings are rounded with a thin, broken line of white spots running along the angle. A broad spot of the same purple colour as on the fore-

wings, proceeding from the base in the cell, mostly terminates at the upper margin of the wings. It is not divided as on the forewings. Near to the margin is a row of purple spots running parallel to the angle. A second and third marginal row goes through the wing. Between the last row and the broad spot, a band runs into the centre through the wing. Inclusive of this row and exclusive of the white marginal line, 4 rows of purple-coloured spots stand between angle and spot. The under surface of the wings as in *streckeri* Skinner, similar to the *streckeri*, under surface of *Pyrameis atalanta*, and can likewise not be described.

M. sophronia Godt. (98 f), a very rare species from Brazil, has blue colouring on the hindwings and on *sophronia*, the basal part of the forewings, on the latter wings also white spots. The ♀ has a duller, more steel-blue colouring, and larger white spots on the forewings. The reflection of this species is very strange. It is in the ♂, when the animal is held towards the origin of light, violet-blue, while it is cyan-blue when seen standing between the origin of the light and the butterfly; in the ♀ it is green. The species is known to A. SEITZ only from Southern Brazil where it flies rather high up in the Orgel Mountains and seems to be very rare. He did not come across them near Rio itself, but according to V. BÖNNINGHAUSEN it occurs in single specimens to the north of it. According to STAUDINGER, the species also occurs in the mountains of Venezuela.

M. antholia Godt. (98 f) from the Antilles is larger than the preceding species and has black wings of a *antholia*, blue iridescence except the distal margin, the forewings have a large white spot beyond the middle cell and obliquely below it another something smaller one, so that they form an interrupted white band. In the apex of the forewings there is placed another smaller white double-spot. The hindwings are without any markings, except the ♀ in which also the blue reflection is missing nearly altogether, and in which the distal margin is whitish at the front part, and at $\frac{1}{3}$ of the width of the wings there is an effaced line of white dots terminating into the costal margin.

M. capenas Hew. (98 f) from the Upper Amazon shows but little sexual dimorphism; the ♀ has a *capenas*, more grey ground colouring and more pronounced markings. We have a ♂ at hand from Rio Madeira (Humayta, June to September), which is considerably smaller and has no brown band on the hindwings, and above the blue inner marginal spot of the forewings there is one more such spot, the under surface being also darker. We denominate this (local?) form as *madeira* form. nov. — *octomaculata* Btlr. from Peru differs especially by *madeira*, *octomaculata*, having 4 instead of 3 bluish spots on its forewings.

39. Genus: **Cybdelis** Bsd.

Very much approaching the *Eunica*, but differing from them by the fur-like haired eyes. The cells of the hindwings, being open in *Myscelia*, are closed in *Cybdelis*. The colouring is throughout above black with white spots and blue reflection which is, however, concentrated upon the surroundings of the spots. The head is rather stout, the eyes very pilose, the palps long, at the top lowered, antennae of medium length with flat clavola, the thorax robust, the legs strong and the abdomen slender; the forewings angled below the apex, the 1. subcostal vein originating at the cell-end, the 2. right after, the 3. beyond the middle of the wings, the cells of both wings closed, the 2. median vein of the forewings very much bent. Precostal of the hindwings simple, very much bent. There are about 4 forms known that are closely connected with each other; all of them occur in the warmer parts of South America and are rather numerous in some places.

We reproduce here a ♂ of **C. phaesyle**, of which HÜBNER figures only the ♀. The species is probably scarcely more than the southern form of *mnasylus*. Typical *mnasylus* Dbl. and Hew. (102 B h) from Venezuela *mnasylus*, have on the forewing an oblique spot behind the cell, 2 little punctiform spots and a larger round dot near the anal angle white, and on the hindwing a white opalescence encircled by a fine violet-blue. — In *thrasylla* *thrasylla*, Fldr. (102 B h) which seems to be an alpine form widely spread in the north of South America, the margin of the blue opalescence on the hindwing is violet and so much broadened that but a little white nucleus remains in the centre, not larger than one of the white spots on the forewings. — *boliviana* Salv. (102 B h) has the *boliviana*, white spot entirely covered by blue, and in *phaesyle* Hbn. (102 B h) itself the opalescence on the hindwing is *phaesyle*, missing altogether, the hindwing being unicolorously sepia-brown with quite a faintly dark submarginal line; but behind the cell of the forewings there is a white band consisting of three bands, which is connected with the isolated spot before the anal angle by a violet iridescent band. The latter is the most southern form reaching in the east as far as to the mountains behind Rio de Janeiro, in the west as far as Peru and Bolivia.

40. Genus: **Libythina** Fldr.

This genus owes its name principally to the palps being, like in a *Libythea*, prolonged like a nose. I am not able to give any description of their habits and early stages. With the preceding genus behind which it was placed there is, in my opinion, no relationship whatever, but rather with the genus *Ergolis*. The eyes are naked here, in *Cybdelis* furry; the antennae gradually and slightly thickened, in *Cybdelis* with a flat

clavola; the veins are quite divergent. The 3 principal veins are inflated at the base, the median is thickened as far as to the branching-off of the 1. vein, the base of this vein starting directly beyond the base is even also thickened in the ♂ etc. — There is only one species known from the Amazon River, being rare as far as I know.

curieri. **L. cuvieri** Godt. (hyperipte Hbn.) (97 d). A medium-sized butterfly above and below dark-brown; the forewings with a weak prong below the apex, the hindwings strongly bent at the anal part. Forewings with 6 scattered white punctiform spots in the distal area and faint violet reflection in the inner area. On the under surface the white spots are more numerous, the hindwings with a purple gloss. From the Amazon (Obidos, Teffé, the figured specimen from Santarem). The stated habitat „Jamaica“ might be due to a mistake in confounding it with *Eunica tatila* (100 A a) which is not quite dissimilar. Mostly single and in many places of the range rare.

41. Genus: **Eunica** Hbn.

About 80 forms of considerable geographical variability, but concerning the specimens from the same region, mostly being of an amazing constancy, form this genus. The animals are very elegantly shaped, reminding us very much of our *Apatura*, nearly always of a brownish-black ground-colour with few white spots, but often with a magnificent blue reflection which is sometimes also seen in ♀♀. Just like the American *Megalura* are in certain connections to the *Cyrestis* of the Old World, and the *Cystineura teleboas* to the African *Neptidopsis*, we find the same connections in *Eunica* to the African *Crenis* having probably also like these numerous though short spines in the larvae *). The butterflies have the median of the forewings strongly thickened or even distinctly inflated at its base, as far as to the branching-off of the middle median vein; sometimes even this is also strongly thickened as well as the subcostal. The forewings are sometimes angled below the apex, the cell of the forewings closed, that of the hindwings often closed by such a fine transverse vein that it is only distinctly noticeable in transmitted light or after desquamation. Antennae gradually thickened to a thin and flat clavola of more than half the length of the costa. Middle and hind-tibiae not prolonged as in *Gynaecia*, *Ageronia* etc. Wings with slightly undulated, smooth or also dentated margin. — The butterflies fly when the sun is shining, but by preference in the shade of the woods, they especially live in the mountains, are mostly found single or even rarely, but at times they suddenly occur in great numbers. Most of the species are to be found in the Amazon-regions and Northern Peru, only 3 species go far to the south. They seem to disdain flowers, but are fond of drinking from wet brook-stones and mud-holes, from lures and rotting fruit.

The colouring and markings of *Eunica* are in nearly all its species so corresponding that even by long descriptions it would hardly have been possible to achieve full clearness. Therefore the illustrations for which the plate 100 had been destined, have been subsequently doubled, thus forming the plates 100 A and B — a designation otherwise unusual in the „Macrolepidoptera“; we thought this augmentation of figures to be necessary for the sake of a better orientation.

tatila. **E. tatila**. This species is at once recognizable by the small projection of the margin below the apex, making an impression as if just below the apex a bit of the top of the wing had been cut out. The butterfly is dark brown with a violet — in the ♀ more cyan-blue — reflection and 6—7 scattered white punctiform spots in the distal area of the forewing. **tatila** H. Schöff. (100 A a) is the smallest form lying before me, it comes from Cuba, has rather small, not very sharply demarcated white spots and rather dull blue reflection. — *coerulea*. **coerulea** Godm. and Salv. (100 A a) is the form reaching from Colombia to the north through Central America and Mexico as far as to the Southern United States (Florida). Larger, with bright reflection and large, pronounced, and often somewhat four-cornered white spots which in the ♀ are so large that they almost flow together. — *bellaria*. **bellaria** Fruhst., from Central Brazil, is said to be smaller than *coerulea*, of a duller violet-blue and with smaller white four-cornered spots. Espiritu-Santo. Brazilian specimens are not lying before me, the description, however, pretty well agrees with a specimen found at the „Chanchamayo“. — *tatilina*. **tatilina** Fruhst. finally, described together with a ? from the Upper Amazon, has on both surfaces more conspicuous and below more sharply demarcated white spots; on the under surface the apical and marginal areas contrast more sharply (aberrantly?) with the more blackish discus. — *tatila* is not only one of the most widely spread, but also one of the most common butterflies of the genus, though like most of the *Eunica*, appearing in great numbers only in certain years.

maja. **E. maja** F. (= *naeris* H.-Schöff.) (100 A a, b). It approximates the *tatila*, but the white spots on the forewings are covered with brown in the ♂ and the apex of the forewings is straightly clipped off, not cut out. In the ♀ the white spots are large and pure white, being, however, otherwise quite brown and having no blue reflection whatever. Seems to be very much distributed in Central Brazil, is missing, however, in the immediate surroundings of Rio.

concordia. **E. concordia** Hew. (100 A b). The upper surface of this species resembles a little that of *maja* by the spots on the forewings being covered with brown scales and thereby veiled. The blue reflection likewise has the violet tinge and even the shape of the wings is similar to that of *maja*, for the apex of the forewings is obliquely clipped off. But the lower surface is quite different, with very bright and beautiful markings, especially

*) These connections have even led to a union of *Eunica* and its homogeneous species with *Crenis* to a subgenus, called *Eunicinae*. Cf. Vol. XIII, p. 204.

the hindwing exhibits a beautiful double-eyespot before the apex and from the costa there runs a short anterior and a long posterior brown marginal spot to the interior of the wing. Above the blue reflection is especially bright in the distal half of the hindwings. From the Amazon, Iquitos, Tapajoz and so on.

E. malvina Bates (100 A c). Larger than the preceding, upper surface brown, without distinct reflection, the spots on the forewings only noticeable as large dull stains. Easily to be recognized by the under surface of the hindwings which is of a light grey marked with beautiful brown dentated lines and has before the apex a beautiful double-eyespot encircled by yellow, which is followed by 2 or 3 smaller ones towards the anal angle. Southern Central America and South America as far as Ecuador and the Amazon. The ♀ is rather similar to the ♂, the distal part of the forewings of a darker colour. Nowhere common. *malvina.*

E. brunnea Salv. (99 f). Pretty large, above similar to a *caralis* (100 B b), dark brown, apex and an indistinct oblique band beyond the cell silky lighter brown. Basal part of the wings with a dull violet reflection. Markings of the under surface of the hindwings: dark brown lines on a lighter brown ground. Before the apex a beautiful double-eyespot with a metallic blue nucleus, above the middle median vein a smaller, below it a larger ring-eye. In the subcostal area 2 comma-like streaks, one more at the closing of the cell, and about 2—3 mm before the margin a submarginal line. Bolivia and Peru. *brunnea.*

E. monima. There are 4 forms of butterflies, obviously nearly allied, but quite easily distinguishable. So far there are 3 names existing for them: *monima*, *modesta*, *pusilla*. As all the descriptions are so inexact that they are adaptable to all the 3 names, and as the only figure (*monima* with CRAMER) is, according to GODMAN and SALVIN, „everything else but good“, the names have now been assigned to one form, now to the other, and often even — at least partially — united (DYAR, GODMAN and SALVIN). I should like to distinguish now the following forms, the appearance of which is to be established by the figures of the four. **monima** Cr. (= myrto Godt.) (100 A b) I take to be the smaller form from Cuba, which was several times wrongly denominated *pusilla* (this latter form does not occur at all in Cuba). It is nearly entirely without any reflection, the spots more or less dull, and the same specimens as are found in Cuba, also fly in Florida, Mexico and Yucatan. — **habanae** form. nov. (100 A c) likewise flies in Cuba, but is probably a season-form of *monima*, for a whole series lies before me without transitions. It is always larger, the blue reflection considerably stronger and the under surface brighter though not differently marked. — **modesta** Bates (100 A b) may then be called the form flying from Guatemala to Colombia. The ♂♂ have a strong blue reflection, but are without spots on the upper surface; size like *monima*; ♀ below rather brightly marked. — **pusilla** Bates (100 A b) might be the tiny butterfly which in some districts where *modesta* is missing, seems to replace it. It has hardly the size of a *Lycaena icarus* and no reflection; by far the smallest *Eunica*. The figured specimen comes from the Colombian Province of St. Marta and may be especially small; but GODMAN and SALVIN mention *pusilla* from Panama which is not very distant, whereas the genuine *pusilla* is presumably absent in Cuba. *monima.* *habanae.* *modesta.* *pusilla.*

E. macris Godt. (100 A d) immediately recognizable by the dusty yellowish-grey colour of the upper surface. In typical *macris* the apex of the forewing is mostly black with a number of white spots, the hindwings have, in front of the irregularly dentated submarginal band, generally a row of 4—5 dark dots corresponding to the pupils of the ocelli on the very much white-mixed under surface of the hindwings. Occurs in Central and Southern Brazil (Bahia, Espiritu Santo); near Rio de Janeiro, however, the species does not occur. Further to the south it frequently reappears in Paraguay, the ♂ flying there in two forms: one not to be separated from the northern form from the Amazon valley having a dark white-spotted apex of the forewing and a uniformly dusty-grey ground-colour of the under surface of the hindwings; and a second one with a drab apex of the forewing, little contrasting to the discus, with dots partly overshadowed in brown; with this form we might connect the name ab. **aeschrion** Fruhst. (100 A d), but the ground-colour of the forewings is just as often lighter as darker than that of typical *macris*. This form nearly always lacks the row of dark dots on the upper surface of the hindwings. — **heraclitus** Poey (100 A d) is the Cuban form; it is coloured the most brightest of all, the forewings below the apex the most strongly angled, the dots on the hindwings large and distinct, the upper surface of the wings also often marked in the discus with dark dentate-lines. Between this and typical *macris* stands **phasis** Fldr. reaching from Colombia to the south of the Amazon; according to FELDER it has the more strongly angled margin of the forewings of the Cuban form, as well as its size, but the colouring of the Southern Brazilians. — On the whole, large series show that both the ground-colour and the grey or black apex vary a great deal in the same district and the denominations much rather signify aberrations than being names of special races. *macris.* *aeschrion.* *heraclitus.* *phasis.*

E. margarita Godt. (100 A d). At once noticeable by the pearl-grey ground-colour. The hindwings exhibit black marginal-chains, the forewings a white oblique band and in the black apical part three white little spots. A southern animal. Typical *margarita* are common in the most southern parts of Brazil, and the specimen described first seems to come from Porto-Alegre; in specimens from there, the apical band of the forewings is strangulated on the median. If one travels only some hours to the north, to São Leopoldo, one already finds preponderantly specimens in which the distal margin of the silver-grey basal area penetrates like an immense triangular tooth into the white band of the forewing, not only like a small point as shown in the figure. *margarita.*

Further to the interior, this distal projection of the apical area is absent; the apical area is distally not so distinctly delimited in black, the white band of the forewing much broader and more uniform. This form, which especially comes from Paraguay and was imported in great numbers several years ago, is the form figured in *churnea*. STAUDINGER's „Exotic Day-Butterflies“ and called **eburnea** (100 A d) by FRUHSTORFER. Specimens from Petropolis, from the Orgel Mountains, are again somewhat different from specimens from Paraguay; near Rio *ingens*. de Janeiro the species does not occur at all. Still further in the interior we then meet the gigantic form **ingens** *form. nov.* (100 A d) which lies before me from Bolivia, where it was taken at altitudes of 7 to 800 m. — Like most of the *Eunica*, *margarita* occurs only in certain years, is sometimes rare for a long period, till all of a sudden it appears in great numbers. The larva lives on *Sebastiania*, in its early stages it unites little pieces of leaves with faeces to a shelter, later on it is green with black head and white lateral stripe and rests with slightly raised front and back parts, the horns on the head stretched forward. The latter are rather long, slightly curved and furnished with single accessory spines. The lateral spines of the 4. to 10. ring are stunted to small points, the dorsal spines to small white warts. Pupa green, slender, with short points on the head and faint dorsal ridge; it is fastened to the upper surface of the leaves and raises itself towards the light.

cabira. **E. cabira** (100 A e f). A very variable animal; ♂ above very dark brownish-black with faint, dull blue reflection being only brighter in the sun. The ♀♀ are below and above quite similar to the ♂♂, but from behind the costal middle of the forewings, a very oblique narrow white band runs towards the margin above the anal angle, the posterior part of which band dissolves in spots and is sometimes strewn with small brown grains of dust, especially at the margins. Under surface reddish-brown, in the apex of the forewings mixed with whitish shades, and with a large doubly pupilled eye below the centre of the inner margin of the hindwings. In the same country there occur large and small, lighter and darker, below strongly and faintly marked specimens, probably according to the altitude. Described from Venezuela. — Peruvian specimens with little white on the under surface in the apex of the forewings, very deep-black discus of the forewings and very black-marked *gerwisa*. under surface of the hindwings are **gerwisa** *Fruhst.* (100 A f as *gerwisa*). They presumably differ from *tenebrosa* *Salv.* from Bolivia only by the latter having uniformly deep-black upper surface of the wings in the ♂ and also their under surface being often so darkened that one can hardly any more recognize the characteristic *ninetta*. markings — a big double-eyespot before the apex of the hindwings and an angled median line. — **ninetta** *Fruhst.* from Ecuador (not lying before me) has a blue reflection reaching further towards the margin on the upper side, less black marked under surface of the hindwings, which has a brighter violet reflection in the centre. — *tenebrosa*. Specimens that are, like **tenebrosa** *Salv.*, said to come also from Bolivia, are above a little bit lighter brown, *editha*. especially in the distal area; they have been called **editha** *Fruhst.*, but have neither below more white in the apex than the Peruvians, nor do they lack the violet hue of the under surface of the hindwings which has, *carias*. however, not so pronounced black markings as *gerwisa*. — **carias** *Hew.* (100 A f), a common butterfly in Colombia, is so nearly allied with *cabira* that it is hardly to be called a particular species. Here the forewings are above in the distal half overflowed with a bright golden-brown, their apex is below not white, but otherwise the under surface is similarly marked as in *cabira* from Venezuela. The butterflies are common, especially at mud-holes on the road, but local.

amelia. **E. amelia** *Cr.* (100 B a). This species reminds us a great deal of *orphise* (100 B a) on the under surface, but is immediately recognizable by the strangely shaped wings: the costal margin of the forewings is considerably shortened, therefore the margin of the wings does not run obliquely, but almost straight, and the inner margin is nearly as long as the costa, the hindwings are very large, too. Moreover the blue reflection is characteristic, being in the ♂ of a magnificent ultra-marine blue and covering the whole forewing up to the apical third which remains black and has white fringes; on the hindwing the blue reflection is in the basal part and the distal half remains black, contrary to the most *Eunica*. *amelia* belongs, according to FELDER, to the group of the smaller *amycla*. **amycla** *Godt.* which, however, distinguishes itself by the median and submedian being not only thickened, but expanded to a vesicle. The ♀♀ are spotted white and have a row of beautiful eyes on the under surface of the hindwings. The ♂ of *amelia* has a very conspicuous long tuft of hair before the inner margin of the hindwings.

taurione. **E. taurione** *Hbn.* (♀ = *marsolia* *Godt.*) resembles a small *amelia*, but the blue colouring occupies the whole basal two thirds of the forewings. The under surface is lighter and much less marked, especially the *fasula*. eye-markings are much less developed. Brazil and Amazon. — **fasula** *Fruhst.* are smaller ♀♀; darker, the little white spots on the forewings much smaller, the black margin more extended and the submarginal row of dots of the hindwings more pregnant. From the Amazon.

orphise. **E. orphise** *Cr.* (= *tryphosa* *Hbn.*, *castalia* *Hew.*) (100 B a). The ♂ is above black with a dull ultra-marine blue reflection in the proximal half of all the wings and grey fringes; without spots. In the ♀ the whole upper surface is of an iridescent steel-green, the forewing is white in the apical half, otherwise spotted black. The under surface pretty much resembles that of *amelia*, the hindwings are dark ruddle-red with a violet reflection; the markings are to be seen from the figure. The species seems not to be very rare and widely distributed over the northern part of South America, from Guiana to Peru. Specimens from Colombia are larger than those from the Upper Amazon, the blue reflection of the upper side reaches further to the margin, and the under surface is more variegated by violet-white and metallic bluish-grey pruina.

E. anna Cr. The forewings rather pointy, the basal half in the ♂ with a bright blue reflection and *anna*. in the ♂ dull-brown spots in the apical area, 3 of them pass by in a row in an oblique direction behind the cell, coming together before the apex and forming an oblique stain. Beneath the scheme of markings in the distal area of the hindwings resembles that of *brunnea* (99 f), but the streaks are thicker and in the proximal part there is a large dark four-cornered spot at the middle of the costa and a thick dark comma-like streak under it. Considerably smaller than *brunnea*, the eyes of the under surface of the hindwings, however, similar.

E. sophonisba Cr. (100 A d). ♂ black with magnificent blue band at the margin of the hindwings, which *sophonisba*. laps over on the anal part of the forewings; ♀ of a steel-green gloss with white oblique band of the forewings. Much more characteristic, however, is the under surface: light or metal-blue, with very complicated black markings; peculiar is an ochreous ray through the centre of the hindwings, which looks as if faded or like an artificial change of colour. In typical (Guiana-) specimens the blue of the hindwings runs in the ♂ from the margin proximally till over the centre and is therefore very broad; in the ♀ the white oblique band at its proximal margin above the lower cell-angle projects proximally in the shape of a bow, and in both the sexes the ground-colour of the under surface is quite light bluish-grey. — In *agele* form. nov. (100 A e) (= *sophonisba* *agele*. *Stgr.*), from the Upper Amazon (Humayta, Iquitos) and Colombia, the blue band of the hindwings of the ♂ occupies scarcely more than $\frac{1}{3}$ of the hindwing, the oblique band of the ♀ runs more pointy, the white protuberance at the cell-end is diminished, the ground-colour of the under surface especially in the ♂ much darker, bluish-green, the ray in the hindwings brown instead of yellow (*sophonisba*, as it says in the table, is a misprint).

E. chlorochroa Salv. (100 A e). On the under surface this species is almost exactly like *sophonisba*, but *chlorochroa*. above the distal half of the hindwings is not blue in the ♂, but steel-green, and this colour has a bright whitish-grey gloss in the sun. North-Eastern Peru.

E. mira Godm. and Salv. (100 A e). On the under surface of the hindwings the basal brown here likewise *mira*. continues, like a thick ray, through the bluish-green hindwing towards the margin, but does not quite reach it. The upper surface of the (unknown) ♂ is certainly black with a broad metallic margin of the hindwings; the ♀ has steel-green, black-spotted forewings with white subapical band, and dark hindwings. The species is only known to me from the figures in the Biologia Centrali-Americana, of which I give a copy. Panama.

E. norica Hew. (100 B a). Forewings under the apex geniculated, upper surface black, the hindwings *norica*. with a broad blue reflection in the distal area. The under surface with very bright violet-brown and brownish-black markings is at once to be noticed from the figure. The ♀ has on its brown upper surface a white oblique band which is widely discontinued behind the cell. Typical *norica* come from Chanchamayo in Peru; a smaller form with more reddish-hued under surface comes from Bolivia (Oroya), seems to be more of a mountainous form and was separated as *occia* Fruhst. (100 B a). The species is apparently common where it occurs. *occia*.

E. mygdonia Godt. (100 A c). This rather large *Eunica*, occurring in great numbers in some years *mygdonia*. near Rio de Janeiro and then frequently seen on the Corcovado, the Tijuca, at the foot of the Orgel Mountains, coming even into the gardens of Sa. Thereza, as far as Botafogo and into the Botanical Garden, in order to disappear almost entirely for years, has a unicolorous dark upper surface with 5 quite effaced little spots in the distal area of the forewing. It has a characteristic under surface which is easily seen from the figure and only varies in the tinge of the colouring. The ♀ has a white oblique band on the forewing and 2 little subapical spots. If GODMAN and SALVIN have correctly construed this species (against which there are many arguments), *anna* Btlr. and *Dru.* would coincide with it and the range would be very great reaching from Guatemala to Ecuador in the west and Southern Brazil in the east.

E. augusta Bat. (100 A f). ♂ above black, the basal half of the forewings with a magnificent bright *augusta*. metallic-blue reflection the intensity of which in sunshine reaches up to that of many a *Morpho*. Before the apex of the forewing a white oblique band which is double as broad in the ♀ as in the ♂, the upper surface of the wings being here, however, steel-green almost as far as the margin. The species is at once recognizable by the dentated margin of the wings which is otherwise only noticed in *caelina*, and by the bark-like marked under surface of the wings. Typical *augusta* originate from Central America and are not rare there. The figure in STAUDINGER'S Exotic Day-Butterflies is the narrow-banded Colombia-form going in the north as far as Costa Rica. The fringes are white-speckled. — *olympias* Fldr. (100 A f) has less blue on the forewing and the *olympias*. white oblique band is missing altogether in the ♂. The under surface is almost exactly as in *augusta*, but the hindwings are less deeply dentated and the fringes not so bright white-speckled. Likewise Colombia.

E. caelina Godt. (100 B b). Hindwings above and beneath almost exactly as in the preceding, also so *caelina*. deeply dentated; but the forewings more ultramarine blue than cyan-blue, upper surface with 3 separated white subapical spots, beneath there runs through the forewing from the costal centre towards the anal angle, a broad white oblique band strongly covered with brown in the ♂. Southern Brazil. — *alycia* Fruhst., founded *alycia*. upon 1 ♂ and which has not been lying before me, from the Upper Amazon, is said to be considerably larger, the forewings much lighter violet, the hindwings lighter brown, the white dots on the forewings more diffuse, under surface of hindwings with more white markings. Local and not common.

E. caresa Hew. (100 B b, d). Very nearly the largest species of the genus; the forewings below the *caresa*.

apex very prominent, in the ♂ the upper surface black, with dull violet reflection (except the marginal area) and with white fringes. ♀ darkbrown with oblique white band of the forewings and 2 or 3 subapical little spots between the band and apex. Beneath the hindwings are subdued speckled red-brown or brownish-black, overpowdered in white, with generally only suggested ring-chains or dentate-stripes, without sharply marked eyes and bands. Rather common, distributed from Colombia to Peru, but local, absent in vast districts, especially in the mountains. The confused markings of the under surface changes off enormously, either predominantly grey, or violet, brown or reddish tinged, and on the upper surface the band of the forewings of the ♀ may be in one specimen broader, in another narrower. — In Venezuelan specimens that were separated as *picea* *Fldr.*, as a rule, the white overpowdering of the under surface is thinner so that the markings of the rings and bands are still well noticeable below it.

empyrea. **E. empyrea** *H. Schöff.* (100 B b). Above very similar to the preceding. Smaller, without the white fringes, the violet reflection more confined upon the costal area of the forewings. Beneath the wings are much more unicolorous, the hindwings not so much over-powdered, the markings, consisting of dark transverse lines, more distinct. Brazil.

caralis. **E. caralis** *Hew.* (100 B b). Like the preceding, larger, the upper surface with hardly distinguishable reflection only to be seen distinctly in the sunshine; a quite slightly lighter colour of the brownish black ground-colour runs bow-shaped before the apex from the costa to the middle of the distal margin. The under surface is rather one-coloured, the hindwing with bands of a silky gloss, on the whole little marked. From Colombia to Peru. — **campana** *Fldr.* is above quite similar, the ♂ above in the proximal forewing-area a little brighter blue and the apex of the forewing on the under surface of a stronger violet-white; beyond the silky-glossy median band of the under surface of the hindwings, 4 eye-rings are somewhat more distinctly prominent than in Peruvian *caralis*; from Colombia. — **indigophana** *Fldr.* from Venezuela exhibits above still brighter blue reflection and is easily recognizable by the ♂ showing above as well as beneath a dark undulate-stripe before the margin.

ariba. — **ariba** *Fruhst.* Pretty large (length of forewings 35 mm), the apex still more curved. Wings above of a deep dark-blue with a faint violet hue excepting the submarginal area, the latter light brown, with a faint gloss and a row of blackish-brown, rudimentary, only partially coherent punctiform spots. Hindwings beneath greyish-violet, basal region greyish-reddish, slightly glossy with diffuse narrow median bands, otherwise without markings. Probably from the Amazon; described according to 1 ♂; unknown to me.

volumna. **E. volumna** *Godt.* A group of partly interosculating forms of butterflies. The most common of them is **tithonia** *Fldr.* from Bahia where the ♂♂ are in some years rather common. On the upper surface the ♂ shows only before the hindwing-margin a narrow iridescent stripe, the dull-blue iridescent ♀ a white oblique band which is downwards reduced in width. The under surface is distinguished by very variegated colouring, especially blue forewing-cell which is black only at and before the end. The typical *volumna* probably hardly differing from it, was presumed from the environs of Rio de Janeiro, but it is not likely that another *Eunica* occurs there beside *alcmena* and *mygdonia*. — **intricata** *Fruhst.* from Blumenau in St. Catharina has the iridescent band of the hindwings as thin as a thread, the hindwings are beneath grey, along the zig-zag bands with a greenish hue. The median and submarginal transverse lines are sharply and several times broken. Between them a doubly-pupilled upper eyespot and a double lower eyespot. — **celma** *Hew.* (100 B c) is above almost entirely like *tithonia*, but the forewings have below black ground-colour with very metallic blue embedding, and the hindwings are very much lighter only before the distal margin; the blue ante-marginal stripe of the upper surface of the hindwings is quite narrow in the ♂; Amazon. — The name of **celmina** *Fruhst.* was founded upon a single ♂ from Scapi in Bolivia which shows above a light greyish-blue submarginal band of the hindwings and beneath smaller ocelli.

venusia. **E. venusia** *Fldr.* (100 B c). The ♀ quite similar to the preceding, but the ♂ distinguished by a very broad, intensely radiant blue-iridescent spot becoming visible before the margin of the hindwing in certain light; Colombia. — **persephone** *Fldr.* likewise exhibits this radiant spot of the ♂, but upon it there are black spots, and on the under surface the eyes of the hindwings and the discal spots of the forewings are larger; likewise from Colombia.

araucana. **E. araucana** *Fldr.* This form entirely resembles the figured **excelsa** *Salv. and Godm.* (100 B c, d), but *excelsa.* the under surface is still more unicolorous and duller, and the blue reflection of the ♂ duller, too. The latter is in *excelsa* of almost just as magnificent brightness as in *venusia*, from which *excelsa*, however, immediately distinguishes itself by the margin of the forewings projecting less angled below the apex and by the much less variegated under surface which, on the forewing, lacks the beautiful blue distinguishing the *volumna*-, *celma*- and *venusia*-group; the *excelsa*-♀, however, has in the forewing-discus on the upper surface a blue reflection (being, individually, developed very differently), in which we notice a white oblique band consisting of 3 separated spots. *excelsa* occurs on the Chiriqui in Panama and in scarcely differing specimens in Colombia where *aspasia.* FASSL took them at the Rio-Songo. — **aspasia** *Fldr.* with above very brightly iridescent discus of the forewing, from Ecuador, is larger and forms a right transition to the following form *E. cinara*.

cinara. **E. cinara** *Hew.* (100 B d). Very approximate to *aspasia* and *excelsa*, but differing from *excelsa* by the ♂ exhibiting, before the margin of the hindwings, not a bright, but quite dull blue reflection; the light spots on the under surface of the forewings are not pure white like in *excelsa*, but tarnished greyish-brown, and in the ♀

the forewings have before the apical third not three separated white spots, but a broad white oblique band proximally bordered with blue reflection. Colombia, Amazon. — The name *oreandra Fruhst.* denotes Peruvian specimens in which the blue reflection is more brightly and decoratively prominent than in the northern affinities. *oreandra.*

E. clytia Hew. (100 B e). Compared with the preceding, plainly coloured and with hardly any decorations. ♂ above dark-brown with uniform violet reflection, ♀ brown with 5 white spots standing in 2 oblique rows. Under surface of hindwings plain ashy grey, the dentate-lines and eye-rings formed of plain dark streaks. Peru, Rio Madeira and Upper Amazon. *clytia.*

E. veronica Bates (100 B e) likewise from the Amazon, has the same size and about the same colours as *clytia*, but the markings of the hindwings being beneath unicolorous yellowish ash-grey are still more reduced. *veronica.*

E. violetta Stgr. (100 B d). As the description of this species by the author refers to the figure, specimens corresponding exactly to it are, however, not lying before me, I bring a copy of STAUDINGER's figure which is said to be painted according to 2 not quite sound ♂♂ and, therefore, may be inexact. The ♀ is not described. Pebas. — Maybe it is only a form of *viola Bates* also originating from Pebas, which would thus form the type of the name; although the latter has a more reddish-coloured under surface, and red markings, yet the design of both is the same. On the upper surface of *viola* the small light spots in the apical area are covered up with dark, or missing altogether, and the bluish-violet reflection is less; these differences also occur in *clytia* and *veronica* and are only individual there. Teffé, Pebas. *violetta.*

E. eurota. ♂ above black with blue reflection of magnificent splendour, extending in a broad band along the costal margin of the forewings and reaching, in the shape of a glossy oval, proximally convex, from the margin of the hindwings as far as almost to the cell-end. The ♀ is dark-brown with a white oblique band of the forewing and often white preapical spots in addition. The under surface of the hindwings is comparatively very plainly marked: a submarginal cucullated line, a median line turning almost rectangularly round the cell, between both above one double eye-ring and below it 2 or 3 single ones. The range is very great so that numerous sub-forms have been distinguished which, however, were mixed up several times. — The most southern is *euphemia Godt.* (= *dolores Prittw.*, *alcmena Boenningh.*) from Southern Brazil, which chiefly distinguishes itself by the very dark, almost black under surface of the hindwings. Espiritu Santo and Rio de Janeiro, in the alpine districts. — *eurota Cr.* (100 B e) from Surinam to Colombia, is lighter and somewhat smaller, but the blue iridescent stripes of the upper surface are broader and more lustrous, especially those on the hindwing. — *flora Fldr.* is the race occurring from the Upper Amazon as far as up to Peru. The blue of the hindwings in the ♂ does not reach quite to the margin, and in the ♀ there are yet 2 small subapical spots behind the white oblique band. The animals vary exceedingly, and from the Chanchamayo there are lighter and darker specimens lying before me, more or less blue decorated; those with a lighter under surface have been branched off as a form of the Upper Amazon, *myrthis Fruhst.* — *theophania Fruhst.* is smaller than *flora*, in the ♂ the bands are more subdued, more violet, those on the hindwing broader. Under surface reddish instead of brown or grey with light spots in the distal area of the forewing. A ♀ is mentioned having the white band of the forewings dissolved into 3 spots what may be constant for this form the habitat of which is on the Middle Amazon (Manaos). *euphemia.*
eurota.
flora.
myrthis.
theophania.

E. alcmena. This magnificent species has in the ♂ above a blue costal-marginal stripe, which is sometimes continued even at the distal margin, and a blue marginal band of the hindwings; the ♀ brown with a white oblique band of the forewing. Characteristic is the under surface. Here there is, near the base in the cell and above it, a velvet-brown spot; near the costal margin, behind the middle of the wings, a large eye-spot, encircled by yellow and with two pupils; (proximally) before this 2 arch-like stripes touching each other, the lower one lying on the transverse vein; from this lower one a brown shadowy outline runs rectangularly to the inner margin and beyond this line there is an eye-spot, to which sometimes another small accessory eye-spot adheres. Before the hindwing-margin a dark shadowy outline. Furthermore the *alcmena*-♂ is distinguished by the place, where the first median vein branches off from the median principal vein (near the base of the forewing), showing also on the under surface a blue iridescent spot. *alcmena Dbl.* and *Hew.* (100 B e, f) flies from Mexico to Panama. Here the blue stripe of the costal margin is at the cell-end somewhat overpowdered by the dark ground-colour and thereby strangulated or even interrupted; it ends in a thick wedge before the apex without extending any further along the margin. — *amata Druce* from Costa Rica resembles in the male sex pretty much the typical *alcmena*, the ♀ I do not know. In the ♂♂ — certainly also in the ♀ — the eye-rings on the under surface are (according to DRUCE) smaller, above the blue is considerably more abundant and more violet. — *pomona Fldr.* (100 B f) which may be a species of its own (there are, however, transitions of it to *alcmena* lying before me, from the Chiriqui), shows the blue costal-marginal stripe bent round before the apex and following the margin to the anal angle, but sometimes with attenuations or slight interruptions behind the cell. Costa Rica to Colombia and Venezuela, varying in almost every locality. — Such a local form is *pompata Fruhst.* with more blue than violet stripes; the under surface darker, all the ocelli of the hindwings smaller, surrounded by a softer yellow, the dark submarginal band more prominent. Colombia. — *irma Fruhst.* (100 B f) has decidedly the loveliest ♂♂ (♀ not at hand); a band of magnificent blue lustre in the sunshine runs from the base of the forewings as far as before the apex, where it makes a broad bend going as far as into the anal angle. The band of the hindwing is broader, but somewhat shorter, otherwise like in *alcmena*. Under surface *alcmena.*
amata.
pomona.
pompata.
irma.

like *pomona* (100 B f), but the black lines and the borders of the eye-spots thicker and darker. Peru. — *alcmena* and its forms are mostly very common in their range.

bechina. **E. bechina** Hew. (99 f). Under surface quite similar to that of *clytia* and *veronica*, but the upper surface differing by the presence of white punctiform spots in the apical area of the male forewings. Typical *bechina* come from the Upper Amazon. Wings above quite darkbrown with violet-blue iridescent centre; forewings with 5 light spots in the apical area, 4 of which are white, the middle spot, however, overshadowed dark. — *evelide* Bates is beneath a little darker and more strongly black marked and the lower row of the spots in the apical area is often effaced; from Colombia. — Likewise originating from Colombia (Rio San Juan), there are specimens in which also only the 2 apical spots are faintly suggested, but besides, the blue reflection on the upper surface is so much reduced that it hardly reaches as far as the middle of the wings; this is *emmelina* Stgr. — As contrasted with this, *medellina* Fruhst. is distinguished by especially intensive light and vast blue colouring of the upper surface of the wings and 2 very large white subapical dots; the middle dot of the discal row is absent; Colombia. — *chorienes* Fruhst. finally, from Southern Brazil, has again more subdued reflection and all the 3 dots of the discal row are absent. — *bechina* though being a widely distributed species, is not common.

careta. **E. careta** Hew. (100 B f) entirely resembles on the upper surface *bechina* and also varies like this. On the non-iridescent upper surface there are generally 2 subapical punctiform spots and one before the middle of the margin, and on the under surface there is in the centre of the hindwing-costa a darkbrown, three-cornered spot behind a loam-yellow place. But the spots on the forewings may be augmented, also all or partially covered with brown (in typical specimens only the spot before the middle of the margin) and on the under surface the hindwing-costa may have 2 or also 3 dark spots, the otherwise loam-yellow spot of the costal margin may be absent, or grey, whitish, or with dark filling etc. Described from the Amazon, but probably widely distributed in the northern part of South America, although often occurring in rare specimens.

sydonia. **E. sydonia** Godt. from „Brazil“ is not lying before me, but is described with denticulated wings, above brownish-black, without spots, of a violet gloss at the base; beneath with 4 greenish dots. Reflection of the hindwings of less extension. Under surface of the forewings dark grey with one dot and 2 oblique bands of blackish colour; distally there is opposite the faintly violet margin a curved transversal row of 4 greenish dots. Under surface of the hindwings violet-brown, with some dark curved and little-prominent lines, and with 4 greenish dots that approach each other by twos. The ground-colour of all the wings is faintly pierced by whitish tints. The abdomen has the colour of the wings. Antennae brown, with grey ringlets and yellowish point of the clavola. — In *poppaeana* Fruhst. from Surinam the violet touch on the hindwing is much more expanded, the animal larger, the under surface of the hindwings densely besprinkled with grey.

alpais. **E. alpais** Godt. from „Brazil“ is not at hand. The description runs thus; wings denticulated, brownish-black. Forewings suffused with bluish-violet, marked with 5 white spots; from the margin of the hindwings there extends a blackish undulated line. Under surface of the forewings very much like the upper surface, but towards the base with a single whitish crescent and the margin is of a violet grey with 6 blackish dots, the 4 posterior ones of which are arranged in a bent transversal line. Under surface of the hindwings violet-grey with 2 spots and hereafter 2 curved lines of a chestnut-brown colour. Between these 2 lines there are 3 black eye-spots with white pupil and yellowish iris. The front eye-spot is separated from the others and has 2 pupils; the second eye-spot is of half the size of the anal-eye-spot which it almost touches.

elegans. **E. elegans** Salv. (100 B f). This butterfly which is not rare in Peru, can at once be recognized by the shape of the wings. The distal margin of the forewings is bulged out here, while in the similar *Eunica*-species it is concave, gnawed out or straight at most. The upper surface is brownish-black, the proximal half of the wings of a violet-blue reflection; the under surface silky yellowish-grey with black discus of the forewings and numerous dark lines on the hindwings, formed from little bows. ♀ with above and beneath similar white oblique band of the forewings.

H.-Group: **Catagrammidi.**

Very normally and uniformly shaped butterflies, above black with metallic bands, on the under surface mostly brilliant, with variegated and changeable markings. The spines of the larvae somewhat reduced; habitat nearly in the tropics many very rare.

42. Genus: **Callithea** Bsd.

This genus numbers about a dozen of species distributed from Colombia to the Amazon; in the latter district most of the species occur. The Callithea are medium-sized, on both surfaces of the wings magnificently coloured and with some, however larger, *Agrias*-species, they exhibit an interesting example of congruence in shape, which may, however, not be taken to be a symptom of mimicry, as the species of both the genera are not considered as „patented“ species.

The exterior of the Callithea is so characteristic that it is impossible to mix them up with other genera and that the mentioned similar *Agrias*-species are distinguished by their greater size. The Callithea have

curiously buttoned antennae, the palps are densely covered with scales and hair, their last joint is small and pointed, the eyes are naked, the hindwings have a double-furciform precostal.

The larva of *Call. sapphira* was observed by OTTO MICHAEL near Santarem on the Lower Amazon, but unfortunately he did not give any further details; he merely states that the male larvae are of a beautiful blue colouring, while the female larvae are more greenish or orange coloured; they have sharp spines containing a caustic or venomous substance and live in single specimens on a bean-like creeper. The time of flight lasts but a short time; they mostly stay in the woods, but also fly single into the boroughs where they have been found after the night's rest on the walls of houses.

PAUL HAHNEL reports about the intellectual powers of the Callitheae that a *markii* (*hewitsoni*) after having been several times chased up, at last took refuge on a small trunk where it, however, hardly rested and in the very same moment changed its mind and immediately went some inches higher up in order to hide itself on the under surface of a leaf hanging down above it — it probably imagined to be quite safe there; the observer was really astonished at this clear thinking power of the animal so hardly pressed upon by its persistent pursuer. The Callitheae (like many butterflies with an intensive blue) have, according to the same observer, a scent very similar to that of vanilla.

A. ♂ on the upper surface of the hindwings in the discocellular without shaggy hair.

C. sapphira *Hbn.* (99 c) from the Lower Amazon (Santarem) exhibit, as is to be seen from the figures, *sapphira*, a conspicuous sexual difference. The wonderful sapphire blue of the ♂ is not equalled by any other *Callithea*-species and the ♀ is on account of a broad ochre-yellow band of the forewings a most remarkable appearance. — The larva has been described above.

C. hewitsoni *Stgr.* (99 c) from Colombia and from the Upper Amazon differs from the following *hewitsoni*, *markii* (99 f) by a larger yellowish-red basal area of the upper surface of the forewings; the colouring of this part of the wings changes off rather considerably, since all shades from yellowish-red to ochre-yellow are found in it. This area has also on the under surface of the forewings the same extension, its colouring, however, does not change off so very much and is generally ochre-yellow.

C. markii *Hew.* (= *wallacei* *Stgr.*) (99 f) from the Upper Amazon has, with the exception of the *markii*, inner margin, totally blue, glossy hindwings and a broad blue-shining distal band of the forewings. The ♀ has a rather broad verdigris band on the upper surface of the forewings.

C. batesii *Hew.* (99 f) from the Upper Amazon. ♂ similar to the ♀ of *markii*, but it has much less blue *batesii*, gloss and is of orange-red colour on the basal part of the hindwings. On the under surface, which is much more marked in black, the basal third of the hindwings is orange-yellow, too.

C. buckleyi *Hew.* (99 e) from Ecuador differs from *staudingeri* *subsp. nov.* (= *buckleyi* *Stgr.*) from *buckleyi*, the Upper Amazon (São Paulo de Olivença and Jurimaguas) by its somewhat smaller size, broader green margins of the upper surface, and beneath by less black colouring on the forewings and reduced black markings also on the hindwings, especially conspicuous on the band bordering on the ochre-yellow basal part. *staudingeri*.

C. degandii *Hew.* (99 f not *degandei*) from the Upper Amazon has a bluish-black upper surface with *degandii*, very broad verdigris margins. According to HEWITSONS figure the whole middle part of the upper surface of the wings is of a deep blue gloss, which is seen in the ♀ only exceptionally.

C. bartletti *Godm.* and *Salv.* from the Lower Ucayali and Rio Napo is described as follows: ♂ above deep *bartletti*, purple (blue), central area of the forewings mostly black. Apex of forewings (broad) and distal margin of the fore- and hindwings metallic green. Beneath: basal third of the forewings and basal half of the hindwings ochre-yellow; rest of all the wings green; at the cell-end and at the first median vein of the forewings blackish; 1 black spot between the 1. and 2. median vein and 3 others run parallel to the distal margin; the hindwings have 4 bands of black spots on the discal half (? distal half), placed parallel to the distal margin. The apex of the hindwings is more rounded in the ♀ than in the ♂; base of the wings greenish-black instead of purple (blue); the green margin of all the wings broader. — We cannot perceive from this description whether *bartletti* is a form of *degandii* or *adamsi*. Presumably the latter is also a form of *degandii*.

C. adamsi *Lathy* (99 e) from Peru (Perèné, 4000 feet) is above much darker than *degandii* and has *adamsi*, narrower verdigris margins, the blue gloss is dark violet, the centre of the wings without gloss. On the under surface the orange-yellow basal part is darker, very much reduced and, on the forewings, confined to a basal spot, the black markings are different, too. — **frigga** *subsp. nov.* from Peru (Cuzco) is above hardly differing *frigga*, from *adamsi*, but shows beneath the yellow basal area on the hindwings extended as in *degandii*, on the forewings, however, more extended, the black markings are also much more developed.

srnkai. **C. srnkai** *Horr.* (99 e) from the Upper Amazon is very similar to *degandii*, but has a broader green margin and a wonderful sapphire-blue gloss of the upper surface. On the under surface of the forewings the black markings are greatly reduced.

salvini. **C. salvini** *Stgr.* from Iquitos is also similar to *degandii* (99 f), but the upper surface is of nearly the same beautiful blue gloss as in *srnkai* (99 e) and has just the same metal-green distal margins as the latter, but the apex of the forewings itself is also of this colour. Beneath the basal part of all the wings is orange-red, the under surface is otherwise similarly marked as in *degandii*, the inner margin of the forewings, however, is broad and deep black.

whitelyi. **C. whitelyi** *Salv.* (99 e) from Peru is above very similar to *depuiseti* (99 d), but it lacks the shaggy hair in the discocellular of the hindwings, the whole hindwing except the greyish-green margin, therefore, showing blue gloss. On the under surface of the forewings are 5 submarginal black spots decreasing in size from behind to the front; the red colouring at the base of the wings is lighter than in *depuiseti*, also somewhat broadened, especially on the forewings, and the inner black line is divided into large black spots.

lugens. **C. lugens** *Drc.* from Peru (Cuzco) is described thus: ♂ head, antennae, neck, shoulder-covers, thorax and abdomen black. Forewing very similar to that of *C. optima* (99 d), but much more lustrous blue, the black apical margin much broader; hindwing much more lustrous blue, than in *optima*, the blue colouring proceeding exactly from the base as in *whitelyi* (99 e); the greenish distal margin is much broader, too. Under surface resembles that of *C. optima* (99 d), but without the black lines and with very much less red at the base of the hindwings, but with much more red than in *leprieuri* (99 d); a large round red spot at the cell-end; the forewings have a submarginal row of 5 rather large black spots. — Although the author compares this species with 2 species belonging to 2 different groups of species, yet the remark that the blue of the hindwings begins at the base of the wings as in *whitelyi*, shows evidently that *lugens* belongs into the group A and the nearer affinity of *whitelyi*.

B. ♂ on the upper surface of the hindwings in the discocellular with shaggy hair.

leprieuri. With **C. leprieuri** *Feisth.* (99 d) from Surinam and the Lower Amazon, commences that series of species in which the ♂ shows long black shaggy hair of the discocellular on the upper surface of the hindwings; for these species *C. FELDER* has established the genus *Cyane* which is distinguished especially by shorter antennae and longer, stronger palps. *C. leprieuri* shows a dull blue gloss on the upper surface, being intensified on the basal part of the forewings, in the ♀, however, only indicated.

depuiseti. **C. depuiseti** *Fldr.* (99 d) from Peru resembles *leprieuri*, but has a more intense blue gloss of the upper surface, which extends also to the hindwings. The greyish-green marginal band of the upper surface is much broader and lighter than in *leprieuri*, the under surface is quite similar as in the latter, the forewings, however, showing less black markings. — Rather different is the Bolivian form which we call **eudia** *form. nov.* It has much broader, also lighter greyish-green margins and a more intense blue gloss of the upper surface. On the under surface of the hindwings the golden gloss is confined to the median band in which the black spots are placed, these spots are somewhat larger, the distal (submarginal) black line being broader and also the red basal spots somewhat more extensive.

philotima. **C. philotima** *Rbl.* „♂. Nearly allied to *C. depuiseti* *Fldr.*, *optima* *Btlr.* and *whitelyi* *Salb.* Differing from the former two by a much broader, pale metallic-blue margin of all the wings. The black marginal line is much finer than in *depuiseti*, also the apical part of the forewings is less extensively black. The fringes are snow-white along the margin of all the wings. The jet-black long scent-hair in the disc of the ♂-hindwings as in *depuiseti*. — The under surface forms by the disposition of the red basal spots an intermedium between *depuiseti* and *optima*. The forewings exhibit a short blood-red basal streak of the costal margin and only 1 black subapical dot in cellule 5. At the base of the hindwings there are 3 blood-red long spots, one towards the costal margin and one towards the inner margin, and one long tooth-like spot in the upper half of the discocellular, the sharp point of which is situated about in half the length of the discocellular. Also at the black transverse vein of the discocellular there are a few red scales. The black macular markings quite similar to that of *depuiseti*, which entirely lacks the long red spot in the discocellular, whereas *optima* shows the whole basal area of the hindwings (except a bluish-black spot in cellule 8) of a miniate colour. *C. whitelyi* has only at the base of the discocellular of the hindwings red spots; the first transverse line of it is broken up into short longitudinal spots. 1 ♂ from the Chanchamayo.“

optima. **C. optima** *Btlr.* (99 d) from Peru and Ecuador is somewhat smaller and has more pointed forewings than *depuiseti*, but much more intensive blue gloss and narrower greyish-green margins of the upper surface. Nearly the basal half of the under surface of the hindwings is miniate, the rest of the markings, however, very similar to those of *leprieuri*. — **eminens** *form. nov.* (99 e) from Southern Peru (Upper Madre de Dios, 500—1200 m) is remarkably different from *optima*, but nevertheless probably a local form of this species. It has been discovered by Mr. A. H. FASSL. The greyish-green margin is on all the wings considerably broader, about three times as broad as in *optima*, therefore the area of the blue gloss is considerably diminished, the black spot in the centre of the forewings, which in *optima* is very conspicuous in most any direction

of the light, is in *eminens* very feebly developed and, when looking at the animal laterally, not visible at all. The red colouring on the basal area of the under surface of the hindwings is very much reduced, but it occupies the whole discocellular and outside the cellule there are a little spot at the median and 1 stripe at the subcostal greyish-green; the black spots of the hindwings are increased in size and especially the spots forming a submarginal band are considerably broader than in *optima*.

C. freyja *spec. nov.* (99 e misprinted as *freyia*) from Peru (Chanchamayo) resembles *optima* as regards *freyja*. the shape of its wings, but the distal margin of forewings appears still more distally bent. The verdigris margins are much broader, more sharply confined and do not change into the blue-shining colouring of the wing-centre. The red basal colouring of the under surface is similar as in the following *fassli*, but still less, so that only a little more than $\frac{1}{4}$ of the discocellular is occupied by it; it is bordered in black; the basal red dusting is much less than in the affined species; the black band margining the red area in *optima* is, in *freyja*, broken up into small, partly minute dots, and the two distal rows likewise consist but of small black spots and the spots of the middle row are also smaller; on the forewings there are 4 very little and uniform large subapical spots (dots).

C. fassli *spec. nov.* (99 d) from the Colonia Florencia on the Rio Putumayo (frontier between Co- *fassli*. lombia and Ecuador) resembles above *optima* a great deal, but has more pointy forewings and by far not so magnificent blue gloss as *optima*. On the under surface there are in the apex of the forewings not 4, but only 3 and smaller black spots, the hindwings have more golden splendour, the black spots are smaller and the red colouring on the basal part which, according to O. STAUDINGER, occupies in *optima* at least the discocellular, extends in *fassli* only to the anterior half of the discocellular and is all around, partly broad, bordered in black; furthermore the red colouring which is, withal, very much darkened by interspersed black scales, occurs in a little spot at the costal margin, 2 little stripes at the inner margin of the hindwings and in a basal spot on the forewings; all these spots are, like the spot in the discocellular of the hindwings, (partly broad) bordered in black. — Mr. A. H. FASSL reports that he has seen yet 6 entirely equal specimens of this species in a South American museum.

43. Genus: **Catagramma** Bsd.

Most of the species of this genus spread all over tropical America are medium-sized, although some larger species are met, too; a great part is homed in the Amazon valley and the side-valleys of it. They are easily recognizable by their exterior to be seen from the figures and can hardly be mixed up with specimens of the very nearly allied genera *Callicore* and *Perisama*. As to the structure of the body, *Catagramma* differs from *Callicore* by the branching-off of a subcostal vein before the cell-end, and from *Perisama* by the naked eyes; the ♂♂ have uncommonly thickened forelegs.

W. MÜLLER states the following about the early stages of *C. pygas*: the larva lives on *Allophylus petiolatus* Radlk. The eggs are deposited on the under surface or on the tips of the upper surface of the leaves. Instead of the spines, the larva has only enlarged little warts on each of which there are 2 bristles; the horns on the head are comparatively still larger than in *Callicore*, for they attain a length of 1 cm; the thickening in the middle of the body takes place only shortly before changing into a pupa, before that the larva is cylindrical. The pupa is similar to that of *Callicore meridionalis*. It seems very difficult to rear up the larva in closed rooms.

C. brome Bsd. (101 B b) from Colombia is one of the smaller species with yellow bands. It is charac- *brome*. teristic for its broad almost oviform yellow bands of the forewings.

C. atacama Hew. (101 B c) from Chiriqui, Colombia and Peru is easily distinguished from the similar *atacama*. species by the under surface.

C. faustina Bates (101 B c) from Panama has, like *atacama*, longitudinal stripes on the under sur- *faustina*. face of the hindwings, but is nevertheless considerably different, also above.

C. denina Hew. (101 B b) from Colombia is similar to *atacama*, but smaller and beneath with diffe- *denina*. rent markings.

C. mionina Hew. (101 B b) from Colombia, chiefly differs from the preceding species by the under *mionina*. surface.

C. tolima Hew. (101 B b) from Peru and Northern Brazil has a broader yellow band of the fore- *tolima*. wings than *mionina* and a large spot of blue reflection on the hindwings.

C. guatemalena Bates (101 B c) from Guatemala resembles the preceding, but has a considerably *guatemala-* lighter under surface. *lena*.

C. lyca Dbl. and Hew. (101 B c), from Mexico to Colombia, has very narrow orange band of the fore- *lyca*.

wings. Beneath it resembles *mionina* (101 B c), from which it differs, however, not only by the shape and position of the yellow band of the forewings, but also by the distal light band not being yellow but glossy blue.

mena. **C. mena** *Stgr.* from the Chanchamayo (Peru) is but little larger than *mionina*, but has a larger broad ochre-yellow band of the forewings which is placed more in the length of the wings and which starts close at the costal margin and terminates shortly before the distal margin near the angle; the blue spot on the hindwings is much larger. On the under surface of the hindwings the 5 blue spots are larger and prolonged.

discoidalis. **C. discoidalis** *Guen.* The translated description runs thus: Small. Oval, broad orange-coloured spot. Oblong blue spot of the hindwings beginning from the base. Under surface with only 4 not pupilled dots before the central band and 3 at the anal angle. Broad yellow lines, the first posteriorly united with the 2nd and 3rd; the latter rises again close on the yonder side of the first dot. Colombia.

pacifica. **C. pacifica** *Bates* (= *bugaba* *Stgr.*) (101 B d) from Central America is the smallest species of this genus. The steel-blue reflection of the hindwings is of varying extension, and beneath the black markings vary a great deal.

aegina. **C. aegina** *Fldr.* (101 B c) from Ecuador, Colombia and Bolivia has broader yellow bands, but placed in the same way as in *lyca*. The ♀ has a more compact shape and the blue spot on the hindwings is smaller and divided by the black veins. — **C. salamis** *Fldr.* is the form from Rio Negro and from Peru with a broader yellow band and diminished blue spot of the hindwings.

dulima. **C. dulima** *Guen.* This species has been described in the following way: very nearly allied to *zelphanta* from which it differs only by the following: Subapical spot with white and violet margins on glossy ground. Hindwings beneath decidedly light lilac with very light siskin-yellow base and central part, the latter strongly mixed with lilac. Central spots smaller, more distant from each other and with finer black margins. The black subterminal line is undulate, or rather consisting of crescents and encircles metallic sky-blue scales. Peru. — The author lays stress upon the possibility of the coincidence of *dulima* with *zelphanta* or *hystaspes*.

zelphanta. With **C. zelphanta** *Hew.* (101 B d) from the Upper Amazon we commence the series of redbanded species. In this species is, beside the greatest part of the hindwings, also the basal part of the forewings of a faint blue gloss.

hystaspes. **C. hystaspes** *Drury* (= *lyrophila* *Hbn.*, *hesperia* *Perty*) (101 B d) from Southern Brazil and Paraguay is a neat and frequent species. Red band of the forewings narrow, glossy spot of the hindwings large. The ♀ does not differ from the ♂.

heraclitus. **C. heraclitus** *F.* from Brazil is denoted by A. G. BUTLER as nearly allied to *hystaspes* (= *hyrophile*), without mentioning any difference.

hystaptes. **C. hystaptes** *F.*, coming as stated from Brazil and Bolivia, has been described as follows. „Wings blackish-brown, with blue gloss, hindwings beneath yellow, with black ring-lines and 3 blue dots.“ Presumably the animal is an aberration of *hystaspes*, or the author may have had a normal *hystaspes* before him and may have forgotten to mention the red band of the forewings in the description.

kolyma. **C. kolyma** *Hew.* (101 B d, e) and **C. pasithea** *Hew.* (101 B e) from the Upper Amazon look very differently above, but are still forms of only one species, since all the transitions are noticed.

felderi. **C. felderi** *Hew.* from the Upper Amazon differs from **C. cajetani** *Guen.* (= *audofleda* *Thieme*) (101 B c) from Peru by the yellow band of the forewings and a greater extension of the blue gloss in the hindwing.

codomannus. **C. codomannus** is divided into a greater number of local — or temporal forms. **C. codomannus** *F.* (= *sinamara* *Hew.*) (101 B e, f) from Brazil lies before us from Eastern Colombia (Medina, 500 m), from the *astarte*. Collection FASSL. This form hardly differs above from **C. astarte** *Cr.* (101 B f) from Bolivia, but the red bands of the under surface of the forewings are broader in *astarte*. The ♀ has a brick-red basal half of the forewings. — The form **C. antillena** *Kaye* (101 B e) from Trinidad is somewhat smaller, has narrower red bands of the forewings and a broader red band of the hindwings. — **C. militaris** *Stgr.* from Venezuela has a violet reflection of the upper surface, the apical spot is absent and the red band of the hindwings is reduced to a little *miles*. stripe at the costal margin. — **C. miles** *Bates* from the Upper Amazon has very much enlarged red bands of the upper surface which are sometimes confluent on the forewings. — **C. selima** *Guen.* (= *cynosura* *Hew.* pt.) from Minas-Geraes is a smaller form showing only narrow red bands of the upper surface and preponderantly *stratiotes*. yellow colouring of the under-surface of the hindwings. — **C. stratiotes** *Fldr.* is the form from Ecuador.

excelsior. **C. excelsior** *Hew.* (101 B f) from the Upper Amazon has a magnificent deep-blue reflection and a yellow transverse band of the forewings. The ♀ has only the shining blue spot at the inner angle of the hindwings, but no reflection. — **C. excelsissima** *Stgr.* (101 B f) from the Upper Amazon (São Paulo de Olivença) has a glossy blue upper surface with a red band of the forewings which is reduced in **C. michaeli** *Stgr.* from Manicoré *pastazza*. on the Rio Madeira to a short basal stripe. — **C. pastazza** *Stgr.* (101 B f) from Ecuador and Peru (Chanchamayo)

is very similar to *excelsior*, but has not the blue reflection, but only the lustrous blue spot at the inner angle of the hindwings. — On the Chanchamayo there occur, however, also specimens similar to *pastazza*, but with blue reflection: *speciosa* form. nov. — *excelsa* Stgr. from Ecuador differs from *excelsior* by its reduced yellow band of the forewings, leaving the basal part of the wings free, and by diminished blue gloss. — The under surface of the hindwings shows that all the preceding forms belong to one species. *speciosa.*
excelsa.

C. cynosura Dbl. and Hew. (101 B g) from the Upper Amazon, Peru and Bolivia strongly differs from *cynosura*, the *codomannus*- and *excelsior*-forms by the under surface of the hindwings which have, at the costal margin, a large band-like, ochre-yellow spot strikingly contrasting with the other light-yellow ground-colouring, and therefore the subbasal black band does not go as far as the costal margin, but ends already at the costal. The submarginal blue spots on the hindwings are always sharply separated from each other, also in the ♀♀.

C. peristera Hew. (101 B h) from Colombia, Peru and Bolivia has almost no sexual difference; the *peristera* ♀ differs only by small blue spots at the inner angle of the hindwings.

C. eunomia from Colombia, Ecuador and Bolivia in both sexes occurs in 2 forms: *eunomia* Hew. *eunomia*, with an ochre-yellow basal half of the forewings, and *incarnata* Stgr. (101 B h) with vermilion colouring of this *incarnata* part of the wings. The ♀ shows less extension of the blue-shining spot at the inner angle of the hindwings.

From **C. texa** Hew. (101 B g) from Colombia, *fassli* subsp. nov. from Bolivia (Rio Songo, 750 m) differs *texa*, by the red discal spot of the hindwings being considerably smaller or altogether absent, and the apical stripe *fassli* of the forewings being lighter; the ground-colour of the under surface is lighter (whitish), too, and the subapical stripes of the forewings are almost white.

C. lepta Hew. (101 B g) from the Upper Amazon is above similar to *texa*, though it has a blue spot *lepta*, on the hindwings instead of a red one; also beneath it very much resembles *texa*.

C. pyracmon Godt. (101 B h) from Brazil and Surinam is one of the smaller species with deep-red, *pyracmon*, somewhat blue-iridescent basal area of the forewings. The upper surface of the hindwings is of a lustrous blue.

C. pygas Godt. (102 A a) from Southern Brazil, Colombia and Bolivia, has only in the ♂ a very insigni- *pygas*, ficant blue reflection. The ♀ has greyish-brown upper surface of the hindwings. — From the collection of Mr. A. H. FASSL we have lying before us one ♂ from Bolivia (Rio Magiri, 700 m) and 1 ♀ from Peru (Upper Madre des Dios) showing an entirely different under surface, the ground-colouring of the hindwings being much lighter yellow and the markings appearing effaced and blurred. The ♂ has a yellow, the ♀ a red basal half of the forewings; the blue spots in the anal angle of the upper surface of the hindwings are especially developed. We call this form *typhla* subsp. nov. (102 A a). *typhla.*

C. cyllene Dbl. and Hew. from the Amazon and Bolivia has dull blue reflection of the upper sur- *cyllene*, face, especially of the hindwings. The markings of the under surface are duller than in *pygas*, but the red band of the forewings is just like on the upper surface strangulated at the end of the discocellular by the dentiform penetration of the black costal margin and of a spot at the proximal margin.

C. aphidna Hew. from Venezuela (Valencia) is known to us only from the description which *aphidna*, runs thus: Upper surface black, the fringes of all the wings white-spotted. Basal half of the forewings carmine, subapical parted white band at each end sprinkled with white. Hindwings with 2 or 3 pale-blue spots near the anal angle. Under surface: forewings as above, but basal part of the costal margin yellow, a blue line running parallel to the costal margin. Subapical band longer and yellow and 1 submarginal blue band, and between this and the apex a grey band. Hindwings lilac, the base yellow, 2 dark brown lines each of them beginning at the base of the costal margin with one red spot, running rather straight and parallel with all the others and the proximal margin to the anal angle, being connected near the distal margin and little undulate and reaching the costal margin near the centre; these lines include some blue spots near the anal angle; the distal margin dark brown, in the centre of the wings there are 2 large black spots, one (near the costal margin) characterized by 3 cyaneous spots, the other by 2, all with ochre-yellow margins.

C. thamyra Men. (102 A b) from Minas-Geraes has retrenched blue reflection and narrowed red *thamyra*, band of the forewings. The under surface resembles that of *cyllene*, but the submarginal yellow band of the forewings runs into the inner angle.

C. maimuna Hew. (103 A a) from the Upper Amazon resembles *cyllene* (102 A a) a great deal. It *maimuna*, differs above by the blue reflection of the hindwings presenting itself only in a sphenoidal spot at the outer border of which, very distant from the distal margin, there are 3 blue dots. The red colouring of the forewings occupies also the entire inner margin up to near the inner angle. The under surface entirely resembles that of *titania* (102 A a), the yellow bands are, however, broader.

C. titania Salv. (102 A a) from Guatemala and Honduras has an expanded and bright blue reflection *titania*, of the hindwings and the red basal area of the forewings is rather reduced.

- asta*. **C. asta** *Salv.* (102 A a b) from Mexico which we have become acquainted with only from the figure, greatly differs from the affined species on the upper surface by the absence of a red band.
- hydarnis*. **C. hydarnis** *Godt.* from Southern Brazil, being very rare, resembles *hesperis*, but it has a straighter distal margin of the forewings, the deeper band of the forewings is narrower, does not reach to the costal margin and ends far from the inner angle; the basal part of the forewings has the same beautiful blue reflection as the hindwings; before the apex of the wings stands a small white spot. Under surface not unlike that of *pygas*, but blue spots missing, the anterior „eight“ is formed very regularly, the posterior „eight“ somewhat less, and the submarginal chain-band of the hindwings is centrally indistinct.
- hesperis*. **C. hesperis** *Guer.* (102 A b) from Colombia, Peru and Bolivia presents itself as a charming little animal in its broad, dark red band of the forewings and the intensive light blue reflection on the greatest part of the hindwings and the basal area of the forewings, which is also noticeable in one or several small dots in the apex of the forewings. — **parima** *Hew.* from Ecuador has narrower and lighter red band of the forewings and a more expanded blue reflection of the hindwings.
- mellyi*. **C. mellyi** *Guen.* from Peru (lying before us from the Chanchamayo). The author takes it to be a species of its own and compares it with *hydaspes* and *hesperis*. We think that it differs from *hesperis* only by the submarginal bands being more yellow on the under surface.
- patelina*. **C. patelina** *Hew.* (102 A c) from Guatemala has the same magnificent upper surface, but different under surface being of black ground-colouring; it is represented by the last figure of the row 102 A c which by a mistake is signed „*aretas* U“.
- pitheas*. **C. pitheas** *Latr.* (102 A b) from Panama and Venezuela has light red bands of the upper surface and peculiar pale-red, sometimes yellowish ground-colouring of the under surface of the hindwings. The ♀ scarcely differs from the ♂.
- cyclops*. **C. cyclops** *Stgr.* from the Tapajoz (Amazon) has a very long red band of the hindwings reaching almost to the distal margin. — **columbiana** *Stgr.* from Colombia differs by a short oval red band of the hindwings and broader black markings of the under surface. — **centralis** *Stgr.* from Chiriqui has a longer and broader red stripe of the hindwings; the anal eye-spot mostly has 2 white spots.
- aretas*. **C. aretas** *Hew.* (102 A c, 4. and 5. figure) from Venezuela has light-red basal half of the forewings and on the hindwings a larger red central area than *pitheas*; in the apex of the forewings is a short reddish-yellow band. The under surface has the same markings as *pitheas*, the ground-colouring, however, is more yellow. On table 102 A the upper surface has by mistake been denoted by *maimuna*, the under surface by *patelina* U; the last figure of the row denoted by *aretas* U represents *patelina*.
- sorana*. **C. sorana** *Godt.* (102 A c) from Brazil, Paraguay and Bolivia differs considerably from all the species by the markings of the under surface of the hindwings. The ♀ has the red band of the hindwings only indicated and a strong blue reflection of the hindwings and a shorter almost white apical band of the forewings; the red bands of the forewings also have a bluish shine. — **latona** *Btlr.* from ? (presumably Venezuela) has a larger red basal area of the forewings and much smaller red area of the hindwings, but in the middle of the hindwings a blue gloss.
- oculata*. **C. oculata** *Guen.* has a large crimson basal spot of the forewings, which is divided by the black veins; forewing without reflection, but hindwing with light greenish reflection. Under surface the most similar to *sorana*, but considerably different; the red median band of the forewings is absent, the subapical band rather broad and blue; ground-colouring of the hindwings black, far away from the distal margin a sharply dentated blue band (thick line), the two eyespot-markings distally not closed, each with only one blue spot. Habitat unknown.

44. Genus: **Perisama** *Dbl.*

The species belonging to this genus are of almost the same size (medium size). They are confined to the mountains of tropical America and easily to be recognized by their exterior: velvety-black upper surface with glossy blue or green bands on the upper surface of the forewings and mostly the same or greyish-green band at the distal margin of the hindwings; the under surface is very characteristic: on a whitish, grey or yellow ground 2 black, either almost straight or curved or dentate lines between which there are often black dots. The first stages are not yet known. We unite the species formerly included in *Myscelia* and separated by E. SCHATZ as *Orophila*, with *Perisama*, because they do not show any symptoms that would justify their separation.

- bonplandii*. **P. bonplandii** *Guér.* (102 A d) from Colombia is the largest species of this genus. The ♀ is hardly different from the ♂. — Specimens with very light and nearly unmarked under surface of the hindwings have been described as **albipennis** *Btlr.* (102 A d). — **d'orbignyi** *Guér.* are specimens in which on the under surface of

the forewings the base is blue instead of red. — **equatorialis** *Guen.* (= *bonplandii* *Hew.*, var. *bourcieri* *equatorialis*, *Btlr.*) from Colombia and Ecuador are small specimens with narrowed blue band of the hindwings and darkened under surface of the hindwings. — **lineata** *Btlr.* from Peru differs from *equatorialis* by the two black lines of the under surface of the hindwings being more remote from each other. — **rubrobasalis** *Rbl.* essentially differs from the typical form by the red basal colouring of the discocellular on the under surface of the forewings, while on the under surface the hindwings and the apical part of the forewings are also of a more dark-brownish colour. Ecuador, 650 m. — **parabomplandii** *) *Dogn.* differs merely by the shape of the black lines on the under surface of the hindwings. The outer line is very much curved, thus partly approaching the inner line, which is also more curved than in normal specimens. Colombia (Popayan). — **mola** *Dogn.* from Ecuador (El Monje, Loja, Zamora) has a narrower band of the forewings, which is parted in the discocellular and does not reach the costal margin; the band of the hindwings is narrower, too. Under surface of the forewings as in *d'orbigny*, that of the hindwings greyish-white, the outer line rounded and regular, the inner line slightly curved; 5 black dots; the red margin of the costal margin inclines to leaping over the first line and reappearing behind the second line.

P. picteti *Guen.* This species of which we have no specimen at hand, has been described as follows: Shape and exterior like *bonplandii*. Above the same marking, but the forewings have two deep-blue rays starting from the wing-base and following the two main veins. A round white subapical spot. Under surface of the forewings black with white basal area followed by a broad pink-red transversal space which is effaced, in the cell stronger coloured and at the margins sky-blue. Then comes a white costal spot and below it a row of irregular spots, the first being green, the others deep cobalt-blue. Behind the apex a streak, likewise blue. Under surface of the hindwings silky greyish-white with 2 fine black lines, one of which is central and very much curved, the other, parallel to the margin, being serrate-dentate and bordered by small red dust-grains in the first half of the line. Apex margined by a fine carmine line from the base to the second line. Peru.

P. morona *Hew.* (102 A d) from Peru and Bolivia resembles above a small *bonplandii*, but is quite different beneath; conspicuous is the red middle-line of the hindwings.

P. priene *Hpfrr.* (102 A d) from Peru seems to be a common species. — **boliviana** *subsp. nov.* from Bolivia has above a broader, more coherent band of the forewings with a bright golden gloss; the red space of the under surface of the forewings is larger, and the ground-colour of the hindwings browner, while it is all grey in **aenea** *subsp. nov.* from Colombia whereby the black dots stand out in bold relief. In this form the golden-green median band of the upper surface of the forewings is more sharply demarcated and the greyish-blue band of the hindwings narrower.

P. cabirnia *Hew.* (102 A d e as *cabirina*) from Peru and Bolivia, differs above from *bonplandii* by a metallic band and basal ray, but still more beneath by lines proceeding in red, on silver-grey ground.

P. cotyora *Hew.* (102 A e) from Bolivia has quite a different under surface, both the wings without red.

With **humboldtii** *Guér.* (102 A e) from Venezuela, Colombia and Peru commences the series of species having a yellow under surface of the hindwings. — **rhodoptera** *Btlr.* above and on the under surface of the hindwings resembles *humboldtii*, on the under surface of the forewings, however, *comnena* (102 A f). — **divergens** *Btlr.* from Ecuador, has a larger red basal area on the under surface of the forewings. — **ouma** *Dogn.* Hindwings with a narrower blue band being nearer also to the wing-margin, on the under surface of the hindwings instead of the red spot a small blue spot. Ecuador (Loja).

P. tringa *Guen.* The author has described this species as follows: very closely connected with *humboldtii* of which it might be merely a local form. The shape of the hindwings, however, very different, being rounded instead of prolonged at the anal angle. The upper surface differs little, but the under surface of the forewings has an entirely carmine disk except the basal area, the yellow colour remains. By this arrangement the black colour is confined to a plain band, while, in *humboldtii*, it covers almost the whole wing. Peru.

P. lucrezia *Hew.* (102 A e) from Colombia resembles above *euriclea* (102 A h), but has yellow under surface of the hindwings with a dentate black submarginal line, a black curved median line, 5 black dots and several small red stripes before the distal margin. The basal part of the forewings is red, the apex of the wings yellow with a black and a red line, from the middle of the costal margin a black band runs to the inner angle.

P. goeringi *Dru.* (102 A e) from Venezuela has no green band of the forewings, but at the end of the discocellular a green spot, a small green apical spot and in the posterior part of the discocellular a green streak to which another smaller spot is distally attached. On the distal margin of the hindwings we notice some green moon-spots. The under surface of the forewings is black, only the basal part of the discocellular and the apex of the wings are yellow. The under surface of the hindwings is ochre-yellow with 2 dentate black

*) The author spells it *parabomplandii*, as also often *bomplandii*.

lines between which there are 3 to 5 very small (sometimes missing) black dots. — Specimens with a brown *hahneli*. under surface were described as *hahneli* Stgr.

- oppelii*. **P. oppelii** Latr. (102 A e, f) from Colombia has a sulphur-yellow under surface with 2 black lines on the hindwings. In *viridinota* Btlr. from Peru the blue band of the upper surface of the hindwings has disappeared except some few little scales. The ♀ has somewhat rounder shape of the wings.
- eminens*. **P. eminens** Oberth. has above a broad yellow band of the hindwings instead of the blue one, but does not differ from *oppelii* beneath. It is presumably not a species of its own, but only a remarkable aberration.
- commena*. **P. commena** Hew. (102 A f) from Peru has an ochre-yellow-under surface of the hindwings and a large red basal spot of the forewings, thus resembling *humboldtii*, but between the black lines of the under surface of the hindwings there are no dots.
- xanthica*. **P. xanthica** Hew. (102 A f) from Peru has black upper surface of the hindwings and deep-yellow under surface with 2 nearly parallel black stripes.
- nyctimene*. **P. nyctimene** Hew. (102 A f) from Ecuador has the forewings marked similarly as in *humboldtii*, but on the distal margin of the hindwings only 4 sphenoidal blue spots, the under surface of the forewings being black with brown basal stripe and brown apex of the wings and 2 white spots at the costal margin; the under surface of the hindwings is yellowish-brown with a dentate submarginal line and a black, little curved median line between which there are 5 black dots and several submarginal white streaks. — In *tristrigosa* Btlr. from Peru the black dots on the under surface of the hindwings are absent.
- cloelia*. **P. cloelia** Hew. (= *ochreipennis* Btlr.) (102 A f) from Peru is most conspicuous by a large blue spot at the proximal margin of the forewings, which are besides provided with a blue basal stripe and a subapical spot; the hindwings have a faint blue band of the distal margin. The under surface has almost the same markings as in *oppelii* (102 A e), but deeper yellow.
- tryphena*. **P. tryphena** Hew. (102 A f) from Colombia has a large yellowish-green spot on the forewings, which is adjoining to a basal stripe of the same colour, a yellowish-green spot at the costal margin and a small bluish apical spot. The hindwings have a bluish-grey marginal band and a yellowish-green median spot. The under surface resembles that of *oppelii*, but is paler yellow, and between the 2 black lines there are also several small black dots.
- vitringa*. **P. vtringa** Hew. (102 A g) from the Upper Amazon has a similar but still paler under surface than *tryphena*, the black upper surface has a yellowish-green band nearly of the same width and leads from the costal margin to the inner angle, as well as 2 blue rays at the base of the forewings and a distal-marginal band consisting of 4 greenish-blue small spots.
- camelita*. **P. camelita** Hew. from Bolivia shows a greenish-blue median band reaching from the costal margin to the inner angle, broad blue basal stripe and rather large blue apical spot of the forewings; the hindwings exhibit a very broad bluish-green marginal band decreasing in width from the costal margin to the inner angle, and some few blue scales in the centre. The under surface is quite similar to that of *humboldtii*.
- lebasii*. **P. lebasii** Guér. (102 A g) from Colombia is striking for the blue rays on the hindwings, which are in *negrina* form. *negrina* form. nov. from the Upper Rio Negro only alluded to. In this form the greyish-green band of the hindwings is also broader, the lustrous blue band of the forewings, however, narrower.
- lanice*. **P. lanice** Hew. (102 A g) from Ecuador and Peru is above very similar to a little *bonplandii*, but the green band of the forewings is narrower and dentate on both sides. The under surface is quite different, as is shown in the figure.
- moronina*. **P. moronina** Stgr. *i. l.* from Peru (Chanchamayo) is somewhat larger than *lanice*, above hardly differing from it, the under surface of the hindwings, however, is darkened to such an extent that, except the light colouring placed distally to the outer dentate line, only an elongated triangular spot distal to the inner black line at the costal margin and some very little spots in the centre remain light; the inner, proximally red-edged line is much less curved than in *lanice* and black discal dots are absent. The under surface of the forewings has more red colouring on the basal part and a complete middle row of blue spots.
- guerini*. **P. guerini** Fldr. (102 A g) from Colombia has almost white under surface of the hindwings; the red stripe at the costal margin of the hindwings may also be absent or only indicated; at the basal part of the under surface of the forewings there may be a red spot instead of a blue one.
- vaninka*. **P. vaninka** Hew. (102 A g, h) from Colombia and Peru differs from the similar species by a red stripe at the costal margin of the upper surface of the hindwings and by pure blue bands. The ♀ is hardly different.

P. alicia Hew. from Ecuador is beneath hardly different from *vaninka*, but the greenish band of the *alicia*. forewing on the upper surface is narrower and straight, thus beginning more near the apex of the forewing, the greenish-blue band of the hindwing is narrower, too; in the apex of the forewing there are 2 or 3 small blue spots. — **P. ilia** *subsp. nov.* (102 A h) from Colombia (Aguaca-valley 2000 m; Tolima, 1700 m, discovered by A. H. *ilia*. FASSL) has beside the subapical spots of the forewings sometimes yet small submarginal blue spots. The under surface of the hindwings is snow-white (not reddish as in *alicia*), the black stripes and spots are finer, instead of the large red spot in the discocellular of the forewings there are only a blue spot (anteriorly) and a red one (posteriorly) at the end of the discocellular; behind the discocellular there are a white spot and a blue one standing together and oblique from the end of the discocellular another blue spot; the other part of the forewings is deep black except the white apex of the wing in which we notice a fine black line.

P. xenoclea Fldr. from Venezuela exhibits much narrower green bands than *alicia* being interrupted *xenoclea*. on the forewings. The under surface of the forewings hardly differs from *alicia*, but the hindwings have light grey ground-colouring, the median lines originate at the costal margin more towards the base, the red margin of the costal margin reaches only as far as to the origin of the median line and the discal spots are much stronger.

P. euriclea Dbl. and Hew. (102 A h) from Colombia and Venezuela differs above from *vaninka* by more *euriclea*. greenish bands and by greenish-blue apical spots and submarginal little dots of the same colour. The under surface is likewise very similar to that of *vaninka*, although the two lines of the hindwing do not run into each other at the costal margin.

P. jurinei Guén. from Peru resembles a great deal *euriclea* above, but on the under surface of the hind- *jurinei*. wings it has a pure white ground colouring.

P. yeba Hew. (= *malvina* Kretzschm.) (102 A h) from Colombia has very light bluish-green bands; in *yeba*. some specimens the marginal band of the hindwings distally turns into whitish colour. The under surface is very similar to that of *euriclea*, but the two black lines at the costal margin of the hindwings are more remote from each other at their origin. The red costal-marginal stripe only reaches as far as to the inner black line, and the discocellular of the forewings does not show any red colour, being on the basal half white, on the distal half lustrous blue.

P. volara Hew. from Venezuela has a shorter and narrower band of the forewing divided by the black *volara*. veins, and a considerably narrower band of the hindwings than *vaninka*; small apical spots absent. Beneath, the inner black line is merely suggested anteriorly, the outer line being finer and the black spots smaller; on the forewings there are no blue markings.

P. calamis Hew. from Bolivia (Apolobamba) is a magnificent little animal from which **fassli** *subsp.* *calamis*. *nov.* (102 B a) from Peru (Upper Madre de Dios) differs by larger bluish-green spots of the upper surface. The *fassli*. basal part of the under surface of the forewings is not red, but orange-yellow, the fringes are red all round and a fine red line stands in the apex of the wings. The hindwings are of a tender grey, in the middle lighter, the wing is encircled by a red marginal-line, besides there is a red dentate submarginal line and a very much curved, fine black median line; behind the median we notice an indistinct, small red stripe.

P. chaseba Hew. from Bolivia differs from **saussurei** Guén. (102 B a) from „Brazil“, Bolivia (Coroico) *chaseba*. and Peru (Upper Madre de Dios) on the upper surface by the absence of the white apical spot; the blue rays *saussurei*. of the hindwings being in *chaseba* nearly in the centre of the wings, are brought nearer to the wing-margin in *saussurei* which is also sometimes provided with a bluish-green band at the inner angle of the hindwings. The under surface of the hindwings is much more yellow than in *chaseba* and in the centre spotted in brown.

P. cecidas Hew. (= *cecida* Ky., Stgr.) (102 B a) from Ecuador and Peru has, like many *Perisama*- *cecidas*. species, a row of blue-shining spots at the distal margin of the hindwings.

P. compaspe Hew. (103 A a) from Colombia resembles very much *cecidas* on the forewings, but it has *compaspe*. a large greenish-blue spot in the centre of the hindwings; the under surface is also quite similar to *cecidas*, although the red median spot on the forewings is strangulated by a dentiform black spot starting from the inner margin.

P. diotima Hew. (102 B a) from Bolivia, Ecuador and Colombia has above unicolorous hindwings. — *diotima*. **cardases** Hew. (102 B b) only differs by the red spots in the middle of the under surface of the forewings, being *cardases*. probably only an aberration of *diotima*.

P. clisithera Hew. (102 B b) from Bolivia (Rio Songo 1200 m) is, with respect to the arrangement of *clisithera*. the markings on the upper surface, most similar to *goeringi* (102 A c), though it has, as is shown by the figures, quite a different under surface. It is one of the most beautiful species of this genus.

P. patara Hew. (102 B b) from Colombia (taken by A. FASSL in Eastern Colombia, Upper Rio Negro, at *patara*. an altitude of 800 m), is a charming little animal being similar to *clisithera* beneath, but above differing from it altogether by the absence of the metallic rays. The ♀ discovered by Mr. A. H. FASSL is somewhat smaller than the ♂, having more rounded wings and much duller colours on both the surfaces.

barnesi.

P. barnesi *Schaus* (102 B a, b) is an entirely differing species. We are unable to ascertain whether it belongs to this genus, since the animal is only known to us from the figure. Striking are the position of the blue band on the upper surface of the forewings, being placed very much towards the margin, as well as the markings of the under surface especially on the hindwings.

laxis.

P. laxis *Guen.* The author describes this species as follows:

I am very much in doubt whether this small species is a real *Callicore* (*Perisama*), but the sole specimen of the Museum of Geneva being in a very bad condition I do not dare to make it the basis of a new genus which would then be insufficiently characterized. Shape of *Callicore clymena*. Forewing with very much projecting angle like in *Vanessa*, black, somewhat dentilated, with small whitish crescents, three rays of green grains of dust at the base of the wing, a small curved band beyond the centre, beginning behind the apex with a white spot and fading away in a group of green grains of dust; finally a golden-green subapical streak. Hindwing somewhat dentate, but not angular, black with a subterminal band composed of 4 small crescents and followed by a number of dust-grains at the anal angle, the whole sparkling in a greyish green, but not golden. Under surface of all the wings coloured like coffee with milk, here and there suffused with pale violet; the fringe-edging is preceded by an extremely fine carmine line only noticeable under a magnifying glass. Forewing with entirely carmine disk, furthermore a broad black band posteriorly effaced, above marked with a white subcostal spot. At first sight the hindwings seem to be unicolorous, except the apex the origin of which is white, but when examining them carefully, we notice a very much dentated subterminal line of a bright carmine, cleared up by white dust-grains. Peru.

Of the following species, which we are not able to reproduce owing to the absence of the originals, we simply give the descriptions.

vichada.

P. vichada *Druce*. Upper surface black. Forewings with green bands as in *humboldtii* (102 A e), hindwings similar to *hilara*. Under surface similar to *vitringa* (102 A g), the black bands further remote and the band next to the base starting only from the centre of the cellule. Somewhat smaller than *priene*. Colombia.

canoma.

P. canoma *Druce*. Upper surface black, the green median band, beginning at the costal margin, in the middle broadest and reaching the posterior angle, connected by a band of the same colour, beginning at the base. A grey stripe near the apex of the wing. Hindwing with narrow bluish-grey band. Under surface of the forewing black, the apex of the wing, a small spot before the middle of the costal margin, and the base silvery white, the distal half of the cellule lustrous carmine. Hindwing silvery white with two black bands one of which, being nearest to the base, is proximally edged in carmine. The distal band zigzag-shaped; between the bands there are 4 distinct black spots; the costal margin is bordered with carmine. Somewhat smaller than *priene* (102 A d). Peru (Huasampilla).

hazarma.

P. hazarma *Hew.* (= *davidi Dogn.*) from Ecuador (Loja) differs from the species, being similar beneath (*tryphena* (102 A f), *lineata*) by having instead of the greenish-blue median band of the forewings a rather broad band of the same colour along the inner margin, as well as an unusually large subapical spot of the same colour. The bluish-green distal-marginal band of the hindwings is little developed.

eliadora.

P. eliadora *Dogn.* from Ecuador (Loja) has like *albipennis* (102 A d) the under surface of the hindwings without markings. The bluish-green median band of the forewings consists of little, isolated spots, whereas the whitish-green distal-marginal band of the hindwings is very broad.

gisco.

P. gisco *Godm. and Salv.* Upper surface quite similar to *xenoclea*, but the green band of the hindwing broader, basal stripes of the forewings narrower, also the median band of the forewing somewhat more reduced. Under surface similar to *humboldtii*, but the black band of the forewing narrower, apical spot more brownish, distal margin and anterior part of the hindwings brownish, costal margin, however, yellow. Colombia.

astuta.

P. astuta *Dogn.* Wings black, markings metallic green with blue reflection. Forewings like in *priene* (102 A d), the transverse band divided at the end of the discocellular, above it a costal spot. Two fine basal rays one of which being in the discocellular reaches the band and a small subapical stripe. Hindwing with narrow distal-marginal band consisting of crescent-shaped spots. Fringes white, at the veins a little black. Under surface reminding of that of *priene*; proximal half of the forewing of a bright red followed by a small blue and white costal spot and some small blue streaks, apex of the wing with extensive colouring of a greyish tint; hindwing brownish-grey, costal margin with fine red edging, submarginal line regular, black, distally bordered in red, proximal line slightly tortuous; 5 rather small dots. On all the wings a very fine red edging at the greatest part of the distal margin, fringes as above. In some specimens the interior of the hindwings has beneath a reddish tint. Colombia (Popayan).

45. Genus: **Callicore** Hbn.

The species of this genus are distributed from Mexico to Argentina, one species has also been occasionally observed in the south of North America; their chief habitat is in the mountains. They have most characteristic features: velvety black upper surface with golden-green bands and very light, mostly white under surface of the hindwings with peculiar circular markings, owing to which the little animals have been denominated „88“. All the subcostal veins arise only after the end of the discocellular, the eyes are densely haired and the forelegs are very slender, not broadened in the ♂♂.

According to W. MÜLLER the shape and depositing of the egg is in *C. meridionalis* the same as in *Myscelia orsis*. The larva lives on *Trema micrantha* Dell. The two lateral, little diverging horns on the head of the fully grown-up larva are very long and slender and have short strong accessory spines each of them forming 4 rosettes; the other spines are like in *Myscelia orsis*; the body is anteriorly slightly, posteriorly more reduced in width; the head is green, the horns are brownish-grey with lighter bands, the back of the horns and the spines turned backwards are preponderantly greenish, the little warts are white, the yellow subdorsal stripe disappears shortly before turning into a pupa. Pupa similar to that of *Myscelia orsis*, above velvety-green, beneath pale green, a white and brown stripe running along the wing-margin being continued behind, beneath the stigmata; in the place of the lateral spines there are distinct white dots, smaller ones being less distinct in the place of the little verrucae. Influenced by the light, it performs movements like *Myscelia orsis* (cf. p. 482).

The name *Callicore* is to be used for the genus *Catagramma* if we interpret strictly the rules of priority; we, therefore, propose the synonymous name *Corecalla* for the present genus.

C. clymena Cr. (102 B c) occurs in South America (to the south as far as Paraguay), but also in the *clymena*. southern parts of North America. — **peruviana** Guen. from Peru and Bolivia has somewhat narrower blue bands *peruviana*. on the forewings, whereas the blue band on the hindwings is a little broader. — **bisosto** Guen. occurring in *bisosto*. Guatemala is much smaller; wings less rounded. — We figure (102 B c) a remarkable aberration with respect to the under surface, having been taken by Mr. A. H. FASSL. — Belongs to the more common species.

C. janeira Fldr. (102 B c) from South Brazil has the distal-marginal band of the hindwings only indi- *janeira*. cated. The ground-colouring of the under surface is darker and the black marking finer than in *clymene*.

C. meridionalis Bates (102 B c) from South Brazil has only in the ♀ marks of the blue band of the *meridiona-* hindwings. The black markings of the under surface are stronger and the distal bordering of the black sub- *lis*. apical band of the forewings is distally projecting in the shape of a tooth.

C. anna Guér. (= *phytas* Bsd.) (102 B c) from Mexico is characterized by an almost snow-white under *anna*. surface with fine black markings. The ♀ has only a somewhat broader blue band of the hindwings.

C. marchalii Guér. (102 B d) from Colombia and Venezuela differs from all the species by the dark *marchalii*. brownish ground-colouring of the under surface.

C. merida Honr. (102 B d) from the mountains of Venezuela (Merida) is very similar to the following *merida*. species, though it has a broader and longitudinally parted blue band of the hindwings.

C. panthaiis Honr. (102 B d) from Venezuela resembles above *lidwina* (102 B e), beneath *euclides* (102 B e). *panthaiis*.

C. consobrina Guér. Unknown to us. According to GUENÉE the green band is rather broad, the under *consobrina*. surface dirty-yellow, the „eights“ are in touch with each other and border on the third line. The forewings very much narrowed and with but one single black dot.

C. phlogea Salv. (102 B d) from Colombia has a narrow and sharply confined band of the hindwings, *phlogea*. being in **boliviana** *subsp. nov.* from Bolivia broader and dentate on both surfaces. — In **phlogeides** *Stgr.* from *boliviana*. Colombia, the blue band of the forewings is broader and the blue band of the hindwings is missing altogether. *phlogeides*.

C. dodone Guen. (102 B d, e) from Colombia has broad band of the forewings, but no band of the hind- *dodone*. wings whatever or only quite a narrow one being placed more towards the centre of the wing.

From **C. neglecta** Salv. (102 B e) from Guatemala, Colombia and Peru, **granatensis** Guen. differs by *neglecta*. a narrower blue band of the hindwings. *granatensis*.

C. lidwina Fldr. (102 B e) from Peru and Rio Negro has, in a certain exposure to light, a magnificent *lidwina*. blue reflection.

C. eluina Hew. (102 B e) from South Brazil (as is stated, also from Venezuela) has a much narrower *eluina*. band of the hindwings than *lidwina* and beneath somewhat darker ground-colouring, but the same blue reflection as *lidwina*.

- euclides*. **C. euclides** Latr. (102 B e) from Colombia and Peru has broad blue bands on all the wings and beneath strong black markings. In a certain exposure to light there is a deep-blue reflection noticeable, especially on the hindwings.
- guenéei*. **C. guenéei** spec. nov. from Ecuador resembles *euclides* above, but the green bands showing a bright golden or azure reflection, according to the incidence of light, are still broader, especially the band on the hindwings appearing in a certain exposure almost just as narrow as in *artemis*, in another exposure, however, extending (with irregular proximal delimitation) far across the wing-centre. Under surface similar as in *eupepla*, the black band of the forewings being, however, a little narrower and the white colouring at the base of the wings more reduced; on the hindwings we miss the posterior black spot of the anterior „eight“, and the red costal-marginal stripe only goes, as for instance in *phlogea*, as far as to the second black line and, at its end, is neither extended to a spot. The ground-colouring of the under surface of the hindwings is somewhat lighter than in *eupepla*.
- artemis*. **C. artemis** spec. nov. (102 B f) from Colombia has only very faint blue reflection, narrow blue band of the hindwings, and beneath very fine black markings.
- metiscus*. **C. metiscus** Dbl. and Hew. (102 B f) from Venezuela has very broad, golden bluish-green bands on all the wings, but only little blue reflection on the proximal part of the band of the hindwings. The under surface of the hindwings has fine black markings, and the forewings have only a red spot at the end of the disco-cellular.
- eupepla*. **C. eupepla** Salv. and Godm. (102 B f) from Central America may be looked upon as the most beautiful species of the genus. In certain exposure spots of golden gloss appear in the greenish-blue bands on fore- and hindwings.
- belesis*. **C. belesis** Godm. and Salv. (102 B f) from Central America not lying before us seems to have no blue reflection. The under surface of the forewings has much more red colouring and the hindwings are much stronger marked in black than in *eupepla*.
- gabaza*. **C. gabaza** Hew. (102 B f) from Colombia has a beautiful violet reflection on the whole upper surface and only a minute light apical spot of the forewings. The ♀ has no blue reflection.
- astala*. **C. astala** Guér. (= *cornelia* H.-Schäff.) (102 B g) from Mexico to Colombia differs from *gabaza* above only by a white apical spot of the forewing and beneath by the outer black submarginal line being accompanied by a red line.
- candrena*. **C. candrena** Godt. (102 B g) from South Brazil and Argentina is isolated in this genus, since it has no blue band on the upper surface of the forewings and an extraordinarily strong marking of the under surface of the hindwings.
- branicki*. **C. branicki** Oberth. (102 B g), described by the author as *Catagramma*, is undoubtedly an aberration of a *Callicore*, presumably of *clymena*, for we also have lying before us a specimen of *clymena* being quite similarly marked. Mr. A. H. FASSL has also taken aberrations of *Callicore* with quite similar markings.
- ceryx*. **C. ceryx** Hew. from Cuenca (Ecuador) is undoubtedly no species of its own, but an aberration, possibly of *euclides*.

The following forms are not lying before us, but have been compared with *C. clymena* (102 B c) by their author. Some *Callicore*-species are very much inclined to variation. It seems as if the author has taken several such aberrative forms to be species of their own.

A. Wings above black, without blue reflection.

- elinda*. **C. elinda** Guen. Shape and general exterior like *clymena* (102 B c). Green band of the forewings broader and more lustrous, that of the under surface with much less spacious markings; the „eight“ very isolated, parallel, with fine dots. Margin very narrow red; by its rhombic part the third line approaches the costal, the fourth starting in red to the fifth. The red disk of the forewings cut straight through in its first half, later on suddenly geniculate instead of rounded as in *clymena*. First white apical band at first broad, later on from the second suddenly narrowed. Habitat unknown.
- aurelia*. **C. aurelia** Guen. Shape of *candrena* (102 B g). All the wings triangular and prolonged at the apex and the anal angle, with interrupted edging of fringes. The green band of the forewings short, its 2 upper spots fragmentary and small, the first not reaching the subcostal vein, the second almost punctiform. The green subapical streak divided into two unequal ones. Under surface of wings with jet-black, very broad and distinctly visible markings, the hindwings yellowish-grey. The two „eights“ touch the third line; the anterior one with a single dot, while its inner part is narrowed to some kind of a stalk. Costal margin broad red forming now the beginning of the fourth line. Red disk of the forewings dark and very broad, the black band remaining very narrow. The small white apical stripes still narrower and more distinct than in *clymena*. With respect to the distinctness of the markings reminding of *Catagramma hydaspes* (101 B d). Habitat unknown.

C. bourcieri *Guen.* All the wings are prolonged at the angles. The green band is anteriorly just as *bourcieri*. broad as posteriorly and geniculate in the cellule. The under surface of the hindwings of a rather deep grey, with faded lilac. The markings are all strictly isolated. In the anterior „eight“ the second dot is effaced. The red costal margin is broad and is met by the third line below the fourth, while the fourth line proceeds on it as far as the costal. The black band bordering the red of the forewings is very narrow and both the small grey stripes following it are broad. The club of the antenna rather prolonged and at the base of the inner side reddish-brown. Quito.

C. seropa *Guen.* Closely allied to *clymena* (102 B c) the shape of which it has, the wing-contour being, *seropa*. however, generally more rectangular. All the fringes sharply interrupted. Band of the forewings broader, more intensely golden-coloured, distally sinuate, the band of the hindwings narrower and shorter. The markings of the under surface are finer, both the „eights“ strictly isolated and parallel. The red costal margin is very narrow and remote from the „eight“, but it expands in the right angle across the 3. and 4. line; the 3. line sends forth a fine black streak margining it as far as the costal vein. The red disk of the forewings forms a bend at its junction with the black band, and the two small white apical stripes are very broad and more sinuate. — Is possibly only a local form of *clymena* though it has a peculiar appearance. Para.

C. nystographa *Guen.* Band of the 4 wings similar and of the same width, bright green, that of the *nystographa*. hindwings parallel to the margin, the space between being double as broad as the band itself. Under surface with very fine markings, the two „eights“ very isolated, the anterior „eight“ pyriform with 2 dots. Costal margin thin, terminating at the 3. line, the fourth reaches the apex of the wing. Black band of the forewings very broad, confining the red disk which extends towards the base of the wing. Quito. — According to a figure by H. REBEL in Vol. 46 of the Berl. Ent. Zeitschr., the under surface of the hindwings is almost just as dark as in *marchalii* (102 B d), but the black markings are much darker there, the under surface of the forewings exhibiting also an about thrice as broad black band. GUENÉE has not mentioned anything about the dark under surface of the hindwings.

C. pavira *Guen.* Shape and wing-contour like *metiscus* (102 B f). Bands bright golden-green, blue at *pavira*. the edges, those of the forewings broad, connected with the base by a faded streak over the median vein, those of the hindwings nearly just as broad, entirely discoid, posteriorly pointed, below it a streak at the anal angle. All the fringes white. Under surface of the hindwings white with very fine markings; the first „eight“ pyriform with a single dot. Red costal margin confined upon a broad, very short faded streak. Disk of the forewings entirely black with white apex, parted by a fine black streak not reaching the base. Base white with a plain carmine cellular spot. Peru.

B. ♂ with azure reflection.

C. coelinula *Guen.* Seems to be allied with *eluina* (102 B e), but the entirely white fringes, the spot *coelinula*. on the hindwings of which I shall speak later on, the two-dotted „eights“ etc. together with the different habitat prevent me from uniting it with „*eluina*“. It has the shape and wing-contour of *clymena* with which HÜBNER has mixed it up, from which, however, it is easily distinguished by its blue reflection. The fringes are entirely white on the hindwings; the latter, moreover, have below the blue reflection, between the 1. and 2. median vein, a glossy spot, more metallic than velvety blue, which is, however, only noticeable in certain exposure and changes even into green. The under surface may be compared with HEWITSON's figure 31, but the satiny-white is homogeneous, the markings are more narrowed, the „eights“ larger and closer to each other; the upper „eight“ has beside the dot a very distinct comma-like streak. The 5. line is regular and slightly sinuous, and follows the dents of the wings; the red margin, finally, is very thin, far remote from the „eight“ and confined by a distinct rhombic spot from which the 3. and 4. line start and which is distally somewhat concave. The black band of the forewings is geniculate. Brazil.

C. brevipalpis *Guen.* (= ? *eluina* var. *Hew.* [fig. 65] ? *lidwina* *Fldr.* *). I cannot tell for certain whether *brevipalpis*. the said synonyms may not be partly applied to this new species, for the insufficient exactness of figures and descriptions prevents me from doing so; but since neither of the authors has spoken of the principal character, and the palps of this *Callicore* are so strikingly short, I concluded therefrom that they can certainly not have seen this species. At all events it has the following characteristic distinctions. The hindwings are prolonged at the anal angle and have entirely white fringes; their terminal band is very broad, pale and dull green, that of the forewings being oblique, bright green, distally very distinct, turning posteriorly on the opposite side into reflection. The subapical streak is very pronounced, the sky-blue reflection less bright than in *coelinula* not covering any spot. Under surface snow-white with rather thick, very distinct and isolated black markings. The anterior „eight“ forms a circle with a handle, something like a tennis bat, and has only one single large dot. The red margin is very thin and its distal end, by no means widened, receives the 3. and 4. line which join each other before reaching it. The palps do not extend beyond the forehead. Venezuela.

*) Wien. Ent. Mon. 6, p. 114.

C. Neither with reflection, nor with green band of the forewing.

carmen.

C. carmen Guen. Shape and contour of *candrena* (102 B g). Wings with blue basal spot, of the same shape, but small on the forewings, with a green web above it changing with deep green on the wings; forewings with interrupted fringes, with a fine subterminal line of pale green, anteriorly brightened by white; hindwings with broad, very distinct subterminal band of greenish-blue changing off with golden-green. The markings of the under surface are very distinct on all the 4 wings. Hindwings of somewhat dingy-white, the „eights“ pretty much like in *candrena*, the anterior „eight“ without dots and connected with the third line by 2 black veiny streaks; red margin fine, but indistinctly broadened between the „eight“ and the third line. Under surface of the forewings bright carmine, delimited by a rounded black band being proximally dentate. Apex with a green streak between the two white lines. Brazil.

46. Genus: **Dynamine** Hbn.

This genus belongs to the series of forms of *Limenitis* what is proved not only by the structure of the butterfly, but also by the shape of the larva and pupa. We have placed it here, because the great works on exotics (such as STAUDINGER-SCHATZ, GODMAN-SALVIN), according to which the museums and collections are mostly arranged, have placed it immediately after the *Callicore*; KIRBY's Catalogue has the same arrangement. Two groups are distinguished by the veins, being also characterized by their exterior, but connected with each other by intermediary forms. From the other genera of the *Limenitis*-group, *Dynamine* differs by the small size and, in the veins, by the 3. subcostal vein not running into the apex of the wing, but into the costal margin; the 4. subcostal vein runs into the apex of the wing and the fifth into the distal margin. In one part of the species the sexes are very similar to each other, in the other part, however, they differ greatly above. The larvae also show the general type of the larvae of the *Limenitis*-group, though they are more broad than cylindrical, and the spines on the head are absent, what is easily explained by the habits of the larvae preponderantly feeding on the pollen of the blossoms and inflorescences of *Dalechampia*; when penetrating into the blossoms or buds with the head and the prothorax, spines or any similar formations at the head and prothorax would only be an impediment. The spines of the body are transformed into short cones bearing knobbed or plain bristles. The pupa resembles very much that of *Limenitis*. About 50 species of this genus are spread all over the tropical parts of America, although their proper habitat is in the valley of the Amazon-River where nearly 30 species are to be found. The habits of the butterflies totally agree with those of the *Adelpha*-species being the typical representatives of the *Limenitis*-group in South America. According to P. HAHNEL the butterflies fly on the banks of rivers as well as in the neighbourhood of human habitations and in plantations, and are easily attracted by baits. When taken in the net by the collector, they display a very excited, timid behaviour. According to A. SEITZ the *Dynamine*-species have an elegant flight except the white species having a peculiar jerking zigzag-flight whereby they differ from the exteriorly similar *Nymphidium*-species (*Erycinidae*). They mostly fly in double a man's height, preferring shady roads in the woods and like to rest on wet places of the soil. According to a letter from Mr. A. H. FASSL nearly all the species fly at an altitude below 1000 m; the butterflies rest on wet places of the soil, but also on hedges and blossoming bushes where also the ♀♀ fly. The flight is similar to that of *Adelpha* and *Pyrhogyra*, i. e. rather quiet, similar to that of *Melitae*. — By the colouring of the upper surface two groups may be distinguished: species with a white upper surface in both the sexes, and such with variegated upper surface of the ♂♂, the latter group, according to the markings of the under surface, being subdivided into species with eye-spots and into such without.

A. Upper surface white.

agacles.

D. agacles Dalm. (101 A a) from Southern Brazil has above and beneath nearly the same markings save that on the under surface the white markings in the dark margins are larger, and in the anterior part of the forewings there are verdigris markings. — **core** *subsp. nov.* from Colombia (Cauca Valley), presumably occurring also in Venezuela and Central America, has above and beneath narrower black bands with less white markings, and less verdigris colouring on the under surface.

maeon.

D. maeon Dbl. and Hew. (101 A a) from Brazil is rather large, has broad margin of the hindwings, divided by a white line, and a black median band of the hindwings. The ♂ has greenish-blue gloss on the basal area of the forewings, the ♀ being without it.

athemon.

D. athemon L. (101 A a) from Brazil is a little larger still than *maeon* from which it also differs by a broad white line of partition of the black distal margin of the hindwings as well as by the black median

band of the hindwings occurring also in a spot at the inner margin of the forewings. The black bands of the under surface have brown filling.

D. coeades *Burm.* Somewhat larger than *athemon*, of the same shape, and very similar also with respect to the colouring and markings, body above black, beneath white. Antennae with fine white ringlets. Hindwings entirely white, forewings anteriorly with black costal margin and distal margin, expanded at the terminal angle, with 3 concave sinus, the first being longer, at the end of the cell, the second shorter but broader, in the 5. cell of the distal margin, and the third smaller, in the last marginal cell. Base of costal marginal band somewhat expanded with a bluish-green metal-spot. Beneath like above, but in the basal part of the black costal band there is a yellow ray penetrating yet into the first sinus and being proximally accompanied by a blue metallic border; the apex of the wing, finally, is white and the black band before it bordered in yellow. Taken in the north of Buenos-Ayres, near the village Las Conchas. *coeades.*

D. amazonica *spec. nov.* (101 A a) from the Amazon, is presumably a temporal or local form of *athemon*. It differs by its greater size and by greater extent of the blue brilliant colouring on the forewings as well as in the black margin of the hindwings. The brown band in the middle of the under surface of the hindwings is stronger. *amazonica.*

D. coenus *F.* (101 A b) from Brazil, Paraguay and Bolivia, has a very narrow black margin of the hindwings and a bright bluish-green gloss of the basal part of the forewings. The under surface has much browner filling in the black markings. — **leucothea** *Bates* from the Amazon has broader dark markings, **albidula** *Weeks* (= *coenus* *Stgr.* i. l.) from Bolivia, however, narrower dark markings, so that the posterior submarginal spot and the white discocellular spot of the forewings are in coherence with the white ground-colour. *coenus.* *leucothea.* *albidula.*

D. theseus *Fldr.* (101 A b) is distributed from Mexico to Colombia and Venezuela. The species is remarkable for the stretched shape of the wings and the broad black margins. *theseus.*

D. limbata *Btlr.* (101 A b) from Bolivia is somewhat larger than *agacles*, has broader black margins, a crescent-shaped white spot in the middle of the black hindwing-margin and verdigris colouring on the basal part of the forewings. The under surface has much more verdigris markings. *limbata.*

D. niveata *Btlr.* from Bolivia differs from **pittheus** *Stgr.* (101 A b) from Venezuela, Colombia and Panama above by full black margins and beneath by having an interrupted, posteriorly also only suggested brown median band of the hindwings. *niveata.* *pittheus.*

D. pieridoides *Fldr.* (101 A b) from Colombia, Venezuela and Panama, differs from *anubis* by somewhat smaller size, somewhat narrower black margin of the hindwings, and on the under surface of the hindwings, by the absence of the brown half-band in the centre of the costal margin. *pieridoides.*

D. anubis *Hew.* (101 A b, c) from the Amazon is larger than the preceding species. The ground-colour is above and beneath white, the black margins are very broad. The black margin of the hindwings is parted in the middle by a white line, at the distal margin of the forewings there are two white spots and in the centre of the costal margin there is a large white spot. The under surface has much browner markings of the distal margin and wing-base and an elongate spot filled with brown in the centre of the costal margin of the hindwings. *anubis.*

In **D. myrrhina** *Dbl.* (101 A c) from South Brazil and Paraguay the hindwings are above and beneath fully white, only the centre of the under surface of the hindwings exhibits a brown dot sometimes hardly visible. On the basal part of the upper surface of the forewings there is likewise bluish-green gloss, and the under surface of the forewings is rather broad white at the distal margin. *myrrhina.*

D. ate *Godm. and Salv.* (101 A c) from Guapiles is unique among the white species for having on the under surface of the hindwings 2 submarginal blue eye-spots which are placed at the outer boundary of the submarginal brown band running parallel to the wing-margin and, therefore, being curved. Beside a sub-basal hindwing-band there is a premedian brown one with little bluish-glossy marking. The marking of the under surface of the forewings corresponds to the upper surface, although the common lustrous blue markings are present. *ate.*

B. Upper surface variegated.

a) Under surface of the hindwings without eye-spots.

D. tithia *Hbn.* (101 A c) from South Brazil is one of the smallest species. The upper surface is greenish-blue in the ♂, but much more greenish in the ♀ having also purer white spots on the upper surface and one such spot on the anterior part of the hindwing-centre. This species is characterized by a broad brown median band of the under surface of the hindwings, with a light filling. — Larva according to WILH. MÜLLER, when being grown up, with considerably shorter accessory spines than the larva of *mylitta*, head pale yellowish, body on the first 5 segments quite green, on the following 6 segments green above the stigmata, only the 4th segment brownish-red, beneath the stigmata whitish-green with 2 white dorsal lines beginning from the 6th *tithia.*

segment, from the 7th segment rather broad white oblique stripes enclosing the lateral spines of the preceding segment and reaching as far as to the anterior end of that segment. White, glassy diaphanous are: the lateral spines 6—12, the spines beneath the stigmata 6—12 and those above the feet 6—12; the other spines are black, but with hyaline knobs. The white oblique streaks are in the end so much widened that the ground-colour almost disappears. The pupa resembles that of *mylitta*, but the horns, wing-edge, and protuberances on the segments 2—5 are pretty much effaced, and besides, the pupa is, like that of *Euclides isabella* very much curved towards the venter, so that the ventral part is nearly parallel to the place it is lying on. It is greyish-green with a brown dorsal and lateral line and numerous dark lines on the second segment and the wings. Beside this darker form there is another light one. The eggs are, as it seems, always deposited to or into a rather young bud (inflorescence-bud) of *Dalechampia triphylla* Lam., but especially often on *Dal. stipulacea* Müll. Arg. The little larva, hardly crept out, eats into a male bud, always selecting the spot where the upper rims of the two resinglands meet. In this way it always gets into the oldest male flower-bud in which it then remains hidden, eating the pollen, but ejecting its faeces out of the bud. Thus hidden in flower-buds, it goes through the first two skinings. During the 3 last stages it spins together the involucreal leaves of an inflorescence in which hiding-place it finds its food at the same time. In this or a similarly created hiding-place the insect also pupates.

salpensa. **D. salpensa** Fldr. (101 A d) from Colombia, Venezuela, Central America, Brazil, Peru and Bolivia differs from *tithia* only on the under surface of the hindwings by the brown median band being only plain, narrow and regularly shaped, and, therefore, not sinuate.

radicula. **D. radicula** Hew. (101 A d) from the Amazon has a light bluish-green upper surface with black marginal markings and white spots. The under surface of the hindwings has 3 yellowish-brown bands bordered in black. The ♀ has a black upper surface with white spots on the forewings, a white median band and a blue submarginal band of the hindwings.

sara. **D. sara** Bates (101 A d) from the Upper Amazon is as large as *radicula*, has more distinct white spots on the upper surface of the forewings, the white spot at the inner margin being absent. The under surface, especially of the hindwings is, as the figure shows, rather different.

decimia. **D. decimia** Hew. (101 B a) from the Upper Amazon differs from the preceding four species above by lighter and more green colouring, the white spots being also larger and more intensively white. Owing to the marking of the under surface of the hindwings, this species has an isolated position.

getae. **D. getae** Godm. and Salv. (101 A d) from Peru and Bolivia has lustrous greenish-blue upper surface with black distal marginal markings. The under surface differs greatly from *tithia* and *salpensa*, especially on the forewings, as seen from the figure.

agnes. **D. agnes** spec. nov. (101 B a) from Bolivia and Peru, resembles very much *getae* above, though it has a very fine black submarginal line of the hindwings and small green spots in the apex of the forewing. Whereas the under surface of the forewings is quite similar to that of *getae*, the under surface of the hindwings is, as the figure shows, rather different.

ines. **D. ines** Godt. (100 A ~~g~~^e) from Colombia has a green-shining upper surface. The under surface is more yellowish than in *agnes* and the bands are finer.

vicaria. **D. vicaria** Bates (101 A e) from the Upper Amazon is the largest species of the genus. The very rare ♂ has, on the hindwings, a white basal and median band, broader than in *mylitta*, but before the distal margin only some small white spots. On the forewings it has, like *mylitta*, an oblique but broader white half-band at the base of the inner margin. Shortly before this band, more distally, we notice a larger, irregular white spot and, at the costal margin, a long broad one, similar as in the *egaea*-♀. Besides there are 2 rounded spots before the distal margin and one before the end of the inner margin.

hecuba. **D. hecuba** Schaus (101 A e f) is similar to *vicaria* above, but is characterized as a good species by the rather different marking of the under surface.

amplias. **D. amplias** Hew. (101 A f) from the Amazon is most remarkable for its green upper surface with very black markings. The ♀ is above similar to the ♀ of *mylitta*.

erchia. **D. erchia** Hew. (101 A f) from the Upper Amazon has ochre-yellow colouring of the upper surface with a green tinge on the inner part and with dark marginal marking. On the submarginal band of the under surface of the hindwings we sometimes notice the beginnings of an eye-spot marking.

D. chryseis *Bates* (101 A f) from the Upper Amazon and Nicaragua has a broad black apical part of *chryseis*. the forewing.

D. sosthenes *Hew.* (101 A f) from Nicaragua has stronger bands on the under surface of the hind- *sosthenes*. wings. It differs above from *ines* by a narrower margin of the forewings and a broad black anal angle of the hindwings.

b) *Under surface of the hindwings with eye-spots.*

With **D. setabis** *Dbl.* and *Hew.* (101 A g) from Bolivia and the Upper Amazon begins the series of species *setabis*. bearing eye-spot markings on the under surface of the hindwings; *setabis* has only one eye-spot being placed at the anterior part of the submarginal band.

D. artemisia *F.* (= *artimesia* *Ky.*) (101 A g) from South Brazil and Bolivia is a small species, in *artemesia*. the male sex above verdigris or glossy bluish. The ♀ resembles the ♀ of *egaea*, it has, however, smaller white spots and narrower white bands.

D. neoris *Hew.* from the Amazon has a verdigris upper surface with diaphanous marking of the *neoris*. under surface, uniform entire black margin of the hindwings and very much curved black distal margin as well as a black triangular spot in the centre of the costal margin of the forewings. The under surface has white ground-colouring, on the hindwings there are 4 yellowish-brown stripes the outer one of which has, on the outside, 3 blue eye-spots surrounded by black, the distal margin being also yellowish-brown, parted by a blue line. The forewings have yellowish-brown marking on the distal margin, at the basal part of the costal margin and at the costal margin near the apex of the wing, as well as in the centre black marking forming a circle near the distal angle.

D. thalassina *Bsd.* (= *immarginata* *G.* and *S.*) (101 A g) from Central America and Colombia, has *thalassina*. a green-shining upper surface with black margins being, however, visible on the forewings only in a certain exposure.

D. pebana *Stgr.* (101 A g h) from Pebas is smaller than *egaea*, resembling it, however, above. The *pebana*. marking of the under surface is rather different, as seen from the figure. The ♀ is still unknown.

D. onias *Hew.* (101 A g) from the Amazon exhibits a verdigris upper surface with dark brown distal *onias*. margin, occupying on the forewings the whole apical third and forming a four-cornered spot in the distal angle. On the forewings, the white median spots of the under surface are diaphanous. The under surface of the hindwings exhibits white ground-colouring with 4 brown bands of which the middle one is parted by a blue stripe, the distal one having 2 blue eye-spots. The under surface of the forewings is black to a great extent, the basal part brown; in the black part there are 4 white spots, and small blue spots are at the inner margin, in the middle of the distal margin, and a blue submarginal line borders the brown distal margin. The ♀ is brownish-black, with a moderately broad white median band and a white subbasal band of the hindwings, which are also provided with a submarginal bluish line. The forewings have 7 white spots varying in size.

D. mylitta *Cr.* (= *postverta* *Cr.*) (101 A h) *) is nowhere rare in the whole neotropical region. — *mylitta*. In ab. *bipupillata* *Stgr.* i. l. the under surface of the hindwings lacks the blue-shining spot behind the second *bipupillata*. eye-spot in the anal angle. According to the observations of W. MÜLLER the small larvae crept out on the 5 th of November, the butterflies on the 1st of December. The larva is, in the last stage, rather short and broad, not like most of the Nymphalidae entirely cylindrical, thus resembling on the whole more the habitus of an Erycinidae-larva than that of a Nymphalidae-larva. The spines are in general as in *tithia*. In the 3 last stages the larva is of a pale green with white dorsal stripes, the spines are also green, the ball-ended bristles glassy diaphanous. In the 5th stage there is also a darker brownish-black form found beside the light form, which has, however, been observed only in captivity. The larva has the same habits and the same food-plants as *tithia* (cf. p. 505). The pupa is either light-green or light-brown, tolerably slender, the wing-partings are closely appressed; it has 2 short coniform horns, 2 strong projectures at the second and fifth segments, both are two-pointed at the ends, small not paired tips are at the anterior margin of the segments 6 to 10, there is also a strong edge of the wings present. It has 3 movable connections of the segments and is only movable to the sides, showing the following brownish markings: a stigma-stripe effaced towards above, a distinctly circumscribed spot on the 7th segment in the middle line and 2 lines at the bottom of the wings, wings and head being of dark colour.

D. paulina *Bates* from the Upper Amazon is nearly just as large and above nearly of the same *paulina*. colouring and markings, as *vicaria*, the under surface, however, resembles that of *mylitta*, though darker.

D. egaea *F.* (= *serina* *F.*) (101 A h) from Paraguay (and from the Upper Amazon?) resembles a *egaea*. great deal *mylitta*, though it has a narrower black margin of the hindwings and broader black marginal markings on the upper surface of the forewings. The ♀ has broader white bands and spots than the ♀ of *mylitta*.

*) The valve of *D. mylitta* *Cr.* is of a peculiar shape, being at the base expanded like a board with a slight depression in the centre and antler-like end, the three tips of which remind us in some way of the Lycaenidae-genus *Lampides* (especially of *L. celeno*). (H. FRUHSTORFER.)

- perpetua*. **D. perpetua** Bates from the Upper Amazon is about as large as *vicaria* (101 A e). The upper surface is green like in *mylitta*, the black distal margin of the forewings is much broader and has two deep roundish spots starting from the dark margin, at the inner angle. At the cell-end there is a bent black stripe, but in the wing-centre there is no black spot. The hindwings have a broad dark margin with distinct proximal delimitation. Some specimens have a black spot near the anal angle. The under surface resembles that of *egaea* (101 A h), but on the forewings the white apical spot coheres with the white spot in the inner angle, the median band of the hindwings being much broader and with much blue marking. Is one of the rarest species of the genus.
- glauce*. **D. glauce** Bates (101 B a) from Central America, the Amazon and Bolivia, has a golden-green upper surface. The under surface greatly resembles that of *egaea*, but the posterior eye-spot of the hindwings is much less developed.
- dyonis*. **D. dyonis** Hbn. (101 A i, 101 B a) from Mexico and Honduras, but also found in the south of the United States, is above more golden than *glauce* and has somewhat less black markings. The under surface of the hindwings has two fully developed eye-spots.
- zetes*. **D. zetes** Mén. (101 A i) is the only species of this genus having its habitat on the Antilles. The present specimen comes from Cuba. This species is distinguished by its stretched shape of the wings. The under surface of the hindwings exhibits, beside the rather broad submarginal band enclosing the two proportionately large eye-spots, three pretty straight and parallel brown bands situate near the wing-base.
- gisella*. **D. gisella** Hew. (101 A i) occurs in Panama, Colombia, Bolivia and on the Upper Amazon. HEWITSON has described this magnificent species according to one ♂, and figured a violet-blue specimen. But there occur just as often specimens without the violet shine, the white spots of the forewings also vary greatly and may even be represented only by minute traces of some spots. The ♀ (the figured specimen belongs to the collection of Mr. A. H. FASSL) resembles above very much the ♀ of *mylitta*. — ab. **peruviana** Stgr. i. l. There are specimens extant in which the white spots on the upper surface of the forewings are but suggested or partly absent.
- zenobia*. **D. zenobia** Bates (101 A i) from the Upper Amazon is unique in the colouring of the upper surface and the marking of the under surface. The ♀ is still unknown.
- meridionalis*. **D. meridionalis** spec. nov. (101 B a) from Paraguay has three small eye-spots in the submarginal band filled with light yellow, otherwise the under surface resembles that of *arene*, but *meridionalis* lacks the small black eye-spots in the apex of the forewings, instead of which there is one larger white spot.
- arene*. **D. arene** Hbn. (101 A i) from the Lower Amazon has, on the under surface of the hindwings, a complete row of 5 eye-spots whereby the under surface of the hindwings reminds us of the Satyridae-genus *Eup-tychia*.
- persis*. **D. persis** Hew. (101 A i) from the Upper Amazon is a remarkable species of this genus owing to its dark sky-blue upper surface. The under surface is similar to that of *arene*, but the eye-spots — except the most anterior one — are only indicated by black dots.
- myrson*. **D. myrson** Dbl.-Hew. and **aerata**, since we have not succeeded in procuring the literature dealing with these species.

47. Genus: **Cyclogramma** Dbl.

As to the habitus this genus, consisting of few tropical species, is placed between the *Cybdelis* and the *Catagramma*; rather approximate to the latter, but with longer legs, like those butterflies that are fond of resting on the trunks of trees, such as the *Ageronia*, *Gynaecia* etc. In *Callicore* with which the *Cyclogramma* are also closely allied with respect to the under surface of the hindwings — they also exhibit the number 88, though somewhat displaced — we miss altogether the upper discocellular of the forewings; in *Cyclogramma* it is present, though short. The eyes are hairy, the antennae of medium length with a club shrinking somewhat into the shape of a spoon, the middle tibiae elongate, the forewings of a normal shape with quite slightly concave margin, the hindwings with their costal margin cut off straight and slightly undulate distal margin. REUTER seems to lay great stress upon the fact that the points of the palpi are not bent down as in the otherwise approximate *Perisama*; but this is not constant, the butterfly is probably able to lower or to stretch out the points of the palpi; the position in which the insect perishes remains then. We know of 2 species distributed from Mexico across Central America and reaching as far as the most northern parts of South America, but nothing is known to me about their early stages, and as to their habits only that they drink from brooks and wet places on the road and seem to disdain flowers.

C. pandama *Dbl.* and *Hew.* (102 B h). Of a deep darkbrown, the black apical part of the forewings *pandama*, divided by an oblique orange band; before the apex a small white spot. Beneath the forewings exhibit a red proximal part, the hindwings 4 rings combined to 2 eights. Mexico to Panama. Not rare.

C. bachis *Dbl.* (= *bimaculata* *Hew.*) (103 A a). Beneath quite similar to the preceding species, but *bachis*, above we notice instead of the orange band another larger white oblique spot. The forewings are in their basal part of a lustrous lilac, the hindwings blue. Only in Mexico (e. g. Oaxaca), not common.

48. Genus: **Haematera** *Dbl.*

The charming little butterflies forming this little genus, are above dark brown and scarlet or vermilion. Beneath the forewings are quite like those of a *Callicore*, but the hindwings are of a leaf-like colour without the characteristic lines and marks of the preceding genera. Systematically, the nature of the palpi, their hair etc. brings them nearest to the *Cyclogramma*. The larvae, according to W. MÜLLER, also point towards this group; they live on Sapindaceae. The main difference between the *Haematera* and the preceding genera may be caused by the biological habits of the two groups, consisting in the *Callicore* displaying adorning colours, the *Haematera*, however, defensive colours, on their under surface. In South Brazil I found, towards evening, sleeping *Callicore* though very rarely when searching through the bushes for larvae. I noticed them then in the very interior of the bushes resting entirely hidden on the principal stalk, with their wings drawn in and their head turned downwards; *Haematera* *pyramus*, however, which is common in some districts of South Brazil, I roused out of the ends of the twigs of bushes where it had been resting quite free and unnoticeable, protected by the under surface and resembling a dry leaflet.

On the forewing, the first subcostal vein arises immediately before the cell-end, the second something beyond it; the upper discocellular is longer than in the other *Catagrammidi*, the lower one being absent as the median one bends round immediately into the middle radial. The chief veins are slightly thickened at the base of the forewings, though not properly enlarged to a blister. The larva has, only as long as it is quite small, minute spinal stumps which disappear soon and turn into white granulations. The butterflies fly in the sunshine on roads and near bushes.

H. pyramus. There is probably only one species in this genus, although some authors presume two or three. — **pyramus** *F.* (102 B g) is the name of the Brazilian form the ♀ of which has only a narrow hemo- *pyramus*, chrome band of the forewings, and on the hindwings a faint red median cloud at most. I took this animal in the very southernmost part of Brazil. To this ♀ with totally or almost totally brown hindwings belongs the ♂ form having broad brown wing-bases on the fore- and hindwings. — **thysbe** *Dbl.* and *Hew.* (102 B h), further- *thysbe*, more, is the northern form with quite red forewings (except the apical part) and with also more red in the hindwing. In the forewings hardly the outermost base is yet dull brown, and I possess ♂♂ from Colombia in which the darkening of the wing-base is absent altogether; this form flies from the Amazon in the whole of the northern parts of South America. — **rubra** *Kaye*, from Trinidad is one of those rather widely spread *rubra*, intermediate forms the ♂ of which has the forewings of *thysbe* and the hindwings of *pyramus*, described already by STAUDINGER without denominating them. — Larva green, with white ripples, in the middle strongly thickened, only on the sides small stunted spines and on the head 2 long branched horns; no lateral stripe. It lives on *Urvillea* *ulmacea* and rests, like an *Apatura*-larva, with drooping head and the horns placed upon the spot where it lies. After 3 or 4 weeks it turns into a green, white-rippled pupa of about the shape of an *Araschnia* *prorsa*-pupa, issuing the butterfly after some days. The butterflies are found everywhere in tropical South America, occur in great numbers in some years and are fond of wet places on the road and of the banks of brooks where they are sometimes met in numbers together; when being chased up they flutter on a neighbouring twig of a bush where they wait until the danger has disappeared. According to the district where they fly, we find transitions to the form described first so that we could give many denominations.

Group **Limenitidi**.

The Limenitidi which do not occur in Africa and Australia, but which are otherwise spread over all the temperate and warm regions of the globe, show a special liking for a black upper surface traversed by a white postmedian band and for a variegated under surface. Almost only where mimetic influences have destroyed the original design of colouring or where there is an overlayer of metal colours, we notice thorough deviations; but also in the latter case, e. g. in *Dynamine*, the original colour penetrates again in the ♀♀ in case they lack the metal colours. The *Dynamine* which we have, according to the catalogue-works, been treating of after the *Catagrammidi*, ought more correctly to be placed here *). — The larvae of the Limenitidi have peculiarly reduced spines, since a number of the originally present spines disappear later on, while some few others grow into paired spinous clubs or into not paired cones. Only the *Dynamine*-larva deviates

*) Anatomically they stand rather isolated. The extremely long penis and saccus are absolutely apaturoidal, the robust uncus limenitoidal, and the magnificently formed valve is, with respect to the structural boldness only rivalled by some *Argynnidi*. (H. FRUHSTORFER.)

from this type, as it is in the habit of eating into buds, the anterior part of the larva being, therefore, smooth in order not to be hindered when boring its way. The pupa is characterized by an appendage on the back, which has been described more exactly in the different genera; the head without any proper tips, but sometimes with peculiar wing-appendages, the latter, however, mostly in Indian species. The butterflies are fond of forest-roads on which they flutter up and down sailing by jerks; they are mostly excellent flyers and visit wet places on the road and the banks of brooks, some come to the bait, many like also flowers.

49. Genus : **Adelpha** Hbn.

This polymorphous genus is surpassed, as to the copiousness of species, only by few other genera and must undoubtedly be regarded as the most multiform genus of the *Limenitidi* of the whole globe. As to the number of species it is excelled only by the neotropical genera *Heliconius*, *Actinote*, *Phyciodes* and, eventually, the Indo-Australian *Neptidi*.

The *Adelpha*, however, are not alone conspicuous by their copious species, but they presumably also beat all the other neotropical genera of the Nymphalidae by their abundance of individuals. They are reckoned to the characteristic landscape butterflies that are to be found most anywhere, just like the *Neptidi* on the Indo-Australian soil.

Structurally they are so nearly allied with the genus *Limenitis* that thorough differences cannot be brought into prominence at all; but they have less hairy palpi and thinner forefeet of the ♂♂. They also all have hairy eyes, whereas in the Indian allies there are alternatively rows of species with hairy and hairless eyes.

The branching off of the subcostal veins is exactly like in *Limenitis*; also here the second and third veins are, at their origin, for a short distance lying close to the main vein. The cell of the forewing is always closed by a fine, somewhat bent posterior discocellular connecting the median either aslant or vertically, shortly after the second vein; the cell of the hindwing is open. The precostal is bent distally and stands exactly at the origin of the subcostal. — The forefeet of the ♂♂ are very fine and thin, with scales. Tarsus $\frac{2}{3}$ of the tibia which is but a little shorter than the femur.

In the veins of the forewings some species (*lara* Hew., *isis* Drury, *epione* Godt.) differ by the second subcostal vein arising *after* the cell-end. These species are also quite differently coloured, but they agree well with the type in all the other characteristics so that only a subgeneral separation might be permitted.

In spite of the manifold species most of the *Adelpha* have the same typical habitus and the scheme of markings by which they are recognizable at first sight. Only the above mentioned species, that also differ in the veins, are of entirely deviating colours and also habitus: *A. lara* and *isis* have a carmine transverse band across the black forewings, *epione* a white one. The greatest part of the *Adelpha*, however, has on a blackish-brown, dark-striped ground either an orange-yellow or white longitudinal band varying often, decreasing in size or dissolving into spots, or disappearing altogether on one wing. Often the band of the forewing is orange, that of the hindwing white, thus varying in the most manifold way and still adhering to the general type.

The position of the orange-coloured preapical spot of some series of species is of special importance for the grouping of the species, but all the characteristics are still fluctuating, especially also the reverse side the strange striation of which varies not only according to the geographical situation, but also temporally and individually. Except the *Phyciodes* and certain *Euthaliidae* there is, therefore, hardly any genus of the Rhopalocera offering greater difficulties to the systematical and synoptical treatment, than this genus. Moreover, also the anatomy of the sexual organs in allied species issues but uncertain clues. The clasping-organs are entirely limenitoid and, in their large outlines, approach those of the genus *Pantoporia* (*Athyma*) in such a way that, according to the state of our present, rather still primitive knowledge, it would be quite impossible to ascertain where organs or photoes of them belong to, which are not denominated.

According to about 60 species and forms I examined there are two principal groups distinguishable:

α) Valve with dorsal appendage which may be rudimentary or, in all the intermediate stages grows up to $\frac{1}{3}$ of the length of the valve.

β) Valve without dorsal appendage.

The first group is partly combined with an extremely long, narrow and partly sharp-pointed uncus, but the shape of the uncus varies in the other species from a sharp, nicely shaped, slender and bent point, up to broad clumsy appendages. The valve has always a dorsal groove already noticed by GODMAN and SALVIN, and is mostly ventrally dentate. There are, however, all the transitions possible up to entirely unarmed valves being then formed especially athymoidal. The valve may be simply cylindrical or ventrally uncommonly expanded, and beside slender forms with an obtuse end there exist also nearly square ones with 2 or 3 small acicular teeth (resembling a *Limenitis procris* from India and Ceylon). Penis as a rule short, obtuse, but there are also species with extremely pointed, unciformly curved end. Saccus expanded in the shape of a spoon. Valve

sometimes with very long hairs, occasionally also only with short bristles, the basal or subbasal cone always with bristles or warts, armed.

The larvae of *Adelpha*, as far as they have become known, generally resemble the larvae of *Limnitis*; some have besides branched spines, in others they are altered into short hairy caruncular cones. The head is set with short spines. The pupae are, according to Dr. W. MÜLLER of a peculiar shape, with 2 horns on the head and broad wing-edges, mostly of brown colour with more or less metallic lustre.

According to MICHAEL, *Adelpha* like to rest on leaves or on the soil with their wings spread out, being the most common *Nymphalidae* that enliven the forests in the most conspicuous manner.

The floating way with which the *Adelpha* fly, according to Dr. HAHNEL, is one of the most elegant forms of motion, jerking only little with somewhat convex wings and still easily descending from the height and reascending just as easily. They never fly, however, for a long time, but continually settle down for a short rest on the leaves high up in order to fly then again over to a neighbouring twig.

On the Upper Amazon, some species of *Adelpha* are in the habit of widely spreading their wings when at rest, and this behaviour is imitated by *Megalura*, small Erycinidae and Hesperidae, while some *Papilio*-species with which they are always found together, such as *lycidas*, *varus*, *crassus*, and *sesostris* are sharply contrasting with them by their dark exterior and closed wings.

Adelpha are constant frequenters of the crowds of day-butterflies meeting day by day at the banks and gathering down from the twigs at a very sunny spot, in the midst of *Eunica* and *Megalura*. They also came to the fecal bait placed on leaves by Dr. HAHNEL near Pebas, together with *Pyrrhogyra* and *Temenis*.

Dr. HAHNEL once also observed an *Adelpha* near Obidos coming frequently to a banana-bait prepared by him. It was, however, constantly ambushed by a greedy lizard which in spite of its clumsy feet rushed furiously towards the *Adelpha*. The butterfly made its escape by flying high up and settled on a leaf. But whenever, after some time, it was enticed by the deceptive bait and flew down again, the enemy made a new attack. This having recurred frequently for about 10 times, the lizard at last gave up molesting any further the *Adelpha* which had gained quite an agility by this experience.

Little is known of the vertical distribution; the *Adelpha* are, however, preponderantly inhabitants of the plains. Some species are, nevertheless, entirely alpine, so e. g. *olyntia* occurring in Colombia up to an altitude of 2500 m and being never met below 2000 m. One species was yet observed at an altitude of 2800 m on the volcano Irazu in Costa Rica. In Bolivia *A. aricia* is, according to Mr. FASSL, the highest-flying species living in the same altitudes. The *Adelpha* called „sisters“ by the Americans, are spread uninterruptedly from Mexico to southern Bolivia and at the Atlantic coast we meet them from the West Indies (Trinidad) to the southern parts of Brazil. The Central American region with 31 species is especially abundant, on the Amazon there are 13 species found, in Rio Grande do Sul about 7. The fauna of the Andes is most peculiar.

Two groups of species which were noticed first by FELDER: cell of the forewings short = *Adelpha* Hbn.; cell of the forewings elongate = *Heterochrona* Bsd. *).

A) Group of Species *Adelpha*.

a) Only one subcostal vein before the cell-end.

A. isis. Easily recognizable by a red oblique band on the forewings which varies also in extent especially in the ♀ according to the locality. The species is confined upon Central and Southern Brazil, everywhere very rare. If we consider specimens from Rio de Janeiro to be typical (**isis** Drury), the luxuriant *isis*, race from Espiritu Santo with entirely red forewing-cell may be separated as **divina** Fruhst. *divina* is especially conspicuous by an elongate red basal spot of about 1 cm width, above the submedian of the forewings. This red spot is absent in the form from Rio as well as in the distinct race occupying Sa. Catharina and described as **pseudagrias** Fruhst. (108 f as *isis*). *pseudagrias* is characterized by the red subapical transverse band of the forewings being strongly narrowed, and instead of three reddish transverse bands we notice in the cell of the forewing of the ♂ only a red round dot. This dot is also present in the ♀, but above it there lies yet a rudimentary band. *pseudagrias* thus presents itself as a melanotic form of the lighter races of the more northern districts of Brazil reminding us thereby of the likewise dark *Agrias claudiana* Stgr. from Sa. Catharina which also differs by its reduced red colour from the lighter and more richly coloured *Agrias claudina* Godt. (= *anetta* Gray) occurring in Rio de Janeiro. Claspings organs characterized by the valve with extremely long bristles and the beautiful contour. A broad base is followed by a cylindrical distal part being ventrally distinctly dentate. The dorsal appendage irregular, tapering off considerably towards above. Point of the uncus ventrally thickened.

*) Anatomically there are also 2 series of species distinguishable. They, however, do not agree with those based upon the structure. Group A) with clunicula, a dorsal appendage of the valve. B) without clunicula; comprising but few, though the most magnificent species of the genus.

lara. **A. lara** replaces *A. isis* in Venezuela and the region of the Andes. It differs from the Brazilian *isis* chiefly by the absence of cellular red spots on the upper surface of the forewings, while the under surface is recognizable by yellowish-brown cell-decorations instead of red ones. Two territorial forms: **lara** Hew. with a regular red transverse band on the forewings which is distally bent out convex hardly perceivable. The under surface more violet, always without the black median band in the anal part of the hindwings. The ♀ is only slightly larger than the ♂, ♀ somewhat lighter brown and also beneath somewhat paler than the ♂. Venezuela. — **mainas** subsp. nov. (108 f as *lara*) is found from Colombia to Bolivia along the range of the Andes. ♂: the red band distally more irregular. The under surface with a pale oblique band being, however, magnificently rouged at the costal and anal end. The ♀, of which I examined a specimen from the Rio Negro, stands in the same relationship to the ♂ as the ♀ of *lara*. Claspings organs of about the same structure as in *isis*. Valve set with just as long bristles, but the clunicula more uniform with a broader periphery. Point of the uncus without medial thickening. Valve more slender in its outer parts. The differentiation is, however, still rudimentary and confirms much rather that *A. lara* belongs to *isis* than that they are specifically different. Median band of the hindwings only streak-like, but always distinct. Peru, Bolivia; an intermediate form also in Ecuador, nowhere rare.

β) Two subcostal veins before the cell-apex.

agilla. **A. epione**, the only species of the whole genus with a pure white transverse band of the forewings. Two areal forms: **agilla** Fruhst. (108 e as *epione*) occurs along the Andes from Colombia to Bolivia from where the figured specimen originates. The width of the brown median band on the under surface of the hindwings varies regardless of the locality. — **epione** Godt. *), a smaller form with much narrower white band on the forewings and prominent white small anteterminal spots on the under surface of the hindwings. In my collection from Espiritu Santo, but occurring also near Rio de Janeiro; in STAUDINGERS collection there are ♂♂ from Casa Branca in the State of Paraná.

eponina. **A. eponina** Stgr. An interesting species the white band of which begins to dissolve already towards the costal margin and to change into greyish-brown. Under surface especially characteristic by vast greyish-violet parts. Colombia, Cauca Valley. — **volupis** subsp. nov. is a magnificent form from the Rio Aquaca Valley, from an altitude of 2000 m in the Western Cordilleras of Colombia, with considerably narrowed white decorative band on the forewings being extended only as far as to the posterior median where it disappears already. Also on the under surface the white bands begin to recede what is especially recognizable by the reduction of the white median band.

hypsenor. **A. hypsenor** Godm. and Salv. (108 f misprinted as *hypsinia*) has so far been known for certain only from the Province of Antioquia, the Cauca Valley in Colombia. FASSL discovered it at an altitude of 2000 m in the Rio Aquaca Valley (Western Cordilleras). The under surface resembles that of *A. mesentina* (108 e) except that the red spots are replaced by yellowish-brown ones. The ♀ is larger, on both the surfaces lighter brown than the ♂, with a somewhat broader white oblique band. *hypsenor* already forms the transition to the group with ochre-yellow bands on the forewings to which

sophax. **A. zalmona** belongs. There are two local forms to be mentioned: **sophax** Godm. and Salv. (108 d) from Costa Rica, Panama and some districts of Colombia. Under surface with narrow greyish-violet subbasal band of the forewings, and **zalmona** Hew. from Colombia without exact habitat, with considerably broader band of the hindwings.

melanthe. **A. melanthe**, a magnificent easily recognizable species with nearly double as broad dark chrome-yellow belt of the forewings, as *sophax*. Three geographical races: **melanthe** Bates with two white dots in the forewing-cell. Central America from Mexico to Panama in sparsely timbered woods at an altitude of 600 to 1000 m. — **melanippe** Godm. and Salv. with narrowed and darkened yellowish band of the forewings. Colombia. *spruceana*. — **spruceana** Bat. with still more narrowed median band and, like *melanippe*, without white cellular dots on the forewings. Ecuador. Claspings organs still entirely of the type of *Adelpha isis-lara*, valve basally somewhat narrower, ventrally less convex prominent, clunicula growing somewhat more slender towards above. Point of the penis more sharply curved.

chancha. **A. mesentina**, a rather rare, very characteristic species with reddish-ochreous area of the forewings. Only two ramifications with not very abrupt partings: **chancha** Stgr. (108 e as *mesentina*) with broadened black longitudinal bands on both the surfaces of the hindwings. Peru. — The name-type is based on a specimen with a shortened reddish-brown band on the forewing: **mesentina** Cr. **) being beneath somewhat paler than the Andine form. Cayenne, Surinam, Amazon. Also from Venezuela and Ecuador, in the Tring-Museum.

B) Group of Series Heterochroa.

irmina. **A. irmina**, a common species of the ochreous group of the great *Heterochroa*-section of the whole genus. Relatively large with steep median band of the forewings. Under surface resembling that of *A. irma*, but with white drops on the hindwings. Three geographical branchings: **irmina** Dbl. (108 f) varying according to the

*) Valve basin-shaped, basally ventrally expanded, armed with 4 spines. Clunicula black, pyramidal, very high; valve somewhat more slender in *agilla*.

**) Valve boldly shaped, ventrally set with 12 to 15 teeth, besides with a dorsal protuberance, clunicula with extraordinarily broad base.

season. One form of the rainless period in January, being somewhat faded beneath, and specimens with more pronounced markings, of the rainy months (June, July). Venezuela. — **fumida** Btlr. is beaten in size by *irmina*, ~~cecarada~~, the narrower longitudinal band of the forewings being more acutely angled, too. From Eastern Peru. — **wilhelmina** Fruhst. Smaller than *irmina* Dbl. and Hew. from Venezuela, above darker, the ochreous longitudinal band more stragulated on both the surfaces, considerably narrower. Under surface: forewing with larger white spots. Hindwing with much narrower white maculae. Oblique band of the forewing darker, more narrowly confined. Hindwing in the subanal region lighter, more spotted in yellow. Bolivia. Claspings organs of the habitus of *A. alala*, entirely different from the groups of *A. isis* and *A. erotia*. Valve remarkably short with 2 or 3 exterior teeth, but without any ventral ones. Clavicula high; narrow. Uncus plain. Point of penis not sharply bent upwards, but nearly straight.

A. irma inhabits Peru and Bolivia as **irma** Fruhst. (108 c). Upper surface similar to *boreas* Btlr. and *irmina* Dbl., the ochreous oblique band, however, proximally more widening and the distal spot at the anterior median nearly isolated. Under surface: band of the forewing steeper than in *boreas*. Hindwing more roundish, with 3 whitish-violet median transverse bands, the outer one of which projects the furthest into the wing-centre. *irma* thereby approximates *irmina* Dbl. from which it is, however, immediately distinguishable by the subdued colours of the bands being, besides, also narrower. Peru: Pozuzo, reaching an altitude of 2000 m near Carabaya. — **nadja** Fruhst. Ochreous band of the forewings more extensive than in *irma*. Hindwing pierced by a magnificent black submarginal band appearing only obsolete in specimens from Peru. Under surface: yellowish oblique band of the forewings broader, lighter, all the bands of the hindwings being also more violet and broader. Bolivia. — Genitals considerably differentiated from those of *A. irmina*. Valve entirely more slender, without any spines, but with very long bristles. Point of penis curved.

A. boreas. An Andine species and distributed, from Colombia to Bolivia, upon 4 areal forms: especially beneath most variable in the extent of purple or violet parts with metallic lustre. — **tizona** Fldr. (108 d) has two distinct small yellow preapical spots on the forewings. FASSL found the ♀ on the Upper Rio Negro, the under surface of which is more fallow, the yellow area of the forewings broader, likewise paler. — **tizonides** Fruhst. (108 d) beats *tizona* in size; with roundish hindwings and indistinct reddish-brown apical spots, very broad and distally only faintly dentate subapical band of the forewings. Under surface of hindwings traversed by a narrow brown postmedian band. West Colombia and Cundinamarca. — **opheltes** subsp. nov. was recently again discovered in Panama from where GODMAN had figured it already as *A. tizona*. Band of the forewings above distally only unnoticeably dentate. Under surface with broader brown postdiscal band than *tizonides* and reduced transectular stripes. — **verenda** subsp. nov. (108 c) differs from *tizona* by darkened proximally deeper incised oblique band of the forewings. The under surface exhibits a narrower transverse band of the forewings and more whitish edging of the hindwings. Peru, common, preferring altitudes of 1500 to 2000 m. — **boreas** Btlr. equals *A. irma* (108 c) in size; under surface lacking the violet hue, the oblique band of the forewings sharply set off, paler than in *verenda*. Bolivia, also on the Upper Rio Negro.

A. ximena Fldr. The most imposing species of the group with ochreous area on the forewings, which expands similarly as in *A. mesentina* (108 e) and from which three subapical maculae extend in the shape of a band as far as to the costal margin. Under surface resembling that of *tizona* Fldr. but without the transverse band running through, which is replaced by two rows of roundish light spots. Peru: Pozuzo, not rare.

A. salmoneus inhabits Central America from Guatemala, and Colombia. We may separate 2 geographically split branches. — **emilia** Fruhst. (108 c), a smaller form with more imposing greyish-violet bands than *salmoneus* (108 e) exhibits. Guatemala to the Cauca Valley. — **salmoneus** Btlr. (108 e), a more magnificent race with more streak-like bands on the under surface. Eastern Colombia also from Cundinamarca in the Tring Museum.

A. colada Fldr., an extremely rare species of which only the type is known and which I was enabled to examine thanks to the obligingness of the officials in the Tring-Museum. Upper surface about similar to that of *salmoneus* (108 e), while the under surface approaches more *boreas* Btlr. and still more *A. irma* Fruhst. (108 c). Bogotá (Colombia).

A. saundersi, the most luxuriant species of the series with brownish-yellow bands. The under surface is most imposing with its magnificent reflections of silvery brightness reminding us of *Argynnis adippe* and being unparalleled among the *Adelpha*. According to WEEKS there is said to be a local race in Colombia with white drops on the under surface instead of those of metallic lustre. — **saundersi** Hew. is described from Ecuador and also found in Colombian districts, where FASSL took single specimens near Pacho at an altitude of 2200 m. — **leutha** subsp. nov. stays smaller than *helepecki* (108 d) and has a lighter yellow under surface, very much reduced reddish-brown longitudinal bands and obsolete silver-spots of the anal part of the hindwings. Peru, Cushi from 1820 m. Type in the Tring-Museum. — **helepecki** Weeks (108 d) is only lying before us from Bolivia. The ♀ was collected by FASSL near Coroico. It differs from the ♂ only by a more pronounced black spotting on the under surface of the hindwings.

leucophthalma. **A. leucophthalma** forms the transition to a charming, sharply confined group with ochre-yellow band of the forewings and white discus of the hindwings. — **leucophthalma** Latr. (107 f) found in Peru, the western slope of the Andes near the Pacific Ocean near Guanamarea, (according to the statement of the author from the year 1809). The form is figured according to a ♂ from Cundinamarca in the Tring-Museum. The band of the forewing is beneath pale-yellow, and on the hindwings the white spots recur frequently. — *mephistopheles*. **mephistopheles** Btlr. from Colombia comes oftener to Europe than the type of the name. There are also in Colombia several local races. BUTLER based his type upon relatively small specimens and STAUDINGER also figured a ♀ stunted in its habitus. There are, however, much larger specimens lying before me without exact statement of their habitat. — *tegeata*. **tegeata** subsp. nov. with paler band of the upper surface, but remarkably darkened under surface of the hindwings. A charming form is found at the volcano Irazu (Costa Rica) in about 2800 m height, which was mentioned already by GODMAN, but which has remained unknown to me in nature, just like ♂♂ from Nicaragua and Panama.

zina. **A. zina** the differences of which compared to *leucophthalma* are to be noticed from our figure of *zina*. *restricta* (107 f), is distributed upon 3 geographical subspecies: **zina** Hew. with elliptic white discus of the hindwings composed of 4 narrow maculae, and **leucacantha** subsp. nov. in which the white disk consists only of 3 components and is almost circular. The ochreous longitudinal band of the forewings lighter and broader than in *zina*, under surface paler with more white and yellowish markings. Both the forms in my collection from Colombia. — *restricta*. **restricta** subsp. nov. (107 f). Approximates *leucacantha* by the likewise more roundish than acute reflection of the hindwings. The under surface of all the wings darker reddish-brown, the longitudinal band of the forewings considerably narrower, more sharply set off, the violet spots more pregnant. Cananche, Cundinamarca June 1903. Claspings organs of the plainest structure; valve neither spined nor hairy, clunicula in the shape of an isosceles triangle, point of uncus not thickened, neat; point of penis not chitinized.

lacina. **A. justina** inhabits Venezuela, Colombia, and Peru, occurring everywhere in distinctly separated territorial races. The white spot of the hindwings always appears elongated in the shape of a band. — *lacina* Btlr. *) from Guatemala to Panama, occurring as a great rarity, has a narrower beautifully light-yellow band of the forewings. — *justina*. **justina** Fldr. differs from *A. zina* by a larger and lighter yellow apical spot of the forewings. Colombia, rare. — *justinella*. **justinella** Fruhst. ♂ deviates from *justina* Fldr. from Colombia by the blackish-dusted and also darkened, much narrower yellowish band of the forewings and the elongated white discal spot on the hindwings, which is, however, greatly reduced in width. — In STAUDINGER's collection there are also specimens without white reflection of the hindwings (*maira* form. nov.); habitat Venezuela. — *praevalida*. **praevalida** subsp. nov. Yellowish longitudinal band of the forewings lighter, narrower. Subapical dots much smaller, the white discal spot of the hindwings, however, very much elongated and broader. At the costal margin there appears but a small macula as occurring in *leucophthalma* Latr. Hindwings beneath with a white band traversing the whole centre and being twice interrupted. Peru: Cuzco.

olynthia. **A. olynthia**, one of the best-known and most easily recognizable species characterized by uncommonly narrow, ochreous or reddish-brown row of spots contrasting delightfully with a purely white longitudinal stripe of the forewings. The under surface is either preponderantly faded yellowish-brown (106 a *levicula*), but only in the Colombian races, or it changes into reddish-brown (*olynthia* 106 a) which colour increases in intensity the more we go to the south. Claspings organs distinguished by the valve being without spines and set with very long hair, and by a remarkably high, narrow clunicula; point of tegumen relatively broad. — *olynthia* Fldr. is very common in Colombia and, according to the locality and season, varies there somewhat in the width of the white stripe of the forewings. This stripe is the narrowest in a ♂ from Villavicencia, exhibiting at the same time the most imposing and darkest red-yellow spots on the forewings. — *levicula*. **levicula** subsp. nov. (106 a) has broader, but paler yellow components of the band of the forewings and another second pair of transcellular yellowish spots distal to the cell-apex which are absent in typical *olynthia*. Beneath more reddish instead of greyish-yellow as in Muzo- and Villavicencia-♂♂, with purer and finer colours. From Pichinde in Colombia from an altitude of 5000 feet. Type in the Tring Museum. — An incidental aberration is introduced as *inachia*. **inachia** form. nov. having been thus denominated by STAUDINGER in his collection. The white median zone of the forewings is absent and the reddish-brown band of the forewings is uncommonly broadened. — *olynthina*. **olynthina** subsp. nov. shows the narrowest white median band of the forewings among the known *olynthia*-races. *theaena*. The under surface resembles yet the Colombian ♂♂ by pale yellowish-brown colouring. Ecuador. — *theaena* subsp. nov. (106 a as *olynthia*) is very common near Cuzco in Peru. Like *levicula* it shows a pronounced row of transcellular maculae of the forewings proximal to the three usual preapical spots. The white stripe of the hindwings decidedly broader than in *olynthina*. Under surface with reddish-yellow or reddish-brown spots, all the white and violet maculae more prominent. — *zopyra*. **zopyra** subsp. nov. is found at the Chanchamayo, Peru, and near Cushi in the Province of Huanaco in 1900 m height. It resembles *theaena* except that the ultracellular, reddish-yellow double-spot on the upper surface of the forewings is absent like in the Colombian forms.

valentina. **A. valentina** spec. nov. is a considerably modified species with conspicuous and progressive extent of the reddish-yellow and white bands of the upper surface. The latter sometimes exhibits a proximal blue

*) There are 2 ♀-forms: *a*) with relatively narrow complete white band, *β*) with white area of the hindwings being separated at the anterior radial. Beneath, both the ♀-forms lying before me from Orosi (Costa Rica) from an altitude of 1200 m, differ from the ♂♂ by more pronounced violet-grey submarginal spots.

reflection. The double-spot beyond the cell also prominent. Under surface intensively reddish-brown. From the Rio Negro and along the Andes from Colombia to Bolivia *).

A. alala is considered as the most common *Adelpha* in the region of its occurrence. According to HAHNEL it is met everywhere in open places sitting together in groups, apart of the society of the likewise common *Megalura*, but like them always with their wings spread out. The species is extremely variable, and beside its sensitiveness to territorial influence we know for certain that it also succumbs to metagenesis. We know specimens with fine reddish-brown bands on the under surface, beside such with pale, faded colours as seen in *ehrharti* (108 a), thus showing the typical colouring of the dry season. The uppersurface is also subject to various modifications. Especially the extent of the reddish-brown submarginal band is most variable. It may either traverse both the wings as a series of coherent spots (*completa*), or be completely present only on the forewings (*cora*). Furthermore there are specimens with only 3 or 4 reddish-brown subapical spots (*alala*, *prae-caria*) and, finally, such without any reddish-brown maculae at all being replaced by white ones (*albifida*). The one white-speckled form is presumably also a production of the rainless period. According to the few documents I was able to examine, the valve of the clasping-organs seems also to be subject to slight variations of its contour. The valve is short, with nearly square base and steeply raised or cut off end (*albifida*) or obviously elongated with a more slender end tapering softly. A sharp double-point is common to all the forms. The medial dorsal tooth stunted, the most insignificant in *albifida*, the broadest in *cora* from Peru. The uncus itself remains remarkably slender, pointed and is, in that respect, only beaten by the forms of the group of *A. zina* and *A. irmina*. **alala** Hew., the typical form, without the reddish-brown submarginal band on the upper surface, comes from Venezuela, the white median zone sometimes relatively broad (*alala*), occasionally very narrow (*titia* form. nov.), the transcellular white small comma-spots always pregnant. — **completa** Fruhst. occurs in Colombia. The yellowish-brown bands are less developed than in *alala*, and we have even a form without reddish submarginal spotting of the hindwings, **prae-caria** form. nov., being denoted in 108 a as *completa*. The specimens I have at hand are immediately recognizable as such of the dry period, with faded under surface, and such with sharply prominent reddish-brown bands of the under surface. The specimens being coloured the most brightly beneath are lacking the ochreous band of the upper surface of the hindwings. — **negra** Fldr. is a form from the Upper Rio Negro reminding us of *titia* and *prae-caria* and exhibiting a narrow white median band of the hindwings. The yellowish anal spot of the hindwings appears somewhat smaller than in *titia* as well as the subapical maculae of the forewings. The under surface of all the wings somewhat paler and more faded than in the form of the rainy period from Venezuela. — **ehrharti** Neubgr. (108 a) was based upon specimens without reddish-yellow decoration of the upper surface of the hindwings. We figure a specimen from Paramba, Ecuador, 1200 m, collected in April during the dry period, with all the marks of the generation of the rainless period. Several more ♂♂ from Ecuador, in FRUHSTORFER's collection, are just as brightly coloured and distinctly striped as the typical form from Venezuela. White median band only little broader than in specimens from Venezuela, somewhat broader than in those from Colombia. The distal subapical maculae more pregnant and darker than in *completa*, but terminating already at the anterior median vein. — **cora** Fruhst. analogous to *ehrharti*, but immediately distinguishable from it by the yellowish submarginal band reaching, on the forewings, from the costal margin as far as into the anal angle. Under surface darker than in *ehrharti*, white median band distally more extensively bordered in yellow. Pozuzo (Peru). — **albifida** Fruhst. Peru has a more extensively white median band than *completa*, the distal subapical row of 5 dots white instead of yellow, besides there are not any traces whatever of a yellow submarginal band on both the wings. Under surface, especially in the apical area of the forewings, more extensively spotted in white than in any allied *alala*-form. — **privigna** subsp. (or form.) nov. is a form or race analogous to *albifida*, with considerably narrower white area on both the wings. Habitat presumably Peru or the Upper Amazon. — **negrina** subsp. nov. (108 a) is a form being common in many parts of Bolivia. Beside it a local race, **fillo** Fruhst., is found in Western Bolivia and Argentina, presumably at another season. Resembling *ehrharti*, with yellow bands interrupted ad the anterior median vein, under surface of the wings, however, lighter than in *ehrharti* and *cora*, the subapical white spots of the forewings considerably smaller and the white median band much narrower than in *negrina*. The ♀ of *negrina* was discovered by FASSL in Bolivia. It is somewhat larger and of rounder wing-contours than the ♂, exhibiting somewhat more extensive reddish-yellow subapical maculae of the forewings.

A. corecya, from Colombia to Ecuador, occurring beside *A. alala* from which it differs by the broader hindwings projecting with an obtuse tail. The white zone of the forewings decidedly narrower, anteriorly reduced. The small transcellular spots are standing in one row above the median band and are always effaced. — **corecya** Hew. (108 a) was set up by its author according to much smaller specimens than the one we present. The specimens also vary beneath according to the seasons and altitudes from a lighter colour to darker grey. FASSL found *corecya* still at an altitude of 2200 m in the Eastern Cordilleras of Colombia. The small form as well as the large form are included in the so-called Bogotá-consignments. — **collina** Hew., an excellent territorial form with considerably narrowed reddish-yellow submarginal band of the forewings and posteriorly reduced white

*) Valve set with sharp spines, narrower and longer than in *A. olynthia*, clunícula, however, much broader and shorter, uncus more spadiceous instead of simply pointed as in *olynthia*.

median zone of the hindwings on which we miss the reddish-brown anteterminal region of the upper surface, *aretina*, so that *collina* looks again very similar to certain *A. alala*. — *aretina* Fruhst. has still narrower white bands than *collina*. Both the forms are found in Ecuador.

aricia. **A. aricia**, a rare and magnificent species, apparently met only in Peru and Bolivia. Two territorial races. *aricia* Hew. (108 a) of which we figure the characteristic under surface occurs in Bolivia. The upper surface is adorned with a much broader reddish-yellow band than *serenita* subsp. nov. of which we figure the upper surface by the name of *aricia* (108 a). Its under surface exhibits less bright reddish-brown bands and spots than the larger type from Bolivia. Habitat Peru.

epidamna. **A. epidamna** Fldr., an extremely rare species of which but few specimens are known, one of them in FRUHSTORFER's collection *). It is pretty sure that *epidamna* replaces the preceding species in Colombia. It is, however, mentioned separately here, because the reddish-yellow submarginal band of the forewings is not rectilinear as in *A. aricia*, but it turns out distally in the shape of a crescent between the radials and the anterior median, and also disappears already at the central median. The under surface shows more prominent black crescents distal to the reddish-brown median band, and purer white small submarginal spots.

A. cocala commences the large group of species with yellowish-brown band of the forewings and white area of the hindwings. The series of species then gradually turns into such forms in which a little white appears on the forewings, and finally into forms where the yellowish-brown is isolated only to remain as a separated apical spot. All the three combinations of colours have a relatively obtuse uncus and a valve with large medial dorsal tooth the shape of which differs in the single species. The clasping-organs of *A. cocala* are characterized by basally remarkably thickened uncus, valve short with strangely little developed dorsal appendage, the end with sharp teeth. *cocala* is one of the most widely distributed Adelphes; we meet it from Honduras *lorzae*, to Bolivia and, on the Atlantic part of the Continent from Guiana to Sa. Catharina. — *lorzae* Bsd., the northernmost branch of the race, is by mistake mentioned as *A. urraca* by GODMAN, in the Biologia, from Honduras in my collection and distributed as far as Panama, is distinguished by the broader white median band of the hindwings and paler yellow middle area of the forewings. — *lorzina* subsp. nov. from Colombia has already *fufina*, decidedly narrowed yellowish-brown and white area on both the wings. — *fufina* subsp. nova, another local form from Colombia, shows a darker yellow part of the forewings without any traces of a whitish hue at the *urraca*, submedian. The white stripe of the hindwings less extensive than in *lorzina*. — *urraca* Fldr. (107 a) of which we figure a ♀ specimen, is a luxuriant form beating the type from Surinam by broader yellow and white areas. Under surface distinguished by most prominent white and violet spots. Upper Rio Negro, also at the proper *urracina*, Upper Amazon, e. g. near Iquitos. — *urracina* subsp. nov. (106 c), common in Peru and parts of Bolivia, lies before me also from Mato-Grosso. The bands very much approach the type, but the band of the forewing *suapura*, appears more complete, the whole colouring darker. — *suapura* subsp. nov. (106 c as *sapara*) from Venezuela *cocala*, is a little form with considerably reduced yellow bands of the forewings. From the Suapura River. — *cocala* Cr., common in Cayenne and Surinam, has again somewhat broader reddish-yellow bands of the forewings *riola*, than *suapura*. — *riola* subsp. nov. (106 c as ♂ instead of ♀), from Rio de Janeiro and the State of São Paulo, initiates the interesting Brazilian geographical forms; distinguished by the darkened faded reddish-brown under surface with reduced greyish-violet spotting and most pronounced, anteriorly tapering white stripes of the forewings. In *riola*, of which we figured a ♀ from Rio de Janeiro, we notice in the ♂ and ♀ a white hue *caninia*, at the submedian of the upper surface of the forewings, which, in *caninia* subsp. nov. (106 b as *riola*) projects into the yellow zone already in the shape of a band. Sa. Catharina and to the north as far as São Paulo, *didia*, while in *didia* subsp. nov. from Espiritu Santo the connection with *cocala* is restored by the white being absent in the submedian zone, whereas the whole colouring of the under surface entirely resembles that of the other species from Rio de Janeiro to Sa. Catharina.

A. trinina is confounded in the collections with *A. cocala*. It has a delimited range and is found only from Colombia to Ecuador beside *A. cocala*, as well as in Trinidad. *trinina* differs above by the reddish-yellow preapical maculae of the forewings being either absent or hardly suggested, and beneath by the absence of the white median band of the forewings being replaced by a faded loam-coloured band. The tegumen has a considerably more pointed uncus, the valve remaining also more slender than in *A. cocala*. Besides the medial dorsal tooth projects nearly double as strongly as in the vicarious type. The end of the valve only faintly *fufia*, spined. — *fufia* subsp. nov. (107 b) is remarkable by a dark ochreous, sharply confined band of the forewings *cocalina*, and by white stripes reduced towards the anal angle. Colombia, apparently not rare. — *cocalina* subsp. nov. (106 b) smaller than the preceding one with a more uniform yellowish-brown zone and reduced white stripes *trinina*, of the forewings. Ecuador, Paramba, from an altitude of 1200 m. Type in the Tring-Museum. — *trinina* Kaye was united with *A. velia* by its author, and described and figured as *A. velia trinina* in Trans. Ent. Soc. 1913, p. 555. The ♂ differs from *cocalina* and *fufia* by broadened white median band of the hindwings. Isle of Trinidad.

*) FASSL found a ♂ at the Cañon del Tolima in the Colombian Central Cordilleras.

A. boeotia differs from *A. cocala* by the isolated yellowish-brown preapical maculae of the forewings. The more uniform ochreous zone of the forewings grows lighter towards the submedian and, in a Brazilian race, changes its colour even into a pure white, analogous to the forms of *A. cocala*. Under surface at once recognizable by an expanded whitish median band traversing both the wings. Tegumen with broadened point and valve is likewise basally more robust compared to that of *cocala*. The dorsal tooth more obtuse and bulky than in *A. cocala* and *A. fufia*. Known from Central America to Bolivia and from Central Brazil. - **oberthüri** Bsd. described from Guatemala, is lying before me from Honduras and Costa Rica. Above it resembles *A. davisi* (106 c), though the whole posterior part of the faintly yellowish-brown band of the forewings is white, especially in the ♂♂ from Honduras. — **boeotia** Fldr. (106 c) is not rare in Colombia. The white stripes of the hindwings are, as a rule, somewhat narrower than in **davisi** Btlr. (106 c) which has originally come from Peru and of which we figure a somewhat deviating, remarkably small ♂ from Ecuador. Under surface a little more variegated than in *boeotia*. — **fulica** subsp. nov. differs from *davisi* by distinct reddish-brown subanal maculae of the upper surface of the hindwings, by which it approaches *bocotia* from Colombia. Under surface more intensely reddish-brown. Bolivia. — **fidicula** subsp. nov. is based upon a specimen sent to me by the firm of BANG-HAAS from Espiritu Santo 8 years ago. Excepting the very much broadened yellowish zone of the forewings, it approaches the ♂♂ from Honduras by the white submedian brightening. The preapical maculae of the forewings are very large. Under surface characterized by faded reddish-brown ground-colour being much less strongly overhued in violet than in the Andine vicarious types.

A. heraclea Fldr. is a marked form of *A. boeotia*, or a species nearly allied to *A. boeotia*, which has remained a rarity and has not been found again. Neither in the Tring-Museum nor among the 700 specimens of my collection there are any analogous specimens. On the forewings there is only a subapical punctiform spot. Hindwings somewhat more slender than in *boeotia*, with more prominent yellowish anal spot. The white median band of the hindwings is distinguished by a relatively broad, fiery reddish-brown distal margin. KIRBY in his catalogue brought *A. heraclea* Fldr. in connection with *A. thesprotia* Fldr. The latter species, however, belongs into quite a different group (of *A. melona-arete*), a fact which I was able to ascertain by means of the types placed at my disposal by the Tring-Museum.

A. sichaeus. A magnificent, sharply limited species occurring along the range of the Andes and in some alpine districts of Venezuela. It is in some places common and, especially in Bolivia, always met in series. The species varies but little in the width of the remarkably darkened, beautifully reddish-yellow zone of the forewings. As BUTLER already stated, *sichaeus* shows, especially above, a certain alliance to *A. cocala* Cr. from which it is, however, at once distinguishable by the more ramous white spotting of the under surface of the wings. The structure of the sexual organs makes us also conclude that there are nearer relations to the *iphicla*-group than to the series of *A. cocala*. Tegumen with tender, finely curved point, valve cylindrical, without the basal thickening of *A. cocala*. Clunícula very high, extremely pointy. — **sichaeus** Btlr. The band of the forewing light orange-coloured, broader than in *privata*. Colombia, also mentioned from Venezuela by GODMAN. Found by FASSL on the Upper Rio Negro. The white zone of the hindwings more extensive than in the Ecuador-race. The ♀♀ exhibit a still paler yellow zone of the forewings and beneath enlarged white and violet spots and bands. — **privata** subsp. nov. (106 a) forms a transition from *sichaeus* to *A. irisa* (106 b), and differs from *irisa* by much narrower ochreous longitudinal bands of the forewings and the white median bands of the hindwings being costally and anally greatly reduced. Under surface: the whitish spots are considerably receding and the violet submarginal maculae remain smaller and stand more isolated. Ecuador. — **irisa** subsp. nov. (106 b) inhabits Peru; type from the Chanchamayo. All the bands are moderately narrower than in **leucopetra** subsp. nov. (106 a). Forewing-band considerably darker and nearly as broad again as in *privata* from Ecuador. Hindwing: the white median band likewise greatly expanded and tapering off posteriorly. Under surface: dark reddish-brown with extremely bright, sharply delimited purely white markings, very large reflecting violet maculae and a longitudinal row of 6 roundish, large, almost black submarginal dots of the hindwings. The ♀ was discovered by Mr. FASSL who sent it to me for inspection. Size of the reddish-brown band still more extensive than in the ♂, the wing-contour more roundish, the shape larger. Bolivia.

A. aethalia, by the position of the forewing-band, approaches *A. bocotia* Fldr., while the magnificent under surface approximates much more *A. erotia*. *aethalia* has hitherto been mistaken, because KIRBY not knowing the type brought it into connection with *A. thesprotia* and *A. malea* Fldr., which species, in their turn belong to entirely different groups. The sexual organs differ considerably from those of *A. boeotia*. The uncus is more pointed, distally less strongly curved; the valve anteriorly very much reduced, with sharper point and armed with a greater number of small denticles. The medial, dorsal appendage rests upon a narrower base and raises itself to a more slender point. **aethalia** Fldr. (106 d) is not very rare in Colombia and Ecuador, and is contained in almost every so-called Bogotá-consignment. The under surface exhibits more yellow than *A. frusina* (106 e). — The more southern **metana** subsp. nov. (106 d) is found in Peru and on the Upper Amazon and is figured according to a ♂ from the latter habitat. The yellowish-brown zone of the forewings is proximally deeper indented than in *aethalia*, the white area of the forewings more extensive, the under surface darker reddish-brown. — **frusina** subsp. nov. (106 e) from Eastern Bolivia, the Province of Sara, by its faded under surface

approaches again more the Colombian vicarious type. The white band of the hindwings still more broadened than in *metana*, and on the forewings the beginning of a white hue in the submedian region being especially *pollina*. distinct in a ♂ of my collection from Mato-Grosso. — *pollina subsp. nov.* was recently discovered by LE MOULT in Cayenne. The very light zone of the forewings deeper indented at the cell-apex and the white median band of the hindwings considerably narrower than in *aethalia* from Colombia. Under surface similar to that of *frusina*, but more intensely reddish-brown.

A. euboea might above be easily mistaken with *A. aethalia*, the only thorough difference being noticed in the yellowish-brown zone of the forewings greatly narrowed towards the submedian. The white stripe of the hindwings is also tapering and we nearly always notice an inclination to forming a violet or blue proximal boundary-line whereby a certain analogy is created to the Indian *Pantoporia*; a genus replaced by the *Adelpha* in South America. The ground-colour of the under surface is a beautiful brown with bright violet stripes as we meet again in *A. phliassa* (107 a). Anatomically *euboea* is sharply separated from all the allies by the extremely long, very sharp and much higher appendage to the valve. The valve is, besides, laterally *fabricia*. and ventrally swollen, the uncus formed like the beak of an eagle, slender with distinct point. — *fabricia subsp. euboea. nov.* (106 d) is a form distinguishable from the name-type, *euboea Fldr.*, by smaller size and throughout darker total colouring. *fabricia* has, besides, a distally sharper delimited ochreous band not showing in the anal direction the white hue peculiar of *euboea*. On the under surface the bands of *fabricia* are decidedly narrower. Colombia, without exact habitat. According to KAYE, a similar form occurs in Trinidad. — *hilarcia subsp. nov.* has a reduced more irregular yellowish-brown zone of the forewings and more intensely and beautifully coffee-brown stripes on the under surface of both the wings. Peru, Tarapoto, and from the Upper Amazon. — *mamaea subsp. nov.* is found in Mato-Grosso. The reduction of the yellowish and white bands of the upper surface is still increased as well as the darkening and reduction of all the markings on the under surface.

A. erymanthis resembles *A. euboea* and *fabricia* (106 d), but the white stripes of the hindwings are still more reduced and terminating in the anal direction into a sharp point in the Central American type. *A. erymanthis.* very rare species of which only two forms are known to me: *erymanthis Godm.* and *Salv.* being on the forewings most similar to *A. boeotia* (106 c), the white band of the hindwings being, however, much narrower. Under *adstricta.* surface most approximate to that of *A. aethalia* (106 d). Nicaragua, Costa Rica. — *adstricta subsp. nov.* The light yellowish-brown zone of the forewings broader, proximally running straighter than in *erymanthis*. The white area of the hindwings reduced to a short, extremely narrow, small band terminating at the third median and, thereby, resembling *A. ernestina* (106 b). Colombia. Type in the Museum of Geneva.

A. jordani is an entirely isolated species. Its size very much approximates the small *A. boeotia Fldr.* with which also the position of the reddish-yellow zone agrees the most. The peculiarly bulging stripes of the hindwings, however, distinguishes it from all the allies. Another characteristic mark is especially a black spot in the anal angle of the under surface of the forewings not seen in any of the allies. Two geographically *jordani.* separated branches: *jordani subsp. nov.* (106 d) with remarkably broad bands on the under surface. Peru. — *ernestina.* *ernestina subsp. nov.* (106 b). As to the habitus, smaller than *jordani*, the ochreous median band of the forewings very much darkened, the white median area of the hindwings shorter and narrower, but bordered in the anal angle by a much broader and more distinct dark-blue zone. Under surface: white marking reduced, more faded, forewings with a more extensive yellowish postdiscal region. The brown longitudinal band of the hindwing so characteristic of *jordani* nearly again as broad as in the Peruvian branch. Bolivia, Mapiri. Type in the collection FRUHSTORFER. A ♂ somewhat deviating from it, from Bolivia. San-Ernesto at an altitude of 1000 m, below the 68th degree of western and 15th degree of southern latitude. Collected in September 1900, in the Tring-Museum *).

A. erotia is considered to be one of the commonest species of the Continent. It is not able to offer great resistance to climatic influences, so that it is divided into a number of territorial forms, and besides, it seems to be subject to metagenesis, for there exist enormous specimens with large white spots beneath (*permagna*) beside relatively small ones being only little checkered beneath. There seems to exist also a form of condition independent of time and locality with beginning or advanced white embedment at the end of the yellowish-brown median band in the submedian region of the forewings. The most characteristic under surface is conspicuous by the great number of isolated silvery white spots and the purely white subbasal bands of the hindwings. According to the season and the habitat of the butterflies, the white submarginal maculae are covered by reddish-brown ones (Colombia), or they increase even in size (Surinam, Cayenne) or they are faded (Venezuela). The tegumen is most plainly shaped with the usual, rather sharp point of the uncus, valve with a *deleta.* roundish clunicle (with a dentiform dorsal appendage), exteriorly obtuse, nearly entirely unarmed. — *deleta subsp. nov.* (106 e). The yellowish longitudinal band is in the anal direction, near the submedian, brightened up with white, also otherwise lighter than the following races. The three subapical maculae uncommonly strong;

*) Claspings organs sharply differing from those of *A. erotia*, but without any special marks. Clunicle higher than in *A. erotia*.

the white median area of the hindwings 8 mm broad (4 mm in *erotia*). Under surface very faded, the otherwise yellowish maculae of the forewings almost of a purely white colour. All the longitudinal bands light-yellow instead of reddish-brown as in the Andine allies. Base of the hindwings with purely white extensive stripes. Venezuela, from the peninsula of Patate, collected in August. Type in the Tring-Museum. *delinita* *delinita*, *subsp. nov.* (106 f). The ochreous longitudinal band of the forewings more compact, i. e. more uniformly broad and distally less dentate than in *delita* and *erotia*. Median band of the hindwings, especially considering the size, relatively narrow, distally bordered with ochre-yellow frequently in the anterior part, sometimes also in its full length. Wings of the ♂♂ beneath dark reddish-brown with reduced white submarginal bands. Type from Colombia (Cauca Valley). Quite a similar form is found in Central America from Guatemala to Panama. Specimens from the latter habitat have, according to GODMAN, remarkably much white in the submedian zone of the forewings. — *permagna* *subsp.* (or *form.*) *nov.* (106 e) was found on the Rio Dagua in Colombia. The white hue of the forewings also here sometimes attains a certain extent, but it may almost disappear in ♂♂ from the same habitat. *permagna* beats all the well known *erotia*-races by its considerable size and the more extensive submarginal white spotting of both the wings. *permagna* seems to be distributed from Colombia throughout the whole district of the Upper Amazon as far as French Guiana, for there is a magnificent ♀ lying before me from the latter district, as well as ♂♂ from Marcapata (Peru). — *erotia* *Hew.* (106 e) was described by its author according to a relatively small ♀ from Bolivia and occurs pretty conformably in many parts of Peru and Ecuador. Ground colour of the under surface more reddish-brown instead of loam-yellow as in the Colombian races. The median band of the hindwings variable, sometimes bulged out, and the narrowest in a ♂ from Ecuador. — ♂♂ with white embedment in the submedian part of the forewings, *albina* *form. nov.*, are especially common in the Amazonas-part of Peru where they occur beside gigantic *permagna*. In Ecuador and Peru *erotia* was yet collected in altitudes of 4000 and 4500 feet, it inhabits, however, preponderantly the hot valleys. — *fugela* *form. nov.* is a peculiar, relatively small form reminding us on the upper surface of *A. davisii* (106 c) and *metana* (106 d) by small subapical spots and an especially pale median zone of the forewings, beneath, however, showing all the marks of *erotia* by purely white stripes on light reddish-brown ground. They are possibly considerably differentiated, deviating specimens of a dry period, since beside the type from Obidos another ♂ from Bahia is lying before me. — *uta* *form. nov.* forms an intermediary between *A. boeotia* and *A. sichaeus*. ♂: upper surface very similar to *A. sichaeus*, but with much lighter longitudinal bands of the forewings, with a light-yellow hue especially in the anal direction and being especially distally more strongly indented. The subapical maculae are more isolated. The white median band of the hindwings, by its shape, reminds us more of *A. valentina* *Fruhst.*, being very much strangulated below the broadened costal spot, tapering also in the anal direction where it exhibits a bluish-violet hue. Under surface: all the spots of the median band of the forewings are placed in one vertical row and are not moved proximally at the cell-apex. The violet submarginal spots combined to completer bands, the other violet spots light, the basal bands white instead of grey. White median area of the hindwings more irregular, the reddish-brown submarginal band is absent and replaced by a series of indistinct white effaced spots. Ground colour much lighter reddish-brown. Forewing more roundish, hindwing narrower, more undulate. Bolivia, 1 ♂ collected by A. BANG-HAAS, and 2 ♂♂ from Honduras in the Coll. FRUHSTORFER.

A. delphicola has been described in the famous book of travels: „Two Years among the Indians“ by Dr. TH. KOCH-GRÜNBERG, Berlin 1910, p. 308, the clasping-organs being figured p. 359 beside those of *A. erotia*. *delphicola* is above hardly to be separated from *A. erotia*, the under surface, however, is in many parts so very different that it may be considered as a parallel species of *erotia*, just like *A. aethalia* *Fldr.* and *A. euboea* *Fldr.* being above almost analogous, are also occurring simultaneously. The under surface of *A. delphicola* may easily be mixed up with that of *A. euboea*, while the total colouring of *A. erotia* and *A. aethalia* is very much alike. In substance, *delphicola* deviates beneath from *A. erotia* by the darker, preponderantly coffee- or violet-brown total colouring and by compact whitish bands in the submarginal part of the hindwings instead of the isolated white spots of *erotia*. The subbasal stripes, especially of the hindwings, are not purely white, but beautiful greyish-violet. Tegumen with a broader appendage of the uncus. Valve with extremely slender, unarmed exterior part, while that of *A. erotia* bears 4 sharp points. Clunicle narrow, high, that of *erotia* obtuse and low. — *nava* *subsp. nov.* (106 f) was discovered in Eastern Bolivia in the Province of Sara. The greyish-violet faded under surface makes entirely the impression as if the specimens collected from the end of February to the beginning of April belonged to a dry period. — *praetura* *subsp. nov.* (106 f) was figured according to a ♂ from the Rio Demerara (British Guiana). The yellowish-brown part of the forewings more extensive and darker than in *nava*, the white median band and the subanal spots of the hindwings more reduced. The longitudinal stripes of the hindwings remarkably broad, partly purely white. Widely distributed, in my collection from Surinam (Cayenne), Mato Grosso and from the Lower Amazon. — *delphicola* *Fruhst.* based upon considerably smaller specimens being beneath very much darkened, from the Upper Rio-Uaupes, the Upper Amazon and Peru. — *ophellas* *subsp. nov.* denotes a magnificent form with especially luxuriant, yellowish-brown preapical spots, acutely angled median band of the forewings, which is widely overflowed in white in the anal direction. The under surface similar to that of *nava*, but more variegated, with sharper delimited, whitish-violet stripes. Espiritu Santo and further inland as far as Paraguay.

A. phylaca resembles above an *A. erotia* (106 e) with narrowed yellow zone of the forewings. The white hue of the submedian part advances almost to the middle median and stays likewise more reduced than in the white-dotted *erotia* and *delphicola*. Tegumen strong with robust, broad and relatively short uncus. Valve anteriorly tapering, clunicula broader than in *A. boeotia*. Valve compared to *A. erotia* narrower, longer, clunicula, however, very similar so that by means of the valval appendage the species of the whole group of *A. erotia* cannot be distinguished. Only when considering the total number of all the characteristics, we may ascertain differences, though not easily. The great affinities of the species are not only expressed in the *phylaca* markings, but also in the sexual organs. *phylaca* has a greater range than was known hitherto. **phylaca** Bat., described from Guatemala and advancing to the north as far as Mexico, has very large light-yellow preapical spots and an extensive median area with nearly double as broad white zone of the hindwings as *A. leopardus trinita*. (106 d). A diminutive form of it is **trinita** Kaye from the Isle of Trinidad in which the whole yellow area of *phylacides* the forewings appears most reduced. — **phylacides** *subsp. nov.* (106 f). ♂: the yellow longitudinal band much narrower than in *phylaca*, proximally deep indented. Under surface darker reddish-brown with sharply defined bluish-violet spots. Alto Amazonas, Peru, also in the central part of the Amazon. — **sarana** *subsp. nov.* (106 c). Habitus smaller than the preceding form, the yellow anterior half of the forewing-band broader, lighter. Under surface; very much brightened, with faded yellow, instead of distinctly defined reddish-brown bands, the spots being dark violet in *phylacides* are almost white, the submarginal bands subdued, with grey, instead of metallic blue lustre. Bolivia, from the Province of Sara. — **georgias** *subsp. nov.* was recently discovered in Mato-Grosso (Brazil); it beats the *phylaca*-forms so far known by the size of the strongly darkened orange-coloured zone of the forewings. Median stripes of the hindwings, however, strangulated, under surface faded, most similar to that of *A. goyama*, preponderantly greyish-brown.

A. goyama *Schaus* is perhaps also only a *phylaca*-race; but since the clasping-organs are somewhat different, we provisionally mention it here as a species of its own. Before I knew the description by *SCHAUS*, I denominated the form *leopardus* by which i. l. denomination we figure it fig. 106 d. Smaller, with narrower wings than *sarana*, the anterior yellowish half of the median band of the forewings running more rectilinearly, the white median bands considerably narrower. The under surface still more monotonous than in *sarana*, almost without any violet marking being replaced by a monotonous grey. The brown postmedian line of the hindwings being narrow in *sarana* is more than double as broad. We repeat here the original diagnosis of *SCHAUS* *): „*Adelpha goyama* *Schaus*. Forewing with a white band from the inner margin to above the second vein, surmounted by a large yellowish space growing narrower at the fifth vein. Near the apex three narrow yellowish spots. Hindwing with a broad white band from the costa to the anal angle, a yellowish spot in the anal angle. Under surface of the forewings: costal striped in grey with some white and reddish at the base; cellule at the base whitish lilac with a reddish streak from the median vein, 4 reddish transverse lines. Base beneath the cellule greyish-brown. The white median band extended as far as the costal margin, but with a reddish-brown hue above the third vein, distally likewise bordered by a reddish-brown line being replaced at the costa by a square dark brown space. Then follow 3 whitish spots, furthermore a subterminal grey line and a marginal reddish-brown one, apex and terminal area reddish brown. Hindwings greyish-white at the base. The white median band extensively bordered by reddish-brown. The submarginal zone greyish-brown, traversed by a thick brown line. The distal margin greyish-white, in front of it 2 reddish lines. Two small black crescents with reddish-brown cap in the anal angle. Expanse of wings: 43 mm. Brazil: Castro (Paraná). — Nearly allied to *erotia*, also known from Paraguay.“ In the collection of *FRUHSTORFER* there are also specimens from Espiritu Santo, Rio de Janeiro, Sa. Catharina and Cochabamba (Bolivia). Uncus somewhat thicker and the valve broader than in *A. phylaca sarana* from Bolivia.

A. barnesia *Schaus* **). Forewing with a white median band from the inner margin to the third vein. A broad yellow spot above this, distally accompanied by 2 small yellow spots near the costa. Hindwings with a broad white median band. Anal angle very prominent. A yellowish spot near the anal angle. Under surface with a white median band, the yellowish zone, however, replaced by a dull white margin divided by reddish veins. My specimen differs from the name-type by the white submedian spot of the forewings reaching hardly the third resp. posterior median. The upper surface of *barnesia* entirely resembles *erotia*, the caudiformly extended elongation of the hindwings distinguishes it, however, from *erotia* and all the vicarious types. The under surface of *barnesia* harmonizes with *A. delphicola* *Fruhst.* and *A. aethalia* *Fldr.* (106 d), the hindwings, however, differ from these 2 species by an uncommonly extensive reddish-brown submarginal zone. Bolivia, very rare. Beside the type there is only one ♂ of the Coll. *FRUHSTORFER* known.

A. phliassa has entirely the scheme of markings of *A. plesaura* (107 a) except that in some forms the white hue at the reddish-brown median zone of the upper surface of the forewings is absent. The under surface resembles that of *A. delphicola* and *A. euboea*. The yellow preapical spots are absent in *phliassa* like in *A. plesaura*, whereby these two species are easily distinguishable from all the types of the *A. erotia*-group. **phliassa** *Godt.* (107a),

*) Proc. Un. Stat. Nat. Mus. 1900 p. 395.

**) Proc. Un. Stat. Nat. Mus. 1900 p. 396.

described from Surinam, inhabits all the three Provinces of Guiana and the whole district of the Lower Amazon. The under surface is sometimes much darker striped than it is in our figure, especially specimens from Cayenne and Obidos are thereby conspicuous and thus form a transition to *implicata* *subsp. nov.* Here the forewings exhibit from the inner margin as far as up to the middle median a white hue of the ochreous median band, being otherwise also much narrower. The white median band of the hindwings, however, broader, the basal area of the hindwings covered with violet instead of whitish. Peru. — *bartolme* *subsp. nov.* was recently discovered in Mato Grosso where it occurs beside *A. plesaura* which is so nearly allied with it on the upper surface. The bands of the upper surface analogous to *implicata* with the sole exception of the much narrower white stripes on the hindwings. The under surface eminently differing by a reddish tinge on the median part of the forewings. The whole distal area of the hindwings likewise extensively covered with reddish-brown.

A. plesaura. We have succeeded in most favourably demonstrating the markings by our figures (107 a). The yellow zone as well as the white one of the forewings vary according to the habitat of the butterflies. The under surface is likewise variable according to the locality, either with prominent bands or faded. *plesaura* *Hbn.* A form being rarely found in collections, with yellowish-brown though insignificant white embedding of the forewings, being prolonged as far as to the inner margin. The orange-coloured part of the forewings are besides much less extensive than in our figure. Habitat unknown, presumably Guiana. — *cera-chates* *subsp. nov.* approaches the most closely the illustrations in HUEBNER's „Zuträge“, by the reddish-yellow colour running through the whole forewing and the strangulated shortened white colour. The under surface peculiarly faded, discoloured into wax-yellow. Mato Grosso. — *sirona* *subsp. nov.* from Eastern Bolivia shows, beside its considerable habitual size, also a broader yellowish-brown band of the forewings; under surface also darker and more variegated, with more pregnant reddish-brown stripes than in the allied races mentioned so far. — *heredia* *subsp. nov.* (107 a as *plesaura*) is a most characteristic territorial form from Central Brazil, recognizable by the elongated white of the forewings extending as far as to the wing-centre at the cost of the reddish-brown part. Bahia, Espiritu Santo. — *antoniae* *subsp. nov.* resembles *heredia* except that the yellowish-brown part of the forewings is more irregular, the white stripes narrowed and the under surface on the forewings with darker yellow, and on the hindwings with sharper reddish-brown stripes. Santa Catharina.

A. cytherea forms one of the most intuitive examples of the geographical variability of a species the amplitude of which we illustrate by our 7 figures 108 b. On the upper surface, the reddish-yellow as well as the white part may shade off in different extent according to the locality. The under surface, however, is more constant in the ground-colour, even extremely constant, and even the width of the white median band is subject to but slight modifications. The greatest variability is exhibited by the Colombian species among which we meet such being striped the darkest brown on the under surface, beside such with a supplementary yellowish-brown median band on the upper surface of the hindwings (*olbia*, 108 c). With the exception of Mexico, *cytherea* is distributed throughout the whole of Central America and the southern continent from Colombia to Bolivia, and from the West Indies to Santa Catharina. The sexual organs are closer allied to the *cocala*-group than to the following *A. iphiola*-forms, they are, on the other hand, so well specialized that we may speak, also according to the configuration of these organs, of an independent *A. cytherea*-group. Valve of about the contour of the *cocala*-valve, with extremely broad and deep groove, the short point without spines, but with very long hair as in *cocala*. Cluncula relatively short, roundish, uniform. Penis broad, little chitinized; scaphium with thin arms. Uncus like in *A. cocala*, but basally less swollen. — *marcia* *subsp. nov.* (108 b) is found from Guatemala to Colombia. Yellow zone of the forewings narrower than in the typical form, as well as the white band of both the wings. — *despoliata* *subsp. nov.* (108 b as *cytherea*) is the common form of Colombia. The reddish-yellow part of the forewings darker than in *cytherea* *L.*, somewhat narrower, the white spot of the forewings anteriorly not ending in a sharp point, but suddenly interrupted broad at the posterior median. — *daguana* *subsp. nov.* (108 b) forms the melanotic extreme of the whole species, with a white median band being only as thin as a thread. The reddish-brown bands of the under surface more prominent than in all the known *cytherea*-races. The white stripes are not always so much reduced as in our figure; they may be half as broad again, as is shown by two ♂♂ of my collection. Rio Dagua (Western Colombia); type in the Tring-Museum. — *olbia* *Fldr.* (108 c) is the lightest form; conspicuous by a postdiscal yellow band of the hindwings. Colombia, rare, probably from the Cauca Valley where it occurs as aberration beside *despoliata*. — *tarratia* *subsp. nov.* (108 b) approximates *despoliata*, though its yellow region of the forewings is also on the decline, whereby it approaches more *daguana* and *marcia*. The white spot always goes beyond the lower median of the forewings in a distinct pointed prolongation. Ecuador. Type from Paramba. — *lanilla* *subsp. nov.* (108 b) is found from Peru to Bolivia and is further inland distributed as far as Mato Grosso. Upper surface most nearly allied to *cytherea* except that the white spot of the forewings is prolonged further anteriorly and the median band of the hindwings considerably broadened. — *insularis* *subsp. nov.* (108 b) beats even *lanilla* in the extent of the white median band. The hindwings bear only one (instead of two) blackish-grey submarginal bands. Trinidad. Similar forms are found also on the other West Indian Isles, and DOUBLEDAY reported *cytherea* already in 1847 from the Isle of St. Lucia. — *cytherea* *L.*, the nomenclatural type, described from Surinam, goes to the north as far as Venezuela and the Upper Rio Negro. The yellow area of the forewings somewhat more extensive and paler than in *lanilla*. — As *nahna* *Sm.* a form being similar and equal to *olbia* is described from Merida (Venezuela) with somewhat

- herennia*. shorter white band of the hindwings. — *herennia subsp. nov.* is immediately distinguishable from *cytherea* by the very pointed white spot of the forewings reminding us already of *mythra* (108 c) and advancing as far as to the cellular wall. Besides, the reddish-yellow spot between the broader median and the submedian begins to withdraw far from the white middle stripe and is shortened in some specimens just like in *A.*
- aea*. *mythra*. Central Brazil, Espiritu Santo and Rio de Janeiro. — The southernmost race, *aea* Fldr. (108 c as *mythra*), is lying before me from Santo Catharina and Santos. Its white stripes are expanded advancing to the anterior median, the yellow part of the forewings being, at the same time, reduced in width.
- mythra*. *A. mythra* Godt. differs from *A. cytherea* by the isolated yellow spot of the forewings, forming almost a regular triangle. Beneath, *mythra* is easily separable from *cytherea* by a whitish-violet submarginal band of both the wings and by the white median band reaching, slightly discoloured in violet-grey, the costal margin of the forewings. The species is extremely resistant, and between specimens from Espiritu Santo and Rio Grande do Sul there are but so very slight shades of colouring that a separation of the paler southern form is not necessary. Anatomically, *A. mythra* is connected with *A. cytherea*, except that the valve is somewhat shorter, ventrally more rounded, the dorsal appendage longer and more pointed, the uncus centrally thickened downwards.
- syma*. *A. syma* Godt. (107 f) has the same occurrence and resistency in common with *A. mythra*. The under surface is most characteristic by the regular intervals of narrow white and reddish-brown bands. Like in *mythra*, the white median stripe as well as submarginal stripe reach the costal margin of the forewings. The ♀ has somewhat more roundish wings than the ♂. In the Tring Museum there is, however, an aberration,
- pravitas*. *pravitas form. nov.* (107 f), with faded yellowish-white preapical area of the forewings and with light-yellow instead of orange-coloured anal spot of the hindwings. Also beneath, the reddish-brown stripes are replaced by light ochre-yellow bands with broad black borders. I know also of *A. syma*-specimens from Minas-Geraes, Paraguay and the Argentine Republic.
- coryneta*. *A. coryneta* Hew., a peculiar and rare species, so far known only from Bolivia, has an isolated oblong reddish-yellow preapical spot of the forewings, sending its festoon-like prolongation down as far as to the posterior median. Central area of both the wings very broad, of a milky white, advancing beyond the cell-apex. Hindwing with neat bipartite, crescent-shaped white anal spot instead of yellow. Under surface most peculiar, reminding us somewhat of that of *A. attica*. The white area bordered at first by a blackish, then reddish-yellow band, submarginal zone violet, distal margin again reddish-yellow. ♀ somewhat larger than the ♂, with more roundish wings.
- silia*. *A. thoasa* already forms a transition to the *A. iphiela*-group. Upper surface characterized by one or two transcellular spots of the forewings, varying in extent according to the habitat and maybe also to the season. — *silia subsp. nov.* (107 e) shows them in the most luxuriant development. Under surface entirely iphieloid by violet preapical spots, whereas all the other allies exhibit yellowish maculae reminding us of *gerona*. Argentina, type from Encorado, Sa. Cruz de la Sierra (January) in my collection, another specimen in the
- manilia*. Tring Museum. — *manilia subsp. nov.* Considerably smaller than *silia*, with only one insignificant transcellular dot of the forewings; the reddish-yellow embedment, however, somewhat more extensive. Under surface with a
- cuyaba*. broader subapical spot being already overhued in yellowish. Bolivia. — *cuyaba subsp. nov.* has above somewhat narrower white median band, but equals otherwise *silia* in the magnificently developed white small transcellular spots on the under surface of the forewings with sharply delimited light yellow preapical area. Mato
- thoasa*. Grosso. — *thoasa* Hew., described from the Amazon-district, is lying before me in a race very much allied with it, from Peru. There exists only one small white dot of the forewings, the yellow border narrower than in *manilia* from Bolivia. Under surface like in *gerona* with 2 small white stripes in the forewing-cell. —
- zalma*. *zalma subsp. nov.* already approximates the Bolivian *manilia* and has like it only one minute white dot at the cell-end. The hyaline area of both the wings somewhat broader. The ochreous preapical spot of the forewings more posteriorly prolonged and more vertical instead of horizontal. From Tarapoto on the Huallaga in Peru.
- gerona*. Type in the collection of FRUHSTORFER. — *gerona* Hew. (107 e) a graceful race, above similar to *A. coryneta*, but the yellow embedment of the forewings shorter. Anal spot of the hindwings reddish-yellow. Under surface somewhat like that of *A. iphiela*, but with two silvery white, instead of violet small stripes in the cell of the forewings. The apical spot of the upper surface diaphanous, appearing as a faded ochre-yellow area. The white zone of the hindwings framed by yellowish-red. Described from Minas Geraes, from where also our figured ♂ originates, and from Paraguay in my collection.
- massilia*. *A. iphiela*, the chief representative of the great group with isolated and relatively small reddish-yellow preapical spot of the forewings, inclines still more than the other *Adelpha* to the formation of local races, the difference of which is founded by a greater or smaller extent of the white median band of both the wings and the reddish-yellow embedment of the forewings. The under surface, however, remains constant. Claspings-organs most characteristic, tegumen with strong and still boldly curved uncus, valve prominent by a clunicle rising like a cone, but very broad towards the base, being dorsally, before the point, deeply indented, also

northernmost race. The yellowish-brown part of both the wings more extensive than in the nomenclatural type. — **massilides** *subsp. nov.* beats *massilia* in size. The preapical spot of the forewings more imposing and distally more irregular. The white zone of both the wings more extensive. Under surface lighter whitish-grey, the brown longitudinal bands darker and more prominent. Western Mexico. — **iphicleola** *iphicleola*. Bates (107 d) inhabits the whole of Central America. Nomenclatural type from Guatemala. The form is common everywhere and is reported to occur in Guatemala in altitudes higher than 4000 feet. — **gortyna** *gortyna*. *subsp. nov.* has a smaller dark preapical spot of the forewings and narrower white median bands. Colombia, very common in the Cauca Valley. On the volcano Chiriqui a form smaller in the habitus is found which, however, agrees with *gortyna* in the scheme of markings. — **funalis** *subsp. nov.* is known to me only from the Rio Dagua in Colombia, and like all the races of this river-basin very much darkened, so that the white median band of both the wings is reduced to half its normal width. Type in the Tring-Museum. — **phera** *phera*. *subsp. nov.* somewhat resembles the Venezuelan *A. iphiclea exanima* by the extremely pure-white and very broad median zone of both the wings. The under surface approximates likewise the Venezuelan race by relatively small transcellular spots. Habitat of the beautiful form is unknown. — **exanima** *subsp. nov.* is found in Venezuela. The yellow subapical spot of the forewings smaller than in *gortyna* and *phera*, the white area more extensive than in *gortyna*, of a purer white. Under surface darker than in *iphicleola* from Honduras, but there exist also specimens of a dry period with preponderantly whitish hue and prominent white submarginal stripes. — **iphiclea** L. (107 a) having originally come from Surinam, is also common in Cayenne and on the Lower Amazon. The yellow embedment of the forewings is, in the ♀, unciformly prolonged at the anterior median of the forewings. — **iphimedia** *subsp. nov.* has an almost just as broad white median band of both the wings as *silia* (107 c) and a strangely stunted reddish-yellow spot of the forewings. Cuba. — **daceleia** *subsp. nov.* A pygmean form, smaller than *A. gerona* (107 c); the subapical spot of the forewings, however, paler and larger than in *iphimedia*. This excellent race, conspicuous already by its small size, inhabits the Isle of Trinidad. — **pharaë** *subsp. nov.* is met in Mato Grosso, Peru and Bolivia. It is most closely allied to *iphiclea* from which it differs by an expanded median band and a more imposing apical spot. — **indefecta** *subsp. nov.* (107 c) excels *pharaë* in the size of the reddish-yellow embedment of the forewings, forming, however, a transition to the Brazilian territorial forms by the strangulated white band of the forewings. The under surface is distinguished by the prolonged subapical strigae and the pale yellowish-red longitudinal bands. Paraguay, type in the Tring Museum. — **leucates** *subsp. nov.* is set up according to a specimen of the FELDER-collection of the Tring Museum. *leucates* in many respects reminds us of *iphimedia* from Cuba and presents itself as a genuine product of a hot and dry zone. It differs from the most nearly allied *ephesa Mén.* by a broader white median zone of both the wings, the lighter and paler ochreous and also more imposing subapical spot and the paler under surface. Bahia. Similar specimens from Pernambuco in the collection of STAUDINGER. — **ephesa** Mén. inhabits Central Brazil. The nomenclatural type might originate from Rio de Janeiro, where its author has been collecting personally. The apical spot of the forewings more roundish than in *iphiclea*, the white zone narrower. Not rare in Espiritu Santo and near the capital of Rio de Janeiro. — **gellia** *subsp. nov.*, finally, resembles the Paraguay-race on the forewings, but the white area of the hindwings is again narrowed. Under surface darker than in *indefecta* and *ephesa*, the reddish-brown longitudinal bands more prominent. Sa. Catharina, to the north as far as São Paulo.

A. thessalia is found as a vicarious type, smaller in the habitus, beside *A. iphiclea* to which it is nearly allied by the upper and under surface. The shape of the wings is somewhat more pointed, the reddish-yellow apical spot more compact and more roundish. The white median band of the forewings tapering anteriorly. Hindwing more slender, more sharply dentate, the reddish anal spot obsolete, the sexual organs greatly differentiated: uncus much narrower, more slender, strangulated towards the base, valve ventrally without the convex medial projection, nearly uniformly cylindrical, more slender and pointed. Cluncula basally narrowed, rising in almost uniform width. Two areal forms: **thessalia** Fldr., the typical form from the Rio Negro. Very common in Peru and Ecuador up to an altitude of about 1200 m. Rare in Colombia. Beneath recognizable and differing from *A. iphiclea* by shorter transcellular strigae. In Bolivian specimens we notice the influence of the seasons. For instance, ♂♂ from Coroico belonging, according to the dark-brown striped under surface, to a rainy period, show a prolongation of the reddish-yellow preapical area on the upper surface of the forewings; time of their flight November and December; whereas specimens from August, by their preponderantly light grey bands on the faded under surface create the impression of being the product of a dry zone. — In **cesilas** *subsp. nov.* the character of the dry season form is increased. The preapical spot is narrowed and begins to dissolve at the margins. The white zone of both the wings is nearly as broad again as in specimens from Peru. Under surface of both the wings predominantly whitish, the reddish-brown stripes, especially in the basal zone, as thin as a thread. From Pilcomayo to the Rio Grande, collected by STEINBACH in December.

A. calliphiclea Btlr. was founded on CRAMER's figures J and D, table 376 of his Pap. Exot. IV. The form, provided its not having been misdrawn or coloured wrongly, is remarkable for 3 small white transverse bands of the cell of the forewings and a purely white submarginal band of the under surface of both the wings. Above it resembles *A. abia* Hew. by a three-cornered subapical spot. Surinam. Similar specimens from Bolivia are, according to BUTLER, reported to be in the British Museum.

abia.

A. abia Hew. (109 a) hitherto known only from Rio de Janeiro, may be considered one of the commonest *Adelphes* of Southern Brazil occurring also in Argentina and Paraguay. It very probably replaces *A. thessalia* in Brazil and the neighbouring states. The clasping-organs are, as regards the valves, but slightly differing, but the uncus of *abia* seems to be more robust and shorter, the scaphium and the saccus broader. The valve of *abia* is somewhat more slender with a more bulky appendage of the very high clunícula. According to the season the under surface of the butterfly may be striped in vivid light cocoa-brown or nearly whitish, with faded bands. Upper surface very similar to *A. iphiclea indefecta* (107 e), though with a more pointed reddish-yellow area of the forewings. Specimens from Rio Grande do Sul are beneath almost entirely whitish-grey.

basiloides.

A. basiloides resembles above *A. iphiclea* (107 d), except that the white median band penetrates the cell. The under surface is darker blackish-grey, the brown longitudinal bands are somewhat more tightened than in *A. iphiclea*. The range of the species is very limited: Central America, and besides only Colombia and Venezuela.

lydia.

A. basiloides Bates (= *lemnina* Fldr.) originally described from Mexico and occurring as far as Panama. The ♀ has sometimes a second streak-like spot before the apex of the cellule of the forewings. — **lydia**

caelia.

Btlr. is a race described from Honduras that has remained unknown to me in nature. — **caelia** *subsp. nov.* has more roundish contours and a greater size of the wings than *basiloides*. Median band broader, the yellowish

lativitta.

parts more insignificant than in specimens of a more northern origin. Colombia, rare. — **lativitta** *Stgr.* beats even *caelia* in the width of the white median area. Venezuela.

pithys.

A. pithys, a rare species hitherto known only from Guatemala, has recently been discovered also in Mexico. Upper surface as in *A. iphiclea*, only with the yellowish subapical band of the forewings being posteriorly prolonged, relatively narrow and projecting as far as to the costal margin. **pithys** Bates (109 a) differs beneath from the forms of the *iphiclea*-group by the transcellular whitish violet maculae or strigae being replaced by a faded loam-coloured band. Basal zone of the hindwings extensively whitish violet, only with fine reddish-brown lines instead of strong brown stripes as in *A. iphiclea*. Guatemala, very rare, in altitudes from 2000 to 5000 feet. — **vodena** *subsp. nov.* Habitus larger than that of the Central American race, the median band of the hindwings considerably narrower. Under surface throughout darker, the hindwings with prominent reddish-brown distal delimitation of the white discal band. Guerrero (Mexico).

donyssa.

A. donyssa Hew. (= *roela* Bsd.) occurs in Mexico and Guatemala beside *A. pithys*, likewise very rare, ascending from the lowland up to altitudes of 2000 m. The species resembles above the common *A. abia* Hew. (109 a) from Rio de Janeiro, is larger than *A. pithys* with much narrower white median band. Under surface darker, the base of the hindwings more grey than violet. GODMAN found a ♂ at the volcano Fuego in Guatemala in an altitude of 7000 feet.

abyla.

A. abyla, a species being very rarely found in the collections, resembling above *A. pithys*, but immediately distinguishable from it by the long-stretched, sharply serrated hindwings, which exhibit an uncommonly large reddish-yellow anal spot. The subapical spot of the forewings prolonged to the costal margin as well as posteriorly, but strongly tapering between the medians, contrary to *pithys*. **abyla** Hew. (109 a) inhabits Jamaica, with relatively broad white median band of both the wings. Only 1 ♂ from the Tring-Museum is known to me. — **abylina** *subsp. nov.* has been mistaken for *iphiclea* L. by LUCAS, Lep. Exot. 1835, p. 126, and also figured as *iphiclea* table 68, topmost figure. ♂ with strangulated white median area and with a most narrowed submarginal band of the forewings traversing as far as to the posterior median. KIRBY thought the form to be identical with *A. celerio* Bates, but *abylina* is still less allied with *A. celerio* than with *A. iphiclea* L. Habitat of *abylina* unknown, presumably one of the West Indies.

abylina.*gelania*.*arecosa*.

A. gelania, a collective species from the West Indies; upper surface brown with a narrow white or yellow median band extending as far as to the anterior radial. Before the apex another yellowish spot. Cellule of the forewings with three red transverse bands, anal spot of the hindwings very large, reddish, enclosing 2 black punctiform spots. — **gelania** *Godt.* from Puerto Rico is in the STAUDINGER-Collection of the Berlin Museum. — **arecosa** Hew. (109 b) differs from it by white bands of the upper surface. Habitat unknown, one of the Antilles. The statement of DOUBLEDAY, however, that the species is said to occur in Mexico, has hitherto not been confirmed.

A. lerna. A magnificent species combining the marks of the *A. iphiclea*-group, by the scheme of markings on the upper surface, with those of the *A. erotia*-group, by the opulent decoration of the under surface. According to the habitat, the size and width of the white bands and yellowish red spots of the upper surface are variable, whereas the under surface changes its tints less according to the locality than to the season. Like in *A. erotia*, we notice in the dry period predominantly yellow bands, in the wet period preponderantly intensive reddish-brown bands. *lerna* occurs from Central America to Bolivia, and as a rarity in the Amazon district and parts of Guiana. Anatomically *A. lerna* has the same form of the uncus as *A. erotia*, while the valve being distally extremely slender and turned down with the distal end in the shape of a beak, shows no relations whatever to the group of *A. erotia* and *A. iphiclea*, but occurs quite isolated. Clunícula has the shape of

a boss, strongly chitinized. — *aeolia* Fldr. (107 b) according to the season changes the extent of the white median band. FELDER's type exhibits narrower bands than the model of our figure, resembling thereby much more the Central American ♂ than it was described by GODMAN and SALVIN. I have specimens from Colombia before me with light buff stripes and such with reddish-brown bands of the under surface. Range from Nicaragua throughout Colombia. — *archidona* subsp. nov. (107 b) is found in the Amazon-district of Ecuador and Peru and differs from the Bolivian *lerna* Hew. (107 a) by somewhat darker reddish-yellow spots and less broad bands of the forewings. — *leonina* subsp. nov. (107 b) differs from all the *lerna*-races by the larger and lighter ochreous preapical spots of the forewings and the much narrower white median band of all the wings. The under surface appears more copiously set with black spots than in the other allies of *lerna*. British Guiana, Essequibo River. Type in the Tring-Museum.

A. *naxia* belongs to a small group of species differing by the various though insignificant constellations of the subapical spots of the forewings. The under surface approaches that of *A. delphicola* and *A. iphicla* and deviates from *A. lerna* thereby. The clasping organs exhibit trifling, but still immediately recognizable differences. Valve of *A. naxia* shorter, almost quadratic at the base, the dorsal tooth forming an isosceles triangle. Range from Mexico to Colombia, probably along the whole Upper Amazon and the chain of the Andes, since I recently received specimens from Mato Grosso. One charming form also on the Isle of Trinidad. *naxia* Fldr. (107 b) described according to a ♀ from Onaca, Santa Marta (Colombia), resembles beneath *A. iphicla* except the transcellular whitish-yellow maculae being much larger. — *mucia* subsp. nov. is before me from the volcano Chiriqui. The white bands are narrowed compared to *naxia* and the Mexican race, the reddish-brown apical spot is darker and the under surface with more intensive decorations in reddish-brown. — *epiphicla* Godm. and Salv. was denominated thus by its authors on table 38 f. 9, 10 in the Biologia, but identified with *A. basilea* Cr. in the text p. 306. The name of *epiphicla*, however, holds good at all events, since *basilea* Cr. is replaced by the synonymous *A. iphicla* L. The reddish-brown preapical spot of the forewings broader than in *A. mucia*. Mexico, apparently rare. — *hieronica* subsp. nov. (107 c) has, considering its small size, remarkably broad white median bands, especially on the hindwings. The preapical spots of the forewings are, however, extremely reduced. The under surface shows all the characteristics of the insular races, it is conspicuously darkened, all the markings extremely pronounced. Trinidad, Tabaginte, Narieva-district, ♂-type in the Tring Museum. — *dominula* Möschl. from Surinam was based upon a ♀-form of imposing size, with a small reddish-brown apical spot and a more crescent-shaped transcellular reddish-yellow area. Under surface remarkably similar to *A. iphicla* L. — Near Manaos on the Rio Negro, a territorial form is found, *diatreta* subsp. nov., without the blackish-brown longitudinal stripes seen in *dominula*, but preponderant reddish-brown ground-colour. The preapical spots on the upper surface of the forewings are also more intensively reddish-yellow. Type in the Collection STAUDINGER in the Berlin Museum. — *zynia* subsp. nov. distinguished by very broad, light ochre-yellow subapical spots of the forewings. The white median band of both the wings about as in *naxia*. Under surface faded, paler than in the more northern forms. The shape only somewhat larger than in *hieronica*. Apparently very rare, Mato Grosso. Only 2 ♂♂ in FRUHSTORFER's Collection.

A. *ixia* differs from *A. naxia* by the appearance of a supplementary yellowish spot of the forewings, so that the preapical area extends as far as to the middle median, while in *A. ixia* it terminates already at the anterior median. White median band of the forewings always shorter. Hindwings narrower than in *naxia* and, therefore, more protracted in the anal part. Under surface traversed by broader reddish-brown bands. Valve more slender, basally not thickened as in *A. naxia*, the tooth shorter, blunter. The species, according to the material I was able to obtain, can be proved only from Mexico to Colombia and Venezuela. *ixia* Fldr., the nomenclatural type, originates from Venezuela. Median band of both the wings something like in *A. naxia* (107 b), but shorter. The stripe embedded between the posterior radial and the anterior median in the pale ochre-yellow area of the forewings much longer and narrower than in *A. naxia*. — In Colombia *ixia* is represented by *fundania* subsp. nov. (109 b) with narrower white median area of both the wings and likewise stunted preapical spot of the forewings. On that account the faded whitish-yellow transcellular spots of the under surface also appear reduced in size. The influence of the season is evident on the under surface by a dark tinge of the longitudinal bands in the butterflies of the rainy months, and by pale reddish-yellow stripes in those of the dry period. Colombia. — *leucas* subsp. nov. is the name of a considerably different territorial form from Mexico, having already the second preapical stripe elongated and distally bent up anteriorly, while the posterior stripe is somewhat broader still than in *A. pseudomessana* (107 b) with which the character of the spotting on the forewings otherwise nearly harmonizes. Under surface in spite of the greater size with a narrower white median area than in *A. fundania* and *ixia*, the brown parts more extensive, also all the greyish-violet stripes broader.

A. *messana* Fldr., hitherto known only in one specimen in the author's collection, has according to the type that lay before me from the Tring-Museum, only one small reddish-yellow submarginal preapical spot of the forewings, while *ixia* and *naxia* exhibit two of them. Beside *messana* there exists already another form or species of the FELDER collection with three subapical spots of the forewings. It is introduced here as

A. *aufidia* spec. nov. uniting the marks of *A. ixia* and *naxia*; it has like *A. ixia* lobatedly protracted hindwings and like *A. naxia* reduced yellowish zone of the upper surface of the hindwings. Beneath it also

approximates *A. naxia*. The shape of the preapical spot of the forewings resembles more that of *A. pseudomessana*, and from all the mentioned vicarious types *messana* differs by 3 small submarginal spots, while *A. naxia*, *ixia* and *pseudomessana* exhibit but two of them. *aufidia* differs from the type of *A. messana* Fldr. by a narrower, longer and distally deeper indented ochreous subapical spot of the forewings. The white median band is anteriorly decidedly narrowed, and the median band of the hindwings appears likewise of smaller extent. The components of the subapical transversal band are beneath neater, the light markings covered with a more intensive violet. Colombia, Bogotá (?). A ♂ collected by LINDIG in the Tring-Museum. —

canuleia. ***canuleia* subsp. nov.** is nearly allied to *aufidia*, except that the yellow band-like ochreous part of the forewings is posteriorly more extensive, without being continued between the anterior medians. Under surface darker with reduced white and predominant reddish-brown bands. Peru, Tarapoto, type in the Collection FRUHSTORFER.

pseudomes-
sana. ***A. pseudomessana* spec. nov.** (107 b ♂). ♂ exactly equalling typical *messana* by the elongated ochreous subapical spot of the forewings, the white median bands, however, being somewhat narrower and more sharply separated. The hindwings exhibit a whitish submarginal line being absent in *messana*. The under surface reminds us much more of *velia* Fldr. by the dark brown instead of yellowish collective hue, besides all the light areas are also much more pregnant, more sharply delimited, only the submedian band of the hindwings is double i. e. parted, peripherically reddish-brown with light violet-grey centre, while in *messana* it is unicolorous reddish-brown. Anatomically, *pseudomessana* is strictly separated from *A. naxia* and *A. ixia* by the very long and narrow tooth of the valve reminding us of *A. iphiola*. The valve itself more slender and pointed than in *A. naxia*, and also immediately separable from *A. ixia* by the high clunícula. Peru, Tarapoto and Chanchamayo.

relia. ***A. velia***, an excellent species being still extremely rare in the collections, inhabits Colombia, Venezuela and parts of Central and Southern Brazil. Intermediate forms are surely still found in the interjacent districts. Markings of the upper surface somewhat resembling those of *A. pseudomessana* (107 b), the preapical area of the forewings, however, most closely connected with the white median band. Under surface recognizable by relatively large submarginal spots and widely diffused whitish-violet longitudinal stripes. The subbasal band of the hindwings double, the marginal lines of it like in *pseudomessana* (107 b) separated by a grey embedment. Three areal-forms: ***velia* Fldr.** Known to me only according to a ♀ with the wrong designation „Bogotá“, from the FELDER-Collection in the Tring-Museum. Habitat, however, surely Colombia. — ***himera* Fldr.** seems to replace *velia* in Venezuela, but it is possible that it is a species of its own what cannot be determined since there is only a single ♂ specimen lying before me, the type in the Tring Museum. The median bands of *himera* nearly again as broad as in *velia* and *veliada*, exhibiting besides also a small crescent-shaped white spot beneath the ochreous subapical macula, being absent in *velia*. The under surface shows more analogies, especially as regards the spotting of the forewings, but the ground-colouring is lighter. Venezuela. — ***veliada* subsp. nov.**, an excellent form of which two ♀♀ from Santa Catharina and a third one from Espiritu Santo are lying before me. Habitus of *veliada* surpassed by *A. velia*; hindwings shorter, forewings more roundish, the ochre-yellow part of the forewings distally deeper and more finely indented, the spot in general narrower. The yellow anal spot of the hindwings smaller, paler. The under surface lighter, the white marking more hazy, gradually changing into the ground-colour. Base of all the wings lighter.

calliphane. ***A. calliphane* spec. nov.** (109 b). ♂ above similar to *abia* (109 a), the yellowish preapical spot, however, not touching the costal margin of the forewings, still narrower and longer, and always reaching as far as the central median. Shape of the wings narrow, forewings curved, hindwings anally tapering very much, median band on the forewings anteriorly, and on the hindwings posteriorly running to a point. Red anal spot of the hindwings smaller than in *abia* Hew. Under surface: white median band of the forewings traversing from the costal margin the whole wing, resembling thereby *cocala* Cr. *calliphane* is, however, also beneath easily separable from *cocala* by the presence of a second somewhat effaced post-discal band running proximally to the very narrow yellowish submarginal band and parallel to it. In my ♀ from Rio de Janeiro this white intermediate band is absent and the shape of the wings is somewhat more roundish. Undersurface reddish-brown, with light violet longitudinal stripes in the proximal half of the wings and a submarginal band of the same colour on all the wings, and with a violet line in the reddish-brown postmedian band of the hindwings. Claspings-organs most characteristic by a very short valve being basally broadened like a square, ventrally with an obvious convex medial projection, dorsally with a proximal broad inflated expansion. The tooth very long, its base extensive. The end of the valve broad, rounded off, but with 4 sharp teeth. Rio de Janeiro to São Paulo, rare. Type in the collection of FRUHSTORFER. 2 ♂♂ from Paraguay in the Tring-Museum.

falcipennis. ***A. falcipennis* spec. nov.** Forewing with far protracted apex. Hindwings curved, sposteriorly greatly reduced in size. Preapical spot of the forewings nearly triangular, shaped the same way as in *epizygis*, though somewhat narrower and, therefore, not confluent with the white longitudinal bands. Shape and course of the median bands as in *calliphane* Fruhst. (109 b). The ochre-yellow anal spot of the hindwings relatively small, narrow, without a central black dot. Ground-colour of the under surface: light buff as in *cocala didia* Fruhst. Base of all the wings greyish-violet. In the cell of the forewings two brown-yellow longitudinal bands no both the surfaces ruled with sharp black lines, at the cell-apex 3 to 5 grey pointed strigae. Median baud distally

bordered in black. Both the wings traversed by a greyish-violet narrow submarginal band with a proximal black line running parallel to it. Claspings organs analogous to those of *A. calliphane*, valve, however, without the dorsal boss, whereas the ventral projection is more pronounced, clunicle rising from a narrower base. Contour of valve just like the preceding species, approaching the *A. alala*-group by the short, compact shape. Type in my collection from Rio Grande do Sul. — **perga** *subsp. nov.* was recently discovered in Santa Catharina and differs above by narrowed white and orange marking. The under surface is more variegated, the white streaks and spots are overhued by violet. The white median band of both the wings is also interiorly bordered in black, and on the wings a transcellular row of 5 distinct white spots appears, which are hardly suggested in *falcipennis*.

A. epizygis *spec. nov.* (109 b). ♂ above very similar to *calliphane*, the white median band of all the wings, however, much broader so that the yellow preapical spot is confluent with it. This spot costally much more extensive, forming a triangle instead of a narrow band as in *calliphane*. The reddish anal spot of the hindwings somewhat more imposing than in *calliphane*. Under surface: the white median band begins only at the anterior median, above it there are, however, three very broad yellowish-white internodal maculae advancing as far as the subcostal veins. Distally to them and parallel, a row of 5 or 6 greyish-white roundish dots traverses the wing-centre. The scheme of markings described just now remind us of *euboea* Fldr. from Colombia and *leopardus* (goyama Schaus) from Paraguay. The violet bands like in *calliphane*, but somewhat more subdued, the postmedian bands of the hindwings violet instead of predominantly reddish-brown and with reddish-brown longitudinal line. Claspings-organs entirely different from those of *A. calliphane* and *A. falcipennis*, much more allied to those of the group of *A. iphicla* and *A. abia*. Appendage of the uncus elongated. Valve likewise more slender in spite of a ventral expansion, the exterior part much longer, more sharply dentate. Clunicle up to the very high point broader, type from São Paulo; a ♂ from Rio Grande do Sul with somewhat broader median band in the collection of FRUHSTORFER; besides a ♂ from Paraguay in the Tring-Museum.

A. rufilia *spec. nov.* Shape of the wings more pointed than in *A. epizygis*, forewing with 2 obsolete ochreous subapical dots being absent in *epizygis*. Under surface: the white central areas on both the surfaces broader and with a lighter reddish-brown border, just like the yellowish-white subapical maculae and their distal parallel band. The whole other surface of all the wings greyish-white instead of violet traversed by fine light-red lines. Claspings-organs of this species characterized by the uncommonly neat marking of the under surface are prominent by the remarkably broad, relatively short dorsal tooth. This protuberance itself is more robust than in the allied species, more densely set with strong spikes; valve ventrally slightly curved; point armed only with two minute teeth. Rio Grande do Sul, very rare, only 2 ♂♂ in my collection.

A. epona *spec. nov.* An insignificant species combining the characters of the group of *A. iphicla* and *A. plesasure*. The upper surface resembles *A. iphicla* (107 a), *A. thessalia* (109 b) and *A. abia* (109 a), the isolated preapical spot is, by its square shape, the most similar to *A. thessalia* Fldr. The extent and course of the median band resemble *A. abia* and *A. calliphane*. The under surface differs from that of *A. epizygis* only by more faded transcellular spots. Compared with *A. plesasure*, the whole colouring of the under surface appears duller, a pale bluish-grey being prevalent. Claspings-organs with extremely short uncus; valve somewhat approaching that of *A. epizygis*, though without the inflated protuberance of the lower part. In case of intermediate stages occurring, *A. epona* may eventually be united with *A. epizygis*.

A. felderi, a peculiar entirely isolated species, recognizable by the far projecting apex of the forewings and sharply delimited, narrow, mother-of-pearl-lustrous, white median band on both the wings. The dark ochreous small preapical spot reminds somewhat of *A. ixia* and *naxia*. The under surface is most characteristic by the reddish-yellow ground-colour resembling *A. sichaeus* and by the band of the hindwings somewhat resembling *A. olynthia*. Three areal forms occurring from Mexico to Costa Rica: **felderi** Bsd. described from Costa Rica, is closely allied with **falcata** Godm. from Guatemala. Both have a smaller preapical spot and somewhat broader white median band of the forewings than **jarias** *subsp. nov.* from Mexico. The latter form is at once noticeable by a fourth component of the otherwise tripartite apical area, embedded between the anterior and central median.

A. fessonia Hew. (109 c) forming, together with *A. cestus*, a small group, is recognizable by a broad white median band advancing to the costal margin on the forewings. The band forms an obtuse angle at the cell-apex. The preapical spot uncommonly large, light ochre-yellow. Under surface traversed by dark-brown bands, anal angle reddish-brown. The apical spot of the forewings pale yellow with reddish embedment. Nomenclatural type from Honduras, but occurring from Yucatan throughout the whole of Central America to Costa Rica. Not rare in Western Mexico, also from Guadalajara and Orizaba in the Tring-Museum. Specimens from Mexico exhibit a broader white band than ♂♂ from Honduras, ♂♂ from Costa Rica a more imposing preapical spot.

A. cestus Hew. (109 c) is excelled in size by *A. fessonia* and shows on the forewings instead of a large preapical area only three relatively small reddish-brown maculae quite closely approached to the apex. Venezuela, very rare.

rothschildi.

A. rothschildi *spec. nov.* (106 a). ♂ length of forewings 33 mm. Ground-colour jet-black with light brown basal part and longitudinal bands of the same colour in the cellule of the forewings and in the median and distal region of the hindwings. Forewing with a band being very proximally bent up beyond the cellule and composed of 8 dark orange-yellow, roundish, medium-sized spots being peripherically diffuse. Before the apex of the cell there are three more small spots of the same colour, those at the costal margin being elongate and very thin, the two lower ones of a square shape. Under surface: ground-colour dark reddish-brown. Base of the forewing, one median band, one post-discal band and a row of 6 submarginal spots light bluish-grey. The whole surface of the hindwings except the reddish-brown distal region likewise light grey. The costal margin, one subbasal, 2 median and 2 submarginal bands reddish-brown. The interior reddish-brown submarginal band on both sides bordered in black. In the anal angle there are 2 black dots between the posterior median and the submedian. The distal margin jet-black, at the cell-apex of the forewings two grey points and above there are those 2 whitish square spots that are coloured in dark red on the upper surface. The under surface resembles somewhat that of *A. salmoneus* *Btlr.* Ecuador, Paramba, from an altitude of 3500 feet, from May 1897. Type in the Tring-Museum.

tracta.

A. tracta *Btlr.* (109 c) is to be found in every parcel from the volcano Chiriqui where it inhabits altitudes of 3—4000 feet. The species is besides known only from Costa Rica where it is met at the volcano Irazu even in altitudes of 6—7000 feet. The character of its markings must be considered to be just as isolated as its occurrence. Upper surface cocoa-brown with a lighter brown middle-zone and two submarginal stripes of the hindwings of the same colour. The forewings are traversed by a band-like united row of pale ochre-yellow, distally diffuse spots. Under surface yellowish-grey with reddish-brown longitudinal bands. Both the wings have besides a faded pale-yellow median stripe. The clasping-organs are noticeable by a low dorsal appendage of the valve rising tuberosely, but not in the shape of a tooth. Valve is besides distally supplied with a remarkably long tooth on the top. Uncus robust, resembling that of the *A. serpa*-group.

leuceria.

A. leuceria *Druce* (109 c), originally described from Guatemala, occurring to the south as far as Panama and to the north as far as Mexico, differs somewhat according to the season. Thus, the Tring Museum possesses a ♂ from Cuesta de Misantla from June 1896 with all the characters of a dry-period form, lighter and broader white bands on the under surface of the wings. The upper surface differs from all the known species (with the sole exception of *A. malea* *Fldr.*) by a broad ochreous median area traversing both the wings, but growing narrower anteriorly from the cell-apex. Distal to this band only three, relatively large preapical spots of the same colour as the median bands. Anal spot of the hindwings uncommonly broad, but isolated. Under surface somewhat reminding us of *A. sichaeus irisa* (106 b) with white median stripes through both the wings and violet prominent submarginal spots.

malea.

A. malea *Fldr.* (109 c) possibly replaces *A. leuceria* in Colombia, though the under surface is so different that it can certainly be considered a species of its own. Both the wings traversed by a costally broader ochreous band confluent with the anal spot of the hindwings. The under surface with a more than again as broad faded yellowish-white median zone, compared with *A. leuceria*. Basal spotting of both the wings, however, agrees with that of *A. leuceria*. Venezuela, Colombia, very rare, only 1 ♂ in my collection. — **juanna** *Sm.* is a local form described from Valdivia in Colombia; of a greater habitus than *leuceria* and *malea*, but not deviating from *malea* in the marking.

ethelda.

A. ethelda *Hew.* (109 d). Upper surface dark brown. Both the wings are traversed by a joint orange band being slightly angled beyond the cellule and beginning to dissolve into single spots above as well as beneath. The under surface entirely resembles that of *A. attica*, but the median zone of the forewings is more band-like and just like those of the hindwings pale yellowish, instead of white. The subbasal black stripes somewhat weaker. Described from Quito in Ecuador, but pretty surely not originating from this capital situated almost 3000 m above the level of the sea, but presumably collected in the hot valleys of that country in an altitude of not more than 1500 or 1800 m. Very rare, only the type known.

demialba.

A. demialba *Btlr.* (109 d) a characteristic, quite isolated species, which is also locally extremely confined and has hitherto been proved only from Costa Rica and Panama. *demialba* is considered an alpine butterfly flying in open spaces of the woods in altitudes of 4 to 5000 feet and being very difficult to catch. Upper surface bluish grey with black bands. Forewings distally, from the cell-apex, decorated with 2 rows of submarginal white spots, besides a series of ante-terminal stripes traverses the forewing, and beyond the cellule there are three strigae embedded. Under surface bluish grey with brown bands changing off with violet stripes in the cell of the forewings and in the interior part of the hindwings.

A. attica initiates an interesting and prominent small group of species found extremely seldom in the collections. The few species belonging to this group exhibit the magnificent and singular markings of the under surface of the *A. serpa*-group, but are still anatomically closely allied to the *A. iphiclea*-group by the valve being crowned by an appendage. *A. attica* itself has the relatively broad, knife-shaped uncus of the *A. serpa*-group; the valve itself is distinguished by being entirely unarmed. The clunicle is nearer to the sternit than in the

species of the *iphicla*-series, ventrally hardly noticeably convex, the point slightly rounded. The whole valve set with long hair, the clunicula narrowly triangular, the uncus covered with little warts. The habitus of *attica* somewhat resembles *davisi* (106 c) except the dark loam-coloured tint also passing over on the white median stripes of the hindwings. The under surface is specialized throughout and has the prominent white spot encircled by black before the cell-apex of the forewings in common with the *A. serpa*-group (107 c). On the hindwings there are brown or black or violet bands. — **attica** *Fldr.* (110 A a). Type in the Tring-Museum, as well as a ♂ *attica*, from the beginning of the rainy period at the end of March or in the beginning of April 1897, collected 400 to 1300 m between Villavicencio and Monteredondo by Dr. BÜRGER. Ground-colour of the under surface light yellowish-brown. Ochreous band of the upper surface of the forewings somewhat narrower than in **carmela** *carmela*, *subsp. nov.* This is, as to the habitus, larger than the preceding form; under surface with broader white, and with more extensive dark brown, longitudinal bands. Colombia, without exact habitat in the collection of FRUHSTORFER, but presumably from the Rio Dagua, since it was obtained by W. ROSENBERG. — **lesbia** *Stgr.* *lesbia*. With broader and somewhat lighter ochreous bands of the forewings than *attica*, band of the hindwings costally bordered with fainter yellow. Patria: Alto Amazonas, 1 ♂, STAUDINGER's co-type, captured by A. BANG-HAAS, in Coll. FRUHSTORFER. — **serita** *subsp. nov.* (110 A a) ♂: light ochreous band of the forewing much narrower than *serita*, in the mentioned races, just like the white longitudinal band of the hindwings which is costally only less tinged in yellow than *lesbia*, instead of it the anal spot of the upper surface of the hindwings is enlarged. Under surface: is very closely allied to *carmela* by the dark brown bands, but differs from it by the more extensive and light whitish-violet submarginal spots and strigae of all the wings. Bolivia, Province of Sara, end of February till the beginning of April.

A. gavina *spec. nov.* is most closely allied to *calliphane* (p. 526) by the very similar upper surface (109 b). *gavina*. The shape of the wings is, however, more compact, the reddish-yellow apical spot of the forewings shorter and considerably broader. The white median band more of the character of *A. alba* *Hew.* (109 a). Subanal spot of the hindwings uncommonly large, beating in extent that of *calliphane*, *epizygis* (109 a), and *falcipennis*. Under surface: remarkably similar to that of *A. plesasure*, showing, however, also certain analogies with *A. calliphane*, but immediately distinguishable from it by the white zone of the forewings terminating already at the base of the anterior median, whereby the under surface comes in connection to *epizygis*, *alba*, *falcipennis*. Occurring from Rio de Janeiro and Espiritu Santo to Blumenau, Santa Catharina. 2 ♂♂, 4 ♀♀ in the Coll. FRUHSTORFER.

A. melona is to be numbered among the largest species of the genus. The ♀ generally excels *A. archidona* (107 b) in the dimension of the wings. The yellowish-brown zone of the forewings more compact, more homogeneous than in *A. ney* (110 A b). Under surface with only one black-bordered white spot before the cell-apex, the brown bands of the hindwings darker and broader than in *serpa* (107 c). The nomenclatural form **melona** *Hew.* has remained unknown to me, it is absent in the Tring-Museum and also in my collection. *melona*. Very likely it resembles Peruvian specimens the ♂♂ of which exhibit a somewhat darker under surface than the ♂♂ from Surinam: — **thesprotia** *Fldr.* has a lighter and more extensive reddish-yellow zone of the forewings *thesprotia*, than the Peruvian race. ♀ with light ochre-yellow band which is overhued in whitish as far as to the posterior median. The white area of the under surface in the ♂ distally light coffee-brown, in the ♀ bordered by nearly greyish-brown. Surinam, Cayenne. According to KAYE, a vicarious form is found in the Isle of Trinidad. — **leucoconia** *subsp. nov.* (110 A a) is found at the Upper Amazon. The ♂ also shows traces of a white hue at the *leucoconia*, submedian and a more extensive white median band of the hindwings. The under surface more faded with paler bands. — **meridionalis** *subsp. nov.* (110 A a) ♀: distinct local form, distinguished by the uniform broad *meridionalis*, dark ochre-yellow longitudinal band of the forewings somewhat tinged in white at the submedian, and by the median area of the hindwings, being also anally very much broadened, the hindwings exhibiting a nearly double as broad yellow subanal spot. Under surface remarkably lacking blue spots of silvery lustre, but with large white spots in the cell of the forewing and very broad and light yellowish-brown bands of the hindwings. Patria: Brazil, Santa Catharina, ♀-type in the Tring-Museum. Whether this habitat is correct? — I should presume similarly coloured ♀♀ in Southern Peru or in Bolivia.

A. arete, a magnificent species hitherto known only from Brazil. Upper surface very similar to *A. melona*, but the forewing shows a purely white sharply limited zone advancing as far as to the posterior and sometimes even to the middle median. Under surface at once recognizable by 3 broad brown bands covering the whole upper surface of the wings and leaving only two pregnant white stripes. **arete** *Men.* (110 A b) from *arete*, Central Brazil: forewings with a bipartite white stripe reaching as far as to the last median. Espiritu Santo. — **cibyra** *subsp. nov.* is based upon a ♀ of the Geneva Museum, nearly without any traces of a white hue on the forewings and with a uniform yellowish brown band, habitat unknown. — **pseudarete** *subsp. nov.*, likewise *cibyra*, of an uncertain habitat, differs from *arete* by the white spot on the upper surface of the forewings advancing *pseudarete*, as far as to the wing-centre. Anatomically *A. arete* which was examined in the form *pseudarete* deviates from *A. attica* by the boldly curved, ventrally distinct valve with a distal part tapering off rather suddenly. The clunicula may be considered the narrowest one among all the species examined. It is digitiform and rather uniformly covered with spinules placed in almost regular rows. The end of the valve is sharply armed. Uncus narrower than in *A. attica* *Fldr.*

- deborah*. **A. deborah** Weeks has a dark ochre-yellow zone of the forewings running more regularly than *A. metona*. The hindwings have no white median stripe, but only two dun antemarginal bands, under surface similar to *A. attica*, only with darker brown bands. Colombia, very rare. A co-type of the author is in my collection.
- zunilaces*. **A. zunilaces** spec. nov. approaches *A. attica* by two small yellowish preapical spots, and somewhat *A. erotia* and *A. jordani* in the course of the very broad ochreous median zone. The under surface is closely allied to *A. deborah*, but all the longitudinal stripes are still darker than in *A. deborah*. Iquitos, type in the Coll. STAUDINGER.
- biedermanni*. **A. biedermanni** spec. nov. Upper surface black with two reddish-brown spots in the cellule and small reddish-brown adnerval stripes ending radiatiformly and not reaching the distal margin. The latter stripes are also seen on the under surface in brick-red colour. Base of the under surface of both the wings as white as chalk. The white basal area distally bordered by a broad light brick-red longitudinal band. In the white area, on the forewing, there is also a small red transverse band, on the hindwings two furciform, small longitudinal bands. The whole outer zone of both the wings black.
- The following three species inserted here are the only ones that have remained unknown to me in nature and of which there exists not even a figure.
- makkeda*. **A. makkeda** Hew. from Para. Upper surface dark brown. Both the wings traversed by a broad band. On the forewings this median band is orange-coloured and divided into eight parts by the veins. The fourth component is distally somewhat advanced towards the apex, projecting thereby beyond the others. The white median area of the hindwings distally with an orange hue. Forewings with some black lines and a short orange band in the cellule and below it, besides with a subapical bipartite spot. Forewings with two, hindwings with three submarginal reddish stripes. In the anal angle of the hindwings an orange-coloured spot. The under surface hardly differs from *A. erotia*. *makkeda* is, however, on the upper surface easily distinguishable from all the known species by the median zone of the hindwings being divided into a white and a reddish half.
- caphira*. **A. caphira** Hew. is denominated according to a ♀ from Venezuela and probably belongs to the group of *A. ixia* and *A. naxia*; forewings dark brown. Both the wings with a white band beginning at the second median vein of the forewings, where it is crossed by black veins. Forewing with a large spot near the costal margin and somewhat outside the wing-centre. Two smaller spots above the middle macula and also beneath it, all of them orange-coloured. Forewing with two, hindwing with three submarginal bands.
- orinoco*. **A. orinoco** Weeks is described in the 38th volume of the „Canadian Entomologist“. It originates from Venezuela.

II. Section. Species without dorsal appendage (clunícula) of the valve.

The species belonging here all show the same character of markings on the under surface of the forewings: black cancellated markings before the cell-apex.

- A. celerio** may be looked upon as one of the most variable and, therefore, most interesting species of the genus. Hardly anything had been hitherto known about the multifariousness of its forms. KIRBY believed to be right in uniting *celerio* with *A. serpa*, but this species itself sends forth a ramification as far as Central America, and besides, there are anatomical characteristics by means of which we may easily separate the two collective species: the uncommonly slender, boldly bent uncus of *celerio* being pointed like a needle and remarkably contrasting with the clumsy uncus of the races of the *A. serpa*- and *A. hyas*-group. The valve is likewise narrower, less robust, and the ends of the scaphium shorter, more pointed. Another characteristic, though quite exterior, is the scheme of markings on the under surface of the hindwings. There we find in *A. serpa* a submarginal double-row of long-stretched crescent-shaped maculae united to bands, whereas in *celerio* short small square spots separated by black lines. On the upper surface all the races belonging to the series of forms of *A. celerio* are conspicuous by a greenish hue of the diaphanous median zone. Like in the other Adelphes, the extent of the reddish-yellow area of the forewings, the width of the white median zone, and especially also the dimension of the yellowish anal spot of the hindwings vary according to the season and locality. Range from Mexico to Peru, presumably also Bolivia, to the east and in Venezuela. — **diademata** subsp. nov. (107 d ♀) is based upon the form of the dry period lying before me from Western Mexico and Orizaba. The reddish-yellow embedding of the forewings in both the sexes more extensive, and the transparent greenish white median band broader than in the name-type. — As **godmani** form. nov. (107 d) I should like to mention a darkened deviation being conspicuous for its narrowed greenish median bands, a larger reddish-yellow anal spot of the hindwings on the upper surface, and gloomy, expanded brown longitudinal stripes on the under surface. Type from Orizaba in the Tring-Museum. — **celerio** Btlr. (107 d), originally described from Guatemala, but distributed all over Central America and as far as the Cauca-Valley (Colombia), is at once distinguishable from the more northern *diademata* by the smaller reddish-yellow preapical spot. — **syrna** form. nov. is the name of a melanotic form analogous to *godmani*, which was wrongly denominated *massilia* Fldr. by GODMAN and SALVIN and also figured on table 28 fig. 7, 8 of the Biologia Centrali-Americana. — **phintias** subsp. nov. (107 c), of which we figure a ♀, approaches *diademata* from which it differs by the darker, somewhat narrower and more irre-

gularly bordered subapical spot of the forewings and by the narrowed median band of the hindwings. Venezuela (Merida), type in the Tring-Museum. — **duiliae** *subsp. nov.* (107 d), a much more modified territorial form found in Ecuador. It corresponds to the rainy period form *godmani* and *syrra* of the more northern districts and excels these Central American deviations even by reduced white areas of the forewings. Represented from Chimbo and Paramba, from an altitude of 1000 to 3500 feet. To this form probably belongs an especially fine ♀ of my collection without exact habitat, with dark green bands on the upper surface and light brown clouding on the under surface of the forewings. — **diadochus** *subsp. nov.* lying before me from Tarapto on the Hualagala, Peru. The size of the reddish preapical area of the forewings corresponds more to that of *godmani*, the width of the median zone to *celerio*. diadochus.

A. seriphia is a magnificent vicarious type of *A. celerio*, distributed from Central America and Venezuela to Bolivia, recognizable by still more advanced retrogression of the white median band of the forewings, which is dissolved into entirely isolated maculae, and by luxuriant development of the reddish-yellow zone traversing in the shape of a band both the wings, whereby it forms an analogon to *A. olbia* Fldr. of the *A. cythera*-group. Sometimes the reddish-brown garland of the hindwings is absent. On the upper surface *seriphia* is yet characterized by especially prominent reddish-brown transverse bands of the cell of the forewings, while large helmet-shaped submarginal spots on the under surface of the forewings indicate a certain alliance with *A. serpa*. We know but few specimens, mostly ♀♀. Anatomically *A. seriphia* appears strictly separated from *A. celerio* and *A. serpa* by the shape of the uncus which is, before the point, bent unciformly and strangulated. Uncus otherwise in its contour approaching more that of *serpa*, turned steeper outwardly, without the fine curve it forms in *celerio*, and without the gentle medial swelling of the latter. — **pione** Godm. (110 A) and *Salv.* is based upon a single ♀ of the Coll. STAUDINGER from the volcano Chiriqui and differs from the nomenclatural type from Venezuela by a somewhat more faded, more yellowish-brown than reddish, and broader longitudinal band of the submarginal zone of the upper surface of both the wings. — **seriphia** Fldr., described from Venezuela and Colombia, is lying before me in almost identical ♀♀-specimens from both the countries. The reddish-brown submarginal band of the under surface more pronounced than in the figure of *pione* Godm. and *Salv.* — As **aquillia** *subsp. nov.* a ♂-form of the Coll. FRUHSTORFER is introduced with reduced reddish-brown band of the forewings, joined by some more specimens from Ocana (Colombia) of the Coll. STAUDINGER in the Berlin Museum. — **naryce** *subsp. nov.* from the Chanchamayo (Peru) resembles above *aquillia* and approximates beneath, by the faded and paler colouring, **therasia** *subsp. nov.* from Bolivia. The specimens found there by FASSL are smaller than the Colombian forms, their median white spots still more insignificant, scarcely half as broad as in *pione* and *seriphia*. The white zone of the hindwings besides more pregnantly bordered in black. pione.
seriphia.
aquillia.
naryce.
therasia.

A. serpa, a magnificent species the range of which is much more extensive than was supposed and the occurrence of which must yet be proved for great distances. The Central American race which was hitherto known only in one specimen and was considered as a species of its own, is here, for the first time, brought into connection with the collective species. All the forms have a very large reddish-yellow preapical spot in common; the median area remains always purely white without the greenish hue of *A. celerio*. On the under surface the extent of the reddish-brown macula before the apex of the forewing-cell varies. The clasping-organs are throughout more robust than in *A. celerio* and *seriphia*, uncus more than double as broad, valve ventrally more sharply dentated, its point more roundish; scaphium and point of penis likewise clumsier. — **sentia** Godm. and *Salv.* Described according to a ♂ from British Honduras; only 1 ♂ and 1 ♀ lying before me from Panama. The ♀ has a still more extensive, more faded preapical spot than the ♂ figured by GODMAN. The median band is purely white, on the hindwings narrower than in the ♂. — **paraëna** Btlr. forms a distinct intermediate form connecting *sentia* with *serpa*. Forewing with only three instead of four components of the white median band. Surinam and Lower Amazon. — **serpa** Bsd. (107 c) was figured according to 2 ♀♀ from Santos. The race remains pretty constantly between Espiritu Santo and São Paulo. Further to the south, the yellow preapical spot is somewhat shortened and the white median band is narrowed, thus forming **damon** *subsp. nov.* (107 c) represented according to a ♀ from Paraguay, but occurring pretty similarly also in Santa Catharina. — **ornamenta** *form. nov.*, however, reminds us somewhat of *A. seriphia*. The ochre-yellow spot of the forewings is prolonged as far as to the posterior median; hindwing with a complete series of elongate postmedian reddish intra-nerval spots. Patria presumably Bahia, type in the Geneva Museum. — **hyas** Bsd. is the distinct form from Rio Grande do Sul characterized by more roundish hindwings with very small anal spots. The under surface is remarkable for the absence of the reddish-brown rosette and for the white median band. Ground-colour also otherwise more faded, the basal and distal zones more straw-coloured than whitish. The coniform spot in the cell of the forewings narrower, the roundish, black-bordered maculae before the cell-apex yellow instead of white. Both the wings, finally, distinguished by small black intra-nerval stripes resembling *A. celerio*. — **radiata** *form. nov.* forms a transition from *serpa* to *hyas* by already exhibiting the black intra-nerval lines, but also by the remaining reddish-brown rosette-band round the white median area of the hindwings, characterizing the *serpa*-group. Also the shape of the basal, coniform spot of the forewing-cell corresponds more to *A. serpa* *damon* than to *hyas*. As to the shape of the clasping-organs, *radiata* excels *serpa* from Rio de Janeiro and *hyas* from Rio Grande do Sul by a bulkier structure of the uncus as well as of the valve. *radiata* occurs in Santa Catharina sentia.
paraëna.
serpa.
damon.
ornamenta.
hyas.
radiata.

myrlea. beside *A. serpa* *damon*. — Another analogon to *radiata* is lying before me from Espiritu Santo: *myrlea* *form. nov.*, above immediately noticeable by an only tripartite reddish-brown preapical spot being more broad than long. Under surface with narrow, very dark brownish-red periphery of the white median area. Otherwise like *radiata*. Very rare, known to me only in one specimen of my collection.

herbita. **A. herbita** *Weym.* So far only one specimen (♀) known. Upper surface very similar to *A. zea*, also to *A. plesasure*. A yellow area extends as far as to the central median and is sharply indented on both sides and especially distally very irregular. This faded ochreous part is closely connected with a white median band being anteriorly very narrow. Under surface characterized by a white median band touching the costal margin and being proximally bordered in black. Both the wings also decorated with a white ante-terminal band. At the apex as well as in the centre of the forewing-cell there is one yellowish spot. Santa Catharina.

A. zea, hitherto known only from Brazil, has just like *A. serpa* a more extensive range, for it is met already in Mexico and Central America, then again from Espiritu Santo to Rio Grande do Sul and Paraguay. The upper surface resembles *A. serpa*, but the hindwings are shorter, more sharply undulated with a distinct lobular projection at the distal end of the middle median. The under surface entirely white, whereby it differs from all the other Adelphes. Cell of the forewing with two small reddish-brown transverse bands; besides, both the wings are traversed by a coffee-brown or whitish-red longitudinal band. The veins are distally covered with black and form, together with two ante-marginal lines, a very pretty network. — *emathia* *Fldr.* described from Potrero in Mexico has remained unknown to me in nature. According to its author it is above very similar to *A. serpa*, but it exhibits broader white bands. — *paroëca* *Bat.* Extremely rare in Guatemala and Costa Rica; it has a narrow faded yellow preapical spot and below it a much smaller, entirely isolated macula between the anterior and middle median. The white median zone of the forewings is, however, compact contrary to the southern races, the anal spot of the hindwings very large. The under surface of the hindwings bears a broader cocoa-brown submarginal band than *zea*, but is otherwise not very different. — *zea* *Hew.* described from Rio de Janeiro, is very rare there. I have only a ♀ from Espiritu Santo lying before me, with very large pale ochre-yellow embedding of the forewings and a white median double-spot of the forewings, being isolated by the broad black bordering of the middle median. — *serpentina* *subsp. nov.* remains considerably smaller; the orange-yellow subapical spot of the forewings much narrower, as well as the anal spot of the hindwings. White median band of all the wings, especially considering the small size of the specimens, broader than in *zea* from Espiritu Santo. The red bands of the under surface darker, more sharply bordered in black. Santa Catharina. — **A. tarpeia** *subsp. nov.* (110 A b) occurs in Paraguay, and in a somewhat different race, also in Rio Grande do Sul. As to the habitus, it is even somewhat inferior to *serpentina*; nevertheless the white median areas are still considerably expanded. The black submarginal lines of the under surface of the hindwings, however, are decidedly fainter and the red stripes likewise less prominent. Description according to 2 ♂♂ from Paraguay in the Tring-Museum, 3 ♀♀ from Rio Grande do Sul in my collection. Anatomically *A. zea* which was examined in the race of *serpentina* *Fruhst.* has many peculiarities. Especially by the shape of the valve it differs from all the known species of the toothless group, by a peculiarly short point of invariably broad cylindrical shape, not tapering distally like in *A. serpa* and *A. celerio*. Contrary to *serpa* there are only some sharp spines noticed at the end; instead of it, the terminal margin is set with uncommonly long hair-like bristles. Uncus about as in *A. celerio*, somewhat shorter and not so beautifully curved.

A. nea approximates above *A. plesasure* by the absence of subapical reddish-yellow spots. There are but few specimens known. I saw only one couple from the Tring-Museum and three specimens of the Coll. *FRUHSTORFER*. — *nea* *Hew.* (110 A b) described from Peru, from Cayenne in my collection and from British Guiana in the collection of the Tring-Museum. A very large yellowish-brown transcellular spot of the forewings stands, especially in the ♀, almost isolated. The band otherwise running like in *A. plesasure*, but more irregular. Under surface with three whitish-violet maculae bordered by broad black at the apex of the forewing-cell resembling thereby *A. serpa* (107 c). Hindwings somewhat approaching those of *A. celerio* (107 d), but supplied with broad brown bands. Uncus most singular by its deeply indented point. Valve more pointed than that of *A. serpa*, but with only one ventral tooth. — **A. campeda** *subsp. nov.* ♀: longitudinal band of the forewings narrower, darker ochre-yellow with a slight white hue at the submedian. The white area of the hindwings runs more vertically, the black submarginal bands are narrower. Under surface: by the predominating black ground-colour and the widened reddish-brown longitudinal bands, the whitish areas are very narrowly confined, and the silver-glossy bluish-violet tiny fenestrae in and round the forewing-cell are much smaller, too. The double row of small submarginal white spots is more sharply separated by the veins spread more thickly with black and a stronger ante-marginal line, and the single small spots are, therefore, more isolated. Colombia.

We have to insert (to p. 512) another form of this genus, the acquaintance of which I have made only subsequently: *A. hypsenor fassli* *subsp. nov.* being a luxuriant form and of a considerably larger shape than the specimens from the patria of the nomenclatural type, the provinces of Cauca and Antioquia. The oblique band of the forewings not only considerably broadened, but also of a more magnificent colouring. In some specimens purely white, in others, especially towards the anal angle, more extensively suffused with reddish-

brown. The brightening up of the transverse band of the forewings is also noticeable on the under surface. Canon del Tolima, Central Cordilleras of Colombia, from an altitude of 1700 m.

50. Genus: *Limenitis* F.

To this genus belong 100 forms which, in case they have not lost their original characteristic colour and markings by mimicry, exhibit preponderantly dark upper surface of the wings with white postmedian band, the under surface being rather variegated, with reddish-yellow dots or bands. The butterflies are mostly of a considerable size and rather conspicuous behaviour, so that they also rouse the attention of non-entomologists when meeting them. In Europe this group is vulgarly called „ice-butterflies“, while in America several species are known as „white admirals“. The imperfect spines of the larvae places the genus between the faintly spined *Catagrammids* and the almost spineless *Apaturids* or *Charaxids*. It is best to place them beside the *Ageroniids* in the larvae of which likewise only quite few spines are developed to clubs, while many segments of the larvae are entirely without any spines. Those observers who lay more stress upon anatomical particulars in the veins, in the formation of the palpi etc., report of relations with the *Argynniids* or *Hypolimnatiids*, from which they seem to me to be rather remote. They certainly have relations to *Neptis* and *Pandita* in the Old World, whereas in America they almost unnoticeably pass over to the *Adelpha*. They make the impression of a highly specialized group and are most undoubtedly the issues of the very latest epoch of creation, since they copy even quite recent species of butterflies, being partly still in the act of forming and developing.

The eggs form strongly sculptured three-quarter balls, the surface representing a distinct hexagonal network the nodes of which bear small bristle-shaped spikes. They are singly deposited on the under surface of the leaves, mostly near their extremities, the food-plants belonging to families of plants that are very much remote from one another. The larvae hibernating for the most part, in most cases exhibit only the spines on the thorax-rings and then again those on the last segments fully developed and sometimes thickened to morning-star shaped clubs, while those on the interjacent rings are sometimes altogether absent, sometimes reduced to short stumps. In most cases the larva when at rest occupies a peculiar position bending the end of the head under the slightly raised thorax, so that, in a similar way as the spines of the head in the *Ageroniids* and *Apaturids*, the thoracal spikes appear here as an anteriorly stretched weapon. The pupae are distinguished by a securiform most peculiar appendage on the back of the abdominal base, appearing sometimes like a drop of blood coming out from the pupa. Only the *Adelpha*-genus, which is also otherwise hardly to be separated from *Limenitis*, shows a similar formation, and even in a higher degree. This appendage looking like a drop of blood remains vacant when the developed butterfly is still lying in the tegument. The head of the pupa is often quite rounded, but may also terminate into small points, or (like in the Indian group of *Modusa*) bear wing-shaped divergent appendages. The butterflies are of an elegant structure, with big eyes, palpi of medium length and with strong bristles and mostly exhibiting a light longitudinal streak; the siphon delicate but long, somewhat pigmented, often green or light yellow. Thorax strong, abdomen in the ♂ always very slender, forewing triangular, with rectilinear contours, only the margin quite slightly concave, the fringes mostly speckled, the apex often finely bordered in white. Hindwing with undulated margin sometimes coming forth in a slight angle in the middle. The veins are not very constant, but the first and second subcostal vein branch off before the cell end. — The *Limenitis* mostly have only 1 generation in the temperate zone. The larva hibernates young, after having in many cases built artificial, small receptacles for it, in which it remains hidden during winter. In early summer it pupates and turns a butterfly mostly in June. It bustles about on forest-roads and broad highways; some are fond of visiting flowers, others disdain them altogether and prefer much rather fruit and baits. When being once allured they soon grow intimate, so that we may feed some of them by touching their siphon with the bait, while we hold them by the wings. They are otherwise timid forest-animals, being often not easy to capture, gliding along in a jerky flight with their wings spread out flatly, sometimes even slightly lowered. They are the most frequently found in the early morning hours before 11 o'clock, and then again in the afternoon towards 4 o'clock on wet places of the soil, while during the other hours of the day they remain on the crowns of the trees. Their chief range is the temperate zone of the northern hemisphere; in Africa, South America and Australia proper they are altogether absent; North America has 6 species.

A. Mimetic species.

L. bredowi Hbn. (= *eulalia* Dbl. and Hew.). This butterfly being a characteristic butterfly of the *bredowi*, Western United States has above still quite the aspect of the *Adelpha*, and it is more probable that there is here indeed a relationship existing, than a real mimicry. The butterfly inhabits the Pacific States and Mexico, being in some parts common, but mostly local. Above it deviates from nearly all the *Adelpha* by the white median band, though being interrupted reaching almost the costal margin, what occurs quite seldom or incompletely in the *Adelphes*. The under surface, however, differs very much from that genus and resembles more the other *Limenitis*, the hindwings being uniformly yellowish-green, only with a white median and submarginal

- californica*. band. The typical *bredowi* of HÜBNER flies from *Arizona* through Mexico to Guatemala. — *californica* Btlr. (109 f) is a species differing from *bredowi* by less violet coloured under surface, especially the bright violettish-grey bordering of Arizona-specimens is at the distal margin of the median band on the hindwing narrower, more subdued and often interrupted. The larva is said to live on oak-trees, according to EDWARDS.
- lorquini*. **L. lorquini** Bsd. (109 d). Similar to the preceding as to the arrangement of colours, but the apical reddish-yellow does not form an isolated spot, but covers the apex itself; the white median band broader. — The larva pretty much resembles that of *weidemeyeri*; on the second thoracal ring there are two appendages. It seems to live on different trees. HOLLAND mentions *Prunus demissa*, according to EDWARDS it lives on *Quercus*, while BEHR says that the butterfly is frequently found where *Salix* is growing on which it lives; there is, furthermore, also the poplar-tree mentioned. The butterfly inhabits the Western United States, especially California, being according to BEHR in some places common and easy to capture. — *eavesi* Hy. Edw. is a form occurring in California among typical specimens.
- astyanax*. **L. astyanax** F. (= *ephestion* Stoll, *ursula* Godt.) (109 e). Is often easily mixed up with the similar form *proserpina* of *artemis*. The under surface like in the latter form, but without any traces of the white band. Above black, in the distal part of the hindwings of a bright metallic blue. Distal margin and apex of the forewings with small white, often also orange spots. — Egg green, the network very strong and the small spines on the nodes strong and pointed. Larva, when grown-up, whitish, greenish or brownish, on the second ring 2 branched and thickened spines, and with incassations on the back of the second and the last abdominal rings; on oak-, willow-, lime- and cherry-trees, gooseberries and bilberries etc. Pupa with rounded, but very much projecting head and rather thick yellowish-brown dorsal securiform appendage; anterior part yellowish-brown with darker wing-partitions, abdominal part of a dull white; it is on the whole more slender and anteriorly darker than that of *artemis*. The butterfly does not nearly vary so much as *artemis*; of course, the blue of the hindwings may be very much increased and be occasionally extended on the forewings (ab. *caerulea* Ehm.). By the atavistic occurrence of a white band there may also result great likeness with *L. arthemis*. Such specimens form the ab. *albofasciata* Newcomb. The species is rather common in many parts of North America, and the ♀♀ may attain an enormous size. The range extends from the Atlantic Coast to the Rocky Mountains, and from Southern Canada to Arizona. To the south of this range, in Mexico, the animal appears then again in insular habitats, but very rarely seems to occur there. These specimens inhabiting the southernmost range, *arizonensis* Edw., differ from the northern specimens by a brighter bluish lustre on the under surface and by the absence of the small white spots at the apex of the forewings. The form thereby approximates in the aspect of the upper surface still more the *Vanessa cyanomelas* (93 f), likewise flying in the Mexican mountains, and is presumably just like them to be considered a superficial copy of the patented *Papilio* from the *belus*-group, many forms of which (such as *chalcus*) are likewise black and posteriorly of a metallic green glimmer, inhabiting the Mexican mountains; the more northern form, however, with white spots before the margin of the forewing, joins the type of colouring of *Papilio philenor*, being also imitated by some forms in other groups of butterflies (*Argynnis diana*-♀, *Papilio troilus*, *glaucus* etc.).
- archippus*. **L. archippus** Cr. (= *disippe* Godt.) (109 f). Imitates *Danais plexippus* L. (Vol. I, table 28 c) and has, therefore, an appearance entirely different from *astyanax*. Reddish-yellow with black, white-spotted margins and dark veins. The mimicry also extends as far as the under surface, and as an essential difference in the marking there remains only a curved post-median line on the upper surface of the hindwings, which is, however, very differently developed, being sometimes black and thick, sometimes only indicated. It is missing altogether in the form ab. *pseudodorippus* Streck. From Southern Canada and British Colombia to the South of the United States. — *hulsti* Edw. (109 f) exhibits greatly diminished black markings, as well as the *obsoleta* Edw., being hardly different and still lighter in the yellow tinge of the upper surface, appearing more as mimic of *Dan. berenice* (31 a). It occurs more in the West of the United States, in Utah and Arizona. — *floridensis* Streck. (= *eros* Edw.) is the south-eastern form, from the Gulf States; it differs from typical *archippus* chiefly by the dark reddish-brown colouring of the upper surface and is therefore probably often considered a species of its own, because the larva is said to have longer horns on the second ring. — Egg bright green, almost spherical, larva whitish, with a dull green or leaden grey tinge and with dirty-yellow or green shades, venter and feet darker brown or olive. The second abdominal ring is thickened, whereby the dorsal securiform appendage of the pupae is already indicated. The pupa itself greatly resembles that of *astyanax*, somewhat more slightly built and of a duller colouring. The larva lives especially on poplar- and willow-trees, the butterfly is not rare. — The species approximates *astyanax* much more than we might suppose, owing to the totally different appearance (being the result of the difference of the models); this near alliance is proved by the larvae, pupae, the habits and observations of hybrids of the two species.

B. Non-mimetic species.

- weidemeyeri*. **L. weidemeyeri** Edw. (109 e). Above black with white postmedian band, behind which there is a row of white dots and, on the forewing, a white subapical demi-band. On the under surface of the hindwings the basal half is divided into a great number of yellowish-grey cells by numerous black transverse streaks. In the normal specimen the white band is in both the sexes rather of the same width, but it may also be aberratively reduced (= ab. *sinefascia* Edw.). — Larva whitish with green shades and spots, the ventral surface, as far as

to the lateral line, darker. On the second thoracal ring there are 2 long branched spines, on the one beyond, as well as on the third and the last abdominal rings there are spiny knobs; on *Populus*. Pupae brownish (in the beginning greenish), the wing-partitions darker, the abdominal part lighter; the dorsal appendage yellowish-brown. The butterfly is distributed especially in the western part of North America, more common in the mountains, especially in the Rocky Mountains, its range extending in the United States from Montana and Nebraska to the western coast.

L. arthemis. Similar to the preceding, though quite different on the under surface being dark brown traversed by the white band, with orange dots in the wing-cell and before the margin. The ordinary form **artemis** *Drury* (= *lamina F.*) (109 e) has very broad white bands, resembling thus somewhat on the upper surface *weidemeyeri* as well as certain forms of the Old World. — In the form **proserpina** *Edw.* (109 e), however the white bands may be obliterated, in rare cases even disappear altogether, whereby great likeness with *astyanax* is created, especially when there is also an increase of the blue colour on the hindwings. In that case, however, the orange-red submarginal spots on the under surface of the hindwings mostly shine through to the upper surface, in some cases even creating a simultaneous increase of the yellowish-red colour, which has led to the denomination of **rufescens** *Ckll.* *proserpina* is also mostly considerably smaller than *astyanax*. — Egg green, larva, when grown up, dark brown (rarely olive-green), with a white dorsal saddle on the fifth to eighth abdominal ring. The thickened second thoracal ring bears no branched spines like the preceding forms, but two truncated cones being spinose above, the second abdominal ring is tuberosus as well as the last but one. It lives on *Crataegus*, *Salix* and probably also on other plants. The butterfly flies on roads near wet places, is often common in Southern Canada and the Northern United States to the south as far as Pennsylvania, but is absent in the whole west. According to HOLLAND it reaches altitudes of 2500 m.

K. Group *Ageroniidi*.

This is one of the most peculiar groups of day-butterflies confined exclusively to America. The main group *Ageronia* (*Peridromia*) is supplied with an organ of sounds, a peculiar kind of rattling or clattering, which belongs to the most energetic sounds created by insects. A rattling *Ageronia* flying over the road even attracts the attention of the passers-by and in the silent woods I was able to hear the noise from a distance of 40 paces without listening intently. The butterflies, therefore, have the popular name of „rattlets“ or „clatters“ (in Brazil: „Matraca“). The rattling noise is heard as soon as a butterfly catches sight of another one, but also in the pursuit of invaders into the district of impatiently waiting males. Another peculiarity consists in the upper surface of the *Ageroniidi* exhibiting a lichenoid or trunk-brown protective colour, while the under surface often has bright, glaring colours, such as hemochrome, crocus-yellow etc. Consistent with this is also the attitude while being at rest, about similar to that of a *Boarmia*; the butterfly sits with flatly spread wings clinging to a trunk and never claps the wings together above the back, like the other day-butterflies. There are often dozens of butterflies sitting on one trunk. When being chased up, they furiously whirl round the trunk and then generally settle on that side of the tree being opposite to the pursuer's. When flying away they glide along silently, but sometimes they were flying around me with a rattling noise, when I was standing in an open space, and when I kept quiet, they settled down on my grey suit with their heads down and their wings spread out. — The organ by which they create the sounds, was of course first searched for in the veins. In the very much rattling *A. feronia* there is, however, no thickening of the veins found in the basal part of the wings, but the forewing shows the discocellulars thickened to a strong, horny listel, just like the median and the radials at the place where they are joined with the discocellulars. On the under surface of the wings, the connecting point of the upper discocellular with the subcostal may be raised to a veritable knob which must certainly be suspected to be degenerated in such a peculiar way by the transformation into an instrument. In opposition to this fact, REVERDIN on examining the genitals, has recently discovered an organ consisting of 2 spiny points, at the abdominal margin of *Ageronies*, in which he suspects the creator of the sounds. — The larvae, as far as is known, live on *Dalechampia*-species; they exhibit 2 thin, slightly bent horns on the head and on the back single spines developed at the end to branched spikes; the pupa itself has on the head two long divergent appendages (hare's ears), but otherwise no conspicuous appendages. The butterflies are fond of resting on the trees of avenues and on the palmtrees bordering the roads, on *Oreodoxa* being widely spread in the tropical American pleasure-grounds, on *Embauba*-trees and *Bombax*.

51. Genus: *Ectima* *Dbl.*

Pretty small brown butterflies with white band of the forewing and lichenoid markings, beneath without glaring colours. The first subcostal vein of the forewings branches off immediately before, the second behind the cell-end; the upper discocellular is quite short, the middle one curved, the lower one stunted. The most conspicuous parts in the butterfly are the very long middle- and especially hind-legs the shins of which, as well as the femurs and tarsi are very much elongated. By stretching these legs the butterfly resting head downwards on trunks, raises the anterior body, while the distal margins of the wings are closely appressed to the bark of the trunk. The larva of the forms greatly resembling one another, lives on *Dalechampia*;

its horns on the head are more curved than in the allied genera. The pupa with hare's ears at the head which are somewhat shorter and broader than in *Ageronia*. The butterflies are met either resting on trunks or lying on them in spirals. Contrary to the *Ageronia* they seem not to be able to rattle, at least I have never heard them making a noise. The range extends over the whole warmer districts of South America from Nicaragua to Southern Brazil and Paraguay. The forms of this genus are very nearly allied to each other, and as the older descriptions are inaccurate and the habitat is often not mentioned, the relations of the older names to the forms that are known now, are not always traceable.

- rectifascia*. **N. rectifascia** Btlr. and Dr. (? = *lirina* Fldr., *erycinoides* Fldr.) (103 a). This northernmost species distributed across the whole southern part of Central America from Nicaragua to Panama, is at once recognizable by the relatively narrow, interiorly always smoothly cut off oblique band of the forewing. The ground-colour of the wings is rather light nut-brown without any metal lustre.
- liria*. **A. liria** F. (103 a). This species appears to me to represent the Venezuelan form probably also flying in Guiana. The oblique band is as broad again, ending broad over the inner-angle in the margin; the under surface is much lighter, the upper surface shows in the sun unnoticeable, though subdued and dull violet reflection. — **infirma** Fruhst. flies further to the south (Bahia); it has conspicuously light drab ground-colour and the white band of the forewing is broader. — **lirissa** Godt. (103 a, b) is the South Brazilian form; the band is gnawed out at the margins and its lower part sometimes exhibits dark ocelli or ringlets (= ab. **exilita** Fruhst.); the upper surface is rather dark and is somewhat lustrous in the sunshine, but without a real blue gloss. — In **lirides** Stgr. (103 b) from the Upper Amazon, the dark marking of the upper surface little contrasts with the sombre ground-colour, and the rather smoothly edged band of the forewing terminates very broadly on the lower median vein; the under surface more drab than yellowish-brown and with insignificant markings. — **astrieta** Fruhst. from Peru exhibits above in both the sexes blue gloss, and the white oblique band of the forewings terminates into a kind of a cone owing to deep indenture; the black bands darker and placed more vertically. — Larva on *Dalechampia*; pupa brown with pale spots; beginning from ring 5 a light dorsal stripe. The butterflies are mostly common at clearings in the woods; when being chased away from a trunk, they generally fly in a straight flight to the nearest trunk, evidently showing a slight similarity in the flight with the ♀ of *Emesis fastidiosa*; the latter, however, never rests on the trunks of trees, but on the under surface of the leaves.
- jona*. **D. jona** Hew. At once noticeable by the more considerable size and the oblique band being dissolved into single white spots. The ♂ has a brighter blue gloss. From Peru to the Lower Amazon; seems to be rarer.

52. Genus: **Panacea** S. and G.

These butterflies usually exhibit on the upper surface green bands with metallic lustre, representing in the basal part of the hindwings a complicated parallel stream, being then terminated by a coherent metal-band. Like in the *Ageronia* to which the genus is evidently closely allied *), the under surface may be hemochrome or also dull-coloured. The genus was formerly confounded with the following *Batesia*, but the only species forming the latter genus differs so considerably that it better remains separated. In *Batesia* the upper radial of the forewing forms a curve being downwards concave, upwards convex, being thus just the reverse of the lowest radial, so that both are divergent anteriorly and posteriorly and approaching each other in the middle, while the second radial passes through in the midst between the two. In this way about the following strange figure is formed: $\equiv$, being the more conspicuous, as it stands in an enormous hemochrome spot. In the *Panacea* the course of the radials is normal, nearly parallel; the forewings are here also much more pointed, their distal margin centrally drawn in etc. We do not know anything about the early stages; the butterflies are fond of the mountains, are in some parts common and have similar habits as the *Ageronia*. The single species vary extremely, but less geographically than individually, and to such an extent that almost all the species are connected with each other by certain transitions. The under surface of the apex is either hemochrome or black or yellow, the hindwings are sometimes marked with diffuse spots beneath, with lines, or figures, or even not marked at all.

- procilla*. **P. procilla** Hew. (103 c) is the species which beside *prola* being scarlet beneath comes the most frequently to us. It has beneath black forewings with reddish-brown or dark greyish-brown apical part being cut off by a white oblique band; the cellule is striped brown or blue, the hindwings are of a reddish-brown, marked in black. In Colombia, not rare, common in the so-called „Bogotá-Collections“. A. H. FASSL has made some observations about their habits. According to him the egg is very small, like that of *Satyrus briseis*, like a ball, somewhat tapering towards the upper pole, the smooth base oblate. The sides bear 12 vertical indentations terminating shortly before the top into projecting tips like calyces. The colour of the egg is reddish-brown. — *procilla*, in many places of Colombia at altitudes between 4 and 1200 m, belongs to the more frequently occurring butterflies. While the ♂ often drinks in numbers from the excrements of the roads in the primeval forests, the large ♀ differing considerably especially beneath, is a great rarity. *procilla*-♂♂ (as well as other *Panacea*- and *Peridromia*-species) when being disturbed in their meal, usually fly as far as to the neighbouring trunk of a tree in order to rest sitting there in wait, mostly in considerable height with their wings spread out and their heads downwards, until the intruder has passed by, whereupon they return to the very same

*) It forms a transition to the *Characidi*.

old place on the road (A. H. FASSL). The ♀ of *procilla* is quite similar to the ♂, but larger and beneath of a lighter colouring, the subapical white spots stronger, more diffuse, often flowing together. — There are also larger specimens being above darker than typical *procilla*. This is the form **ocana** *Fruhst.* denominated by *ocana*. the domicile of *Ocana* on the Lower Magdalen River, where it was found. — In Colombia there occur, on the contrary, also smaller specimens: **salacia** *Fruhst.* with a decorative band of the forewings being not broader, *salacia*. but more golden-green. The preapical spots as in typical *procilla*, but the white stripes on the under surface of the forewings shorter than there, more like in *ocana*. — **lysimache** *S.* and *G.* was founded upon a single *lysimache*. ♂ from the volcano Chiriqui, being probably not of a different species, because it deviates only by the steel-green, postmedian band of the forewings nearly as broad again and by the submarginal ocelli of the hindwings, which form a beautiful regular chain in *procilla*, being almost extinct. — **divalis** *Bates* is also nearly allied to *divalis*. *procilla*, but the under surface of *divalis* has a stronger red hue; the eye-spots are absent altogether, or there are only 2 to 4 smaller ones. From the Upper Amazon.

P. chalcothea *Hew.* (103 d). From Colombia; the upper surface is similar to *procilla*, or still more so *chalcothea*. to *lysimache*, though there are no small spots before the apex, but only an entirely subdued diffuse stripe. The hindwings are of a magnificent light red beneath, clouded towards the apex. — The species thus forms a transition to *prola*.

P. prola *Dbl.* and *Hew.* (103 e). Above recognizable by the broad postmedian band of the forewings *prola*. and by the row of eye-spots in *procilla* on the hindwings, being also replaced by an indistinctly bordered, dark green metal-band. Beneath the hindwings and the apex of the forewings are of a magnificent red, mostly without any markings at all, the transverse vein and a very narrow margin of the hindwings being sometimes black at most. In Colombia not rare. — **zaraja** *Fruhst.* from Merida in Venezuela is larger and has broader bands *zaraja*. than Colombian specimens; the subapical band of the undersurface of the forewings is darker, more diffusely powdered with light green than with blue, the under surface of the hindwings more subdued red. — **amazonica** *Fruhst.* from the Upper Amazon is larger, with a broader band of the forewings and more distinct black longitudinal bands. Under surface of hindwings brighter red and without any traces of a dark submarginal band. — **dubia** *Kretschm.* is the denomination of specimens with especially glaring-red apex of the forewing beneath. *dubia*. We must, however, remark that the red colour of the under surface varies very much; in some ♂♂ it is entirely pure and without markings on the hindwings, or sometimes tarnished by layers, or provided with marginal markings, a cell-end streak or some discal spots, as are almost always noticed in the ♀. — **prolifica** *Fruhst.* *prolifica*. has on the upper surface of the forewing a broader band, on the under surface the band cutting off the apex is of a purer white and distally bordered in darker green. Ecuador.

P. regina *Bates* (103 e). Greatly resembles *prola*, but the hindwings being red beneath, have dark *regina*. markings; in the cell the red basal spots are absent on the under surface. From the Upper Amazon. — **victrix** *Fruhst.* from Ecuador has a darker total colouring, the black stripes of the upper surface being more prominent. The band of the hindwing is anally remarkably narrowed. Under surface considerably darker with more prominent submarginal rings.

53} Genus: **Batesia** *Fldr.*

The differences in the veins between this genus and the preceding, which were formerly combined by the (preoccupied) name of *Pandora* *Ww.*, are stated under *Panacea*. This genus consists only of a single species, a large butterfly with a most conspicuous colouring, living on the Upper Amazon and on the Rio Negro in Ecuador and not being very rare. There is nothing known about its habits.

B. hypochlora *Fldr.* (103 f). Above black with dull blue reflection, leaving free a black submarginal *hypochlora*. band. The distal part of the forewings exhibit a very large oval, scarlet spot. The under surface of the hindwings is metallic greyish-green. — **hypoxantha** *S.* and *G.* likewise from the Upper Amazon, has beneath loam-*hypoxantha*. yellow hindwings with a slight greenish hue, while in **hemichrysa** *S.* and *G.* (103 e) the under surface of the *hemichrysa*. hindwings is of a bright yolk colour, in the ♀ duller; from Ecuador.

Group of Ageronies.

Median of the forewings without a spur, often sacciformly inflated at the base. The 4th-forelegs have spines at the first to fourth joints. Larva set with spines. Pupa at the head with 2 long bands.

54. Genus: **Ageronia** *Hbn.*

The species belonging to this group have so many peculiarities that they are to be reckoned among the biologically and morphologically most interesting neotropical Rhopalocera. Besides they are structurally and anatomically so very sharply confined, that no closer affinities with the groups of day-butterflies surrounding them are traceable.

The *Ageronia* are structurally distinguished by the uncommonly thickened costal and the posterior discocellular of the forewings being curved sharply convex.

The veins themselves are variable from one species to another, and even, as in some *Argynnides*, within

the sexes. It has formerly been tried to separate two subgenera, *Ageronia* and *Peridromia*, with the argumentation that in *Ageronia* the first subcostal veins are isolated, while in *Peridromia* they issue from a common pedicule, thus forming a fork. But this characteristic mark varies already within the sexes; as for instance the ♂ of *A. arete* has forked subcostal veins, whereas in the ♀ they are isolated. GODMAN and SALVIN have also tried to use the mouth of the basilar discocellular vein as a motive for separation, because in some species the cell is said to terminate before the bifurcation of the anterior medians, in other species at the bifurcation itself. By considering the position of the discocellulars not only the nearest allies would be separated afar, but the two sexes of one species would sometimes even have to be divided among two „genera“. The latter case would e. g. take place in *A. arete*, with the cell terminating in the ♂♂ before, in the ♀♀, however, at the bifurcation of the medians. Dr. SCHATZ has even pictorially depicted the same curious symptom in another species, *A. arethusa*. Nevertheless we approve also here of the two sections, though with the reservation that they are considered only as subgenera. We, therefore, distinguish:

- A. both the sexes with two isolated subcostal veins anterior to the termination of the cell of the forewings (group of species *Ageronia*),
- B. the subcostal veins running isolated only in the ♀, in the ♂ issuing from a common pedicule (group of species *Peridromia*).

The configuration of the clasping-organs seems to justify the hitherto prevailing isolated position of the Ageroniidi by considerable deviations from the nearest allies. The primary genital organs prove a certain alliance with the Apaturides by the uncommonly long oedeagus and saccus, but this alliance is cancelled again by the shape of the penis being almost as thin as a needle. The tegumen is of a feeble structure with a plain and strong point resembling certain Satyrides and, possibly, Euthaliides. The valve which in nearly all the species is distally cut off obliquely, may be considered as limenitoid, with distant relations to those of the genera *Adelpha* and *Athyma*. It lacks, however, the dorsal notch of these genera, and it much more resembles an edged glass plate than the pelvis of the Limenitides. The contours of the clasping-organs, when being looked at somewhat imaginatively, might have the shape of a fishing aquatic bird. The most interesting fact, however, is the existence of an organ at the sternit of the eleventh abdominal segment, which was discovered by Professor REVERDIN in October 1914. This peculiar formation was denominated the GODMAN and SALVIN-organ in the „Entomologist Record“ on the 15th of May 1915, p. 98, because these authors mentioned two small rods being inserted to the upper ends of the ventral part of the terminal segment at the abdomen, already in 1883 in the „Biologia“ (Vol. I p. 268). In the meantime I have found a similar organ in different Nymphalid genera, such as in *Cystineura*, *Libythina*, *Cybdelis*, *Temenis*, *Bolboneura*, *Pyrrhogyra*, *Lacinia*, *Nica*, *Peria*, *Vila*, *Dynamine*, *Ectima* and all the *Catagrammidi*, even in the *Libytheinae*. In the latter it has certainly changed its place, being found before the tegumen at the tergite of the last segment. The new organ is the most magnificently developed in the *Epiphile*, where it is shaped horizontally, just like in the *Eunica* and all the *Eurytelids*. The latter category I denominated the „REVERDIN-organ“, which enters the most deeply into the venter in the *Eunica*, while in the *Catonephele* it rises broadly in the shape of a sickle, as was ascertained in 1899 by STICHEL who denominated it „Rami“. The GODMAN-SALVIN organ which is so far peculiar to the Ageroniids, occurs yet in a combination with peculiar spiculae, being either as pointed as a needle or lanciform and exhibiting certain analogies with the JULLIEN-organ. Their dimensions and the way they are fastened, differ considerably from the JULLIEN-organ, but we may still presume that their functions serve for the same purpose. Dr. REVERDIN thinks it credible that the GODMAN-organ might stand in a certain relationship to the nose of the Ageronids, which has hitherto not yet been cleared up physiologically. I myself am inclined to suppose that it is an enticing organ in order to support the actions of the proper clasping-organs. At all events it is a matter of fact that the GODMAN-organ differs in all the species, and that thereupon the single species can be distinguished with much greater certainty than it is possible with the aid of the proper clasping-organs differing but insignificantly and being, therefore, very similar to one another. The GODMAN-organ may be very long and thin (*arinome*) or shorter and more of the shape of a club (*arethusa*), it may bear only few spiculae (*arete*) or be set quite densely with them (*arethusa*). The sternit itself differs distally in all the species. It may be distally entire (*chloë*, *ferox*) or deeply gouged (*arethusa*, *februa*), bearing in the latter case a dense cluster of bristly scales in the indentation.

The larvae, when being grown up, bear on their heads two horns, being somewhat knobby at the tips, on the back and the sides spines set with short branches; the pupae, however, are of a very peculiar shape, being distinguished by two long, wing-like, narrow bands (horns?) on both sides of the head. The pupa is most peculiarly sensitive to light, raising its front body horizontally in the light, while in the darkness it relapses into its hanging position. This interesting observation of Dr. MUELLER explains perhaps the statement of LACORDAIRE, because a horizontally fastened pupa may easily rouse the suspicion that additionally it is supported by a thread.

The butterflies rest on moss- or lichen-clad trunks of trees high above the ground and they are very clever in adapting themselves to their surroundings. Sometimes 8 or 10 of them are found on a trunk always with the head turned downwards, and when having been chased up, they return again, though to the other

side of the trunk. According to my observations in Santa Catharina, the butterflies are fond of flying on sunny afternoons, and while playing in their flight, they create that peculiar crackling noise which has often been described and has given them the denomination of „Rasselchen“, according to Dr. SEITZ. The English call them „tric-tracs“, the Americans „Calicoes“, and according to an account of VAN VOLKEM communicated by CHAPRONNIER Ann. Soc. Ent. Belg. July 1873 p. 21, both the sexes produce a noise comparable to the: „crépitation de sarments en combustion.“

Dr. HAHNEL thought the rattling noise of the Ageronies, being heard the most intensely and frequently in *belladonna*, to be created by clashing their wings together. But this presumption he once found disproved when holding together one pair of wings, while the sound was nevertheless created by the other pair of wings quite ad libitum. The sound of the rattling in *belladonna* reminds us of the rustling of thick paper.

The Ageronies obstinately remain at their fixed place, from which, according to my experiences, they never fly far off; neither do they fear the neighbourhood of the settlements, and I met them on bridle-paths with great traffic. They also like so-called „Waldschänken“ where they pilfer from the intoxicant juice emanating from the borings of *Coleoptera*. They are met there together with *Opsiphanes* and even gigantic *Caligo*. The *Ageronia* are the most vigilant, rising the first in order to secure themselves; but they most certainly return again after a longer interval.

Near São Paulo Dr. HAHNEL observed *A. velutina*, *arinome* and *belladonna* at places for washing, the basins of which were constructed in the thicket of foliage-plants, and the spring-water conducted there enticed also the *Ageronia*, together with *Adelpha*, down from the high trees to the sunny ground.

The *Ageronia* are lively animals to be found in the dense woods as well as at the borders of the woods and in open spaces. On the Lower Amazon the grey *Ageronia*-species, such as *feronia* and *ferentina*, are the most common butterflies, being found at every sunny wall of the huts and on every isolated tree. They most frequently use to gather there under the mango-trees during the season when the fruit is ripening, and then also *amphinome* arrives which otherwise prefers more to live in the forest. When resting on the light-grey mango-trees, these grey butterflies are hardly any more noticeable. All the *Ageronia* (also some of the ♀♀) agree in being fond of resting especially with their wings spread out on smooth trunks of trees, but mostly with the head turned downwards. They seem not to intend making themselves invisible to eventual enemies by this behaviour (and most of all only the light-grey species would succeed in it, while the dark species are even visible already from afar), but they probably love amusing themselves in this way; for as soon as an animal of the same species or genus comes near them, there commences an interesting sport in the air in which the rattling is distinctly to be heard. The rattling-apparatus seems to be uniformly developed in all the species with the exception of *velutina*, *arethusa*, *chloë* and *alicia*, which I never heard rattling, but up to this day one seems not yet to have been able to ascertain by what these puzzling sounds are produced. Contrary to the grey species living only in open spaces, on the banks of rivers, or at the borders of forests etc., the darker species, such as *velutina*, *arethusa*, *arinome*, *amphinome* and *belladonna*, abide mostly in the woods, though at sunny places, whereas *alicia* and *chloë* are even only found in the very midst of the dark woods.

The *Ageronia* are distributed in the whole neotropical district, from the Peninsula of Yucatan and Mexico to the south as far as Paraguay and the northern part of Argentina. Single straying specimens are sometimes even met in South Texas. The most frequently they occur in the Amazon Valley, where nearly all the species are found together and among them those forms that are ornamented with the richest colours. Most of them are extremely common, but on the other hand, there are only quite few specimens known of some species.

Near Pebas on the Upper Amazon, Dr. HAHNEL has found 6 species of *Ageronia* together on excrementitious bait spread on leaves; the more common *belladonna*, *velutina* and *arinome*, as well as the rare *alicia*, *chloë* and *albicornis*. Little is known about the vertical distribution of the *Ageronia*. I met them in Southern Brazil up to 800 m.

A. Species of the *Ageronia*-Group.

A. februa may be considered the most multiform species of the genus being the most widely spread. *A. februa* differs from *A. feronia* with which it always flies together, by the red crescent-spots in the proximal part of the two last ocelli of the hindwings. On the under surface the black window-grates are finer than in *epinome* and *iphthime*, the brown abdominal zone is absent or exists only in the shape of narrow bands; besides, all the larger ocelli are decorated with reddish-brown crescents. **februa** Hbn. (105 d), the nomenclatural form, ⁵*februa*, might originate, according to the figure of its author, from the Amazon district or the northern part of Brazil. It is joined by specimens from Venezuela, Colombia, Panama and according to the material in the Coll. STAUDINGER, *februa* goes to the south as far as Pernambuco. The largest specimens originate from Colima and Fortim in Colombia, the most richly coloured in blue are the Venezuelan specimens. A large series from Obidos, Para and Santarem of my collection are distinguished by a bright violet lustre on the upper surface. 2 ♂♂ from Tarapoto bear the purest white subapical maculae of the forewings. — By the name of **gudula** *subsp. nov.* (105 d), *gudula*,

those forms are to be comprised that inhabit the western part of Mexico. ♀ of special size and of remarkably dark colouring. The white spots of the forewings much larger than in the other *februa*-races, but densely dusted with sombre grey. Under surface of the wings light greyish-white with uncommonly extensive white spots of the forewings and intensely light reddish-brown longitudinal bands of the hindwings. — *sodalita* *form nov.* are on the upper surface peculiarly faded brownish-grey, from the eastern and southern parts of Mexico; they are also on the under surface of a sombre greyish-brown creating entirely the impression of being specimens of the dry period. — As *hierone* *subsp. nov.* the preponderantly greyish-green marbled areal-form of the Peninsula of Yucatan is introduced. Type in the Coll. STAUDINGER. — *fundania* *subsp. nov.* is the name of the forms from Central America with the type from Honduras, differing from the Mexican forms by the lighter total colouring interspersed with more white and from *februa* from the Amazon by the greenish-grey, instead of violet-blue colour of the hindwings. All the black bands are also of a more intense hue than in *februa* Hbn., whereas the under surface is much more delicately cancellated in black than in all the other races. — *icilia* *subsp. nov.* is similar to *A. feronia insularis Fruhst.* being of a smaller habitus than all the allied races, of a more uniform grey colour, with remarkably reduced dark blue bands. Submarginal band of the under surface of the hindwings more intensely red than in the Continental forms. Trinidad. According to KAYE a similar race occurs also in Hayti. — *amphichloë* *Bsd.* BOISDUVAL's diagnosis is entirely insufficient, for it only runs thus (translated): „We possess another form being allied with *oenoë*, which was brought along from Guaiacuil deviating sufficiently from *oenoë* by the ocelli of the hindwings which have a double iris“. I most unwillingly abolish, however, names of old authors and, therefore, I follow KIRBY uniting it as variety 3 b with *februa* Hbn. in his Catalogue (p. 649). To the Ecuador-form there belong also specimens from the Upper Amazon, Peru, Bolivia in my collection. They all have in common a greyish-brown colour resembling *gudula*, which is only decorated and interrupted by faint greyish-blue places. — *sabatia* *subsp. nov.* is closely allied with *amphichloë* and even beats it in size and the more pointed shape of the wings. The median band of the hindwings is in the ♂ proximally surrounded by a somewhat faded, broad blackish-brown area. In the ♀ the reddish-brown crescents are on both the surfaces of the hindwings more prominent, the black spotting of the whole under surface appearing also much more extensive than in the Andine specimens. Mato-Grosso, Cuyaba. — As *atinia* *subsp. nov.* (105 c) the South Brazilian race is separated with still broader black median bands on the upper surface of the hindwings, being easily distinguishable from *februa* of the Amazon in general by the melanotic total colouring. Rio Grande do Sul and Santa Catharina. — The larva of *A. februa* is more slender and worm-like than that of *A. arete*. Beside 2 frontal and anal horns it only bears 3 short spines on each segment. — *sellasia* *subsp. nov.* inhabits Paraguay. The ♀♀ resemble *atinia*, though they are more richly decorated with blue; the ♂♂ are decidedly lighter than the ♂♂ from Blumenau and Rio Grande do Sul, forming a transition to the *februa* L. of the northern zone of South America. — *ferentina* *Godt.*, finally, is a form the habitat of which we do not know for certain. It is founded upon a figure of CRAMER, exhibiting above still more blue marbling on a very dark ground than our figure of *atinia* (105 c). The under surface of *ferentina* is much more extensively brown than in any of the races known to me. But even if *ferentina* could not be maintained, it remains due to GODART to have first discovered and diagnosticated the species-character of *A. februa*.

A. glauconome is an extremely rare species occurring from Mexico and Yucatan to Costa Rica. It differs from *A. februa* by a peculiar light bluish grey of the upper surface and an extensive purely white area of the forewings, which is not dissolved into single spots. The ocelli of the hindwings only with quite faint reddish crescents. Under surface preponderantly white, with milky-blue basal part of both the wings and quite insignificant black cancellate markings. The reddish-brown hue is confined upon narrow parallel bands along the two black zigzag-garlands of the hindwings. — *honorina* *subsp. nov.* An excellent race of the Peninsula of Yucatan, known to BOISDUVAL already in 1871 and resembling a *glauconome* (105 b) in miniature, except the beautiful blue of the upper surface being much more subdued, more interspersed with grey than with violet. Ocelli of the hindwings more pressed together, being, therefore, more of an elliptic than roundish shape. Under surface with dark, grey basal part of both the wings, the reddish-brown lines almost extinct. — Beside *honorina* resembling *fictitia* (105 e) there occurs another form on the Peninsula of Yucatan, which may belong to the dry period: *julitta* *form. nov.* (105 e); its upper surface much rather resembles *A. februa sodalia Fruhst.* from Mexico, especially on account of the brownish-grey ground-colour of the upper surface. The black bands of both the wings more prominent, the white apical part of the forewings, except some small spots, veiled by greyish-brown. Under surface with somewhat stronger cancellate markings, otherwise not differing from *honorina*. — *megala* *subsp. nov.* (105 b as *glauconome*) is found in Southern Mexico and considerably excels *glauconome*, as figured by GODMAN and SALVIN, in the dimension of the wings, in the size of the white area of the forewings and the lighter total colouring. Type in the Coll. FRUHSTORFER. — *glauconome* *Bates* is above entirely darker than *megala* (105 b). It was discovered by Dr. GODMAN in Guatemala where it was observed as a great rarity only in the district of Verapaz. — *oenoë* *Bsd.*, originally described from Costa Rica, has remained unknown to me in nature. The diagnosis of its author mentions as the most important marks: About the size of *A. ferentina* *Godt.* Wings pale, grey, the forewings with a large white spot being set with small, more

or less distinct white eye-spots. Hindwing with 5 or 6 whitish ocelli which are bordered by brown and are almost entirely filled up by a black crescent. In the middle of both the wings a black zigzag-band and two extremely fine black lines before the distal margin. Diagnosis according to a specimen sent by Mons. DE L'ORZA from Costa Rica. We knew already a similar one from Yucatan.

A. ferox. A rare species occurring from Mexico to Ecuador, but hitherto known only in single specimens. *ferox* is nearly allied to *glauconome*, but its spots are moved more to the centre of the forewings and there is no compact white area, but two or three series of isolated maculae varying in extent according to the locality. — **fictitia** *subsp. nov.* (105 e) forms a transition from *A. februa* to *A. oenoë*. Ground colouring of the upper surface approximating more *megala Fruhst.* from Mexico (*glauconome* 105 b), the under surface, however, more *A. februa sodalia Fruhst.* from Southern Mexico. Forewing differing from *oenoë* by the complete white area being replaced by single white spots which are isolated by greyish-blue intermediate margins. The ocelli of the hindwings more intensely decorated with red, under surface with a reddish-brown, obsolete bent spot, resembling *A. februa*, at the apex of the forewing-cell. Hindwing preponderantly brownish-grey with distinct reddish-brown bands and an increased black marking resembling *A. februa*. Mexico. GODMAN and SALVIN mention a similar form from Manaure, Colombia, the chalk-white area of the forewings of it being more extensive and divided into single spots, the hindwings having also some white spots. This is presumably **ferox** *nov.* *Stgr.* with a broad effaced whitish band running from the costal margin to the proximal margin and exhibiting dissolved whitish spots. Cauca Valley (Colombia), very rare. — **tegyra** *subsp. nov.* is the name of a geographical race from Ecuador with more sharply delimited white median region of the forewings and predominant bluish-black of the hindwings. Type in the Coll. STAUDINGER. — **diasia** *subsp. nov.* has the most extensive white of the forewings, excelling thereby even *fictitia*. Porto Rico and Hayti, type in the same collection of the Berlin Museum.

A. atlantis *Bates* (105 c). Distinguished by the abundant greenish hue of the upper surface and blue-pupilled ocelli of both the wings. The ♀ has a white subapical band of the forewings and resembles somewhat *Dichorragia nesimachus* from the Himalaya. The under surface resembles that of *A. guatemalena* (105 c), but the ochreous hue of the hindwings is less intense, the white parts of the forewings of the ♀ are more extensive and the hindwings exhibit the same brown bordering as *A. februa*. Guatemala, from the Rio Montagua, from an altitude of 1000 m. Mexico, Guadalajara, everywhere rare.

A. lelaps *G. and S.* (105 e) has a preponderantly greenish-grey upper surface, except the ocelli being pupilled in blackish instead of blue. Very rare; known only from Mexico and Guatemala.

A. chloë forms an interesting and connecting transition from the group of *A. februa* and *A. atlantis* to the most brightly coloured species of the *Peridromia*-group. *chloë* is the smallest species known, with preponderantly dark steel-blue or slate-grey ground-colouring being by far lighter in the ♀ than in the ♂. According to the locality there are either no spots at all on the forewings, or grey, greyish-white or purely white square spots. The under surface of the ♂♂ is slate-grey, of the ♀♀ white, both the sexes have a reddish-brown distal margin of the hindwings in common. In each of the cells of all the wings there are two reddish-brown spots. Besides there is a more or less prominent series of reddish-brown median spots. The species formerly known only from the Amazon district and Southern Peru, was lately ascertained by myself as a novelty in Central Brazil and now also discovered in Bolivia in two distinct races. — **chloë** *Cr.* Upper surface bright steel-blue with prominent red spots. Rare, in Surinam. — **obidona** *subsp. nov.* (105 a). Approximates *chloë* the most, but differs from STOLL's figure by the absence of grey spots in the apical region of the forewings and by a series of red submarginal and discal maculae appearing on the hindwings. The under surface of the forewings of *obidona* shows dull-white, instead of the violet-grey spots we notice on STOLL's possibly somewhat inaccurate figure. The ♀ above dark grey, with only indistinct blue undulated bands. Ocelli of the hindwings larger than in *chloë*, distinctly pupilled in white. Forewing of the ♀ white with large black maculae, hindwing whitish-grey. Obidos, Amazon. — **nais** *subsp. nov.* (105 a), more intensely blue without the grey lustre covering *obidona*. Under surface with larger white spots of the forewings than the race of the Lower Amazon. From Tarapoto on the Huallaga in Peru. — **daphnis** *Stgr.* has on the forewings two rows of light spots the preapical ones of which are almost purely white, the transcellular ones being covered with grey; South Peru. — **nomia** *subsp. nov.* inhabits Western Bolivia. Habitus larger than that of *daphnis*, the anterior spots being also dusted with grey. Mapiri. — **xenia** *subsp. nov.* an excellent territorial race of Eastern Bolivia and conspicuous by very large, purely white preapical spots of the forewings. — **rhea** *Fruhst.* (105 a) is more closely attached to the Surinam- and Amazon-race. Forewing with blackish-powdered preapical spot, under surface duller grey than in *obidona*. Hindwing with black instead of reddish-brown median spots. Espiritu Santo and Minas-Geraes, Brazil. — **daphnicia** *subsp. nov.* Habitus smaller than in *rhea*, still more finely spotted in black than *rhea*, exhibiting besides purer white preapical spots on the forewings. Pernambuco. Type in the Coll. STAUDINGER.

A. albicornis *Stgr.* Upper surface most similar to *A. chloë rhea Fruhst.*, of a somewhat intenser and more brilliant bluish-green, forewing with but one reddish-brown cellular spot, hindwing without any red spots

at all, under surface similar to *A. chloë obidona* Fruhst. ♀ chalky white with sharp-serrated reddish-brown median band. Antenna white, in black ringlets, the tip black.

B. Species of the Group *Peridromia* Bsd.

A. feronia is the species being known the longest and to be found the most frequently in the collections. Above recognizable by a milky-blue or bluish-grey zigzag-band and coiling round the ocelli, the colour varying in intensity according to the locality. A red worm-shaped spot in the forewing-cell always distinctly noticeable. The black cells of the hindwings with one blue ringlet with white pupil. Under surface greyish-white. Hindwing with delicate yellowish or greenish lustre. In Central American specimens the hindwings are ochreous, a characteristic mark which is found as a form of condition (*mandragora* Mén.) also in Brazilian specimens, though very rarely. — *farinulenta* subsp. nov. Ground-colour darker greyish-green than in *feronia*. The white spots at the apex and round the forewing-cell more extensive. Under surface of the hindwings similar to that of *feronia* f. *mandragora*, covered with intensely dull ochre-yellow, but never as dark-yellow as in the larger *A. guatemalena* Bates. Still GODMANN and SALVIN were induced by this hue on the under surface to identify the *feronia*-race of Central America with the darker *guatemalena* being also ornamented with larger ocelli. Range from Texas, Mexico to Panama. Nomenclatural type from Honduras in my collection. — *insularis* subsp. nov. A small elegant race being above almost light-blue, beneath uncommonly light and with mother-of-pearl gloss, from the Isle of Trinidad. From Santa Lucia and Hayti there are likewise *A. feronia* recorded which certainly represent new races. — *nobilita* subsp. nov. As *nobilita* I denominate those Venezuelan and Colombian specimens that are conspicuous for their more extensive and prominent white spotting on the forewings and exhibiting in both the sexes an intensive and lighter blue spotting than *feronia* from Cayenne and the Amazon. — *feronia* L. (105 c), the nomenclatural type, originally described from Surinam, is lying before me in a large series of corresponding specimens from Cayenne, Obidos and the Upper Amazon. STAUDINGER has specimens from the Ucayali and Pernambuco, and on the Andine side *feronia* reaches as far as to the Chanchamayo. CRAMER knew an especially dark ♀ from Surinam which he depicted, while HÜBNER presented an especially light ♂. — *catablymata* subsp. nov. is to denote the Central Brazilian specimens in which the light pure blue appears as if covered with a grey curtain. The under surface is sometimes just as abundantly hued in yellow as in the Central American areal form. This deviation in the colouring was depicted already in 1857 as *mandragora* Mén. Further to the south, the specimens are steadily growing darker, until we come across *obumbrata* subsp. nov. in Paraguay. Habitus smaller, wing-contours more roundish, upper surface of all the wings darker, the white spotting powdered with sombre blackish-grey, all the black bands broader and the blue spotting almost disappearing. Under surface more extensively spotted in black than in typical *feronia*. Specimens being very closely allied to *obumbrata* are already found in Santa Catharina, while such from São Paulo form an also geographically natural transition from *catablymata* to *obumbrata*.

A. guatemalena. A remarkable species hitherto known from the Peninsula of Yucatan to Panama, was first ascertained by myself for Brazil where it very rarely occurs in Espiritu Santo. *guatemalena* excels *A. feronia* considerably in size. On the upper surface of the hindwings the black median zigzag-band appears more prominent; ocelli of the hindwings larger, with a blue periphery and white pupil being not nude as in *A. feronia*, but surrounded by a fine blue ring. Under surface of the hindwings reddish or covered with pale ochre-yellow. — *eupolema* subsp. nov. is a distinct race from Yucatan. The apical- and median-parts of the forewings throughout lighter-spotted than in the nomenclatural type from Central America. Type in the Coll. STAUDINGER. — *marmarice* subsp. nov. is most strongly contrasting with the preceding form and must be considered as the darkest areal form. Upper surface in both the sexes dull greyish-blue instead of greenish-blue as in the Honduras specimens. The subapical spots of the forewings being whitish in the nomenclatural type, are over-powdered by blackish also in the ♀. Orizaba and Guadalajara (Mexico) in the Coll. FRUHSTORFER. — *guatemalena* Bates (105 c) is found in the whole of Central America. The ♀ has an elegant, peculiarly greenish-blue colouring of the upper surface. — *elata* Fruhst. (105 d), an excellent geographical branch, is immediately distinguishable from the northern forms by the whitish, instead of livid-covered apical part of the forewings. Under surface: the black spotting appears reduced whereby the white maculae gain in space and the yellowish colouring of the hindwings grow paler. Espiritu Santo, 1 ♂ 2 ♀♀ in Coll. FRUHSTORFER.

A. iphthime resembles above *A. feronia* so much that it is easily comprehensible that KIRBY took it to be a variety of *A. feronia*. Also to STAUDINGER it came hard to diagnose this species. He recognized that there occur two more species of *Ageronia* in South Brazil beside *A. feronia* L., and denominated a species not being *A. epinome* Fldr. with „fallax“. The description of „fallax“, however, is much more identical with the form denominated as *epinome* by FELDER. Let us, therefore, quite briefly remark that the *A. iphthime*-races are immediately distinguishable from the analogous *A. feronia*-subspecies, by a reddish-brown apical hue on the under surface of the forewings, which is absent in *A. feronia*, and by the broad brown distal margin of the under surface of the hindwings. The *iphthime*-branches, however, are lacking the worm-shaped

reddish-brown cellular spot of the upper surface of the forewings, which exists as an insignificant white spot in some Brazilian specimens at most. The upper surface of *iphthime* exhibits besides subdued blue longitudinal bands. The hindwings show a more sharply defined black median band and more pregnant white-tinged ocelli.

- Larvae according to MABILDE black with lateral blue dots, on a creeper with broad leaves which has no popular name. Palpi dark green with white ribs, pupa's rest lasting two weeks. — **iphthime** *Bates* (105 a) has *iphthime*, the most distinctly prominent and largest white spots of the forewings. The upper surface of the hindwings distinguished by a light brown median band not existing in the more southern forms. The reddish-brown framing of the under surface of all the wings deeper and more prominent than in the allied races. From Mexico to Panama, also reported from the Upper Amazon by BATES. — **gervasia** *subsp. nov.* is the eastern continental *gervasia*, branch founded upon specimens occurring from Bahia throughout the whole Brazilian Provinces as far as Rio Grande do Sul inclusively. The bands, being of a light blue in *iphthime*, are replaced by greyish-blue ones, the white transcellular spots of the forewings remain smaller and are veiled by grey, just like the spot before the cell-apex. The under surface is of a less bright reddish-brown, but more extensively spotted in black. — **aternalia** *subsp. nov.* approximates the Central American *iphthime* by very large white spots on the forewings, though it differs from them by deeper and darker bluish-grey places on the upper surface. Bolivia.

A. epinome seems to inhabit exclusively Brazil and Paraguay and differs from *A. iphthime* by its large habitus, rounder wing-contours and a darker, but still more varied and more variegated upper surface. The black median spots of both the wings are more prominent, the single specimens more variable. The basal part of the forewings without blue admixture. **epinome** *Fldr.* (105 b) seems to be the most common species *epinome*, in the South Brazilian Provinces, occurring most anywhere where magnificent trees in the neighbourhood of large townships give the butterflies opportunity to pursue their favourite habit in resting on the grey bark of the trees, with their wings spread out and after having been rattling energetically. There exist 2 forms of the ♂ as well as of the ♀. I have at hand: a) ♂♂ in which the black median zigzag-band of the hindwings is distally overshadowed by grey, and b) ♂♂ in which this longitudinal band is distally set with 2 to 4 distinct white spots. On the other hand, there exist ♀♀ specimens which a) have the same light greyish-white spotted forewings as the ♂♂ and also otherwise general ♂♂ similarity (form of the rainy period?), and b) such exhibiting more uniform, sombre, hazy brownish-grey (form of the dry period?). — Specimens being especially extensively covered with brownish-grey have been denominated **fallax** *Stgr.* (105 b). From Espiritu Santo *fallax*, to Rio Grande do Sul and in Paraguay. — **florentia** *subsp. nov.* is the form of the northernmost branch known *florentia*, distinguishable from the South Brazilian *epinome* by remarkably large almost white subapical spots of both the wings. On the under surface the white spots are predominant, the black grates are reduced as well as the brown framing of both the wings. Bahia.

A. fornax resembles above somewhat *A. feronia* and *A. epinome*, the under surface, however, is immediately distinguishable from all the other species by the ochreous area of the hindwings exhibiting only a series of white marginal and submarginal spots. . . scarcely differing from the ♂, but with roundish wing-contours. There are but two areal forms: **fornax** *Hbn.* (105 c), forewing with distinctly projecting apical part, *fornax*, the median spots of the forewings relatively small. From Rio de Janeiro to Paraguay, besides in Venezuela. — **fornacalia** *Fruhst.* is larger in the habitus, the discal spots of the forewings more extensive, the hindwings darker *fornacalia*, than in *fornax*. From Texas and Mexico to Bolivia. In Guiana and the Amazon Valley, as well as in North Brazil, *fornax* seems to be absent.

A. alicia *Bates* (105 e) combines the scheme of markings of *A. chloë* on the upper surface and of *A. fornax* on the under surface. The forewings of *alicia* are nearly black, with three rows of white beautifully shaped spots being united to oblique bands, hindwings being bordered in black, without white intramedian dots, otherwise almost like in *A. fornax*. Upper Amazon, from Pebas, São Paulo and Iquitos.

A. rosandra *spec. nov.* Smaller by about one third compared to *A. alicia* beside which it occurs, *rosandra*, ♂ set with more prominent and lighter grey spots of the forewings than even the ♀ of *A. alicia*. Ocelli of the hindwings not elliptic or nucleiform, but roundish with white pupil. Under surface of the forewings analogous to that of *A. alicia*, hindwings, however, decorated with small blue ocelli and provided with a black square spot at the costal margin, both of which are missing in *alicia*. São Paulo do Olivencia, type in the Coll. STAUDINGER.

A. amphinome. One of the most common species of the genus with a range from Mexico to Bolivia, Rio Grande do Sul and Paraguay. The ♀ has rounder wing-contours and a somewhat broader and mostly also lighter transverse band of the forewings. Its habitat in the lowlands, in Central America found in altitudes ranging up to about 1000 m. — **mexicana** *Luc.* This rather insignificant local form has been described by *mexicana*, LUCAS as a species in a diagnosis of 50 lines. In short, comprehensive words *mexicana* differs from *amphinome* *L.* by darker-powdered, somewhat narrower bands of the forewings and by the appearance of a second subapical greyish-white spot which also attracted LUCAS' attention, presenting itself together with the upper spot on the under surface as a larger and purely white macula. The hindwings are of a somewhat paler red tinge than

in *amphinome*. Texas, Mexico, Guatemala, Honduras, Chiriqui. In Colombia there occur several areal forms two of which are lying before me: **morsina** *subsp. nov.* differing from the nomenclatural type from Surinam by its generally smaller shape and the subapical band of the forewings being above powdered with grey instead of purely white and beneath narrower and of a yellow tinge; — **fumosa** *subsp. nov.* (104 b), the darkest extreme known of the collective species, the oblique band on the forewings being covered with smoke-brown, and appearing also beneath still narrower and darker yellow than in *morsina*. — **amphinome** *L.* (104 b ♀) is distinguished from all the vicarious types by the nearly purely white longitudinal band of the forewings. Guiana, Amazon, Peru, Bolivia, Isle of Trinidad. — **aegina** *subsp. nov.* forms a retrogressive stride to the Colombian races especially *morsina*. The subapical band of the forewings is, however, less dark, beneath of a purer white than in *morsina*, but still duller than in *amphinome L.* The second subapical macula of the forewings peripherically never so extensively covered with grey or whitish than in *morsina*. The upper surface of all the wings speckled in blue. Beside such blue-speckled specimens there occur near Rio ♂♂ with greenish spots on the upper surface of the wings and a somewhat broader and lighter oblique band. According to Dr. SEITZ (Jahrb. Nass. Ver. Nat. 1893 p. 76) *aegina* occurs uncommonly often near Santa Theresa, while to the south it grows rarer, appearing near Santos only as a great rarity. Type from Espiritu Santo, also from Bahia, Parana, Blumenau and Rio Grande do Sul in Coll. FRUHSTORFER. Specimens from Paraguay are above somewhat lighter blue than ♀♀ from the South Brazilian Provinces. According to a statement of Dr. MUELLER the horns of the pupa of *aegina* are convergent, while in *A. februa*, judging from a figure of MABILDE, they are divergent. When comparing the figures of HUEBNER and CRAMER it results evidently that CRAMER figures the Surinam-form *amphinome L.* with purely white bands of the forewings (Pap. Exot. I Table 54 f. E. F.), whereas HUEBNER figures the Brazilian race (*aegina Fruhst.*) with the band of the forewing being distinctly powdered in grey.

belladonna. **A. belladonna** Bates (104 c) is a distinct species resembling in the colours of the under surface of the hindwings *amphinome*, while the upper surface forms a transition to *arethusa Cr.* Upper Amazon.

A. arinome resembles above *A. amphinome L.*, exhibiting also an analogous tendency in the colouring so that there occur also of *arinome* dull-grey powdered races in Colombia as well as in Central America and also in Brazil, while Guiana and the Amazon district are inhabited by purely white banded forms. Like in *amphinome*, the ♀ of *arinome* also has more roundish contours and an expanded white area of the hindwings. Base of the under surface of both the wings dark coffee-brown, the distal region black with dark-violet lustre. — **ariensis**. **ariensis** *G. and S.* The transverse band of the forewings composed of shorter components than in *arinome* of a more southern habitat, the terminal spot above the central median isolated and smaller than in *arinome*. The whitish shawl of the under surface of the forewings with a yellowish hue. Described from Panama, occurring also in Colombia. — **arinome** *Luc.* (104 c) is rarely found in European collections which mostly contain only specimens of the following areal form. Band of the forewings, especially in the ♀, very broad, upper surface in both the sexes with light blue spots. Guiana, Surinam. — **sterope** *subsp. nov.* excels *arinome* in size, but the white area of the ♂♂ is still considerably narrower. The ♀, however, has a still more extensive white area of the forewings and preponderantly greenish zigzag bands instead of blue ones. From Obidos. — **anomale** *Streck.* is reported from the Upper Amazon. By its narrowed shape of the forewing-band and by its size it forms a transition to **arene** *subsp. nov.* (104 b) of which only a ♀ from Eastern Peru is lying before me, distinguished from all the vicarious types by narrowed hindwings. The white band of the forewings is narrower by more than a third than in *arinome* and *sterope*. — **obnubila** *subsp. nov.* comprises the Brazilian territorial form lying before me as a rarity from Espiritu Santo. According to VON BOENNINGHAUSEN it also occurs only rarely at the Corcovado and in the mountains of Rio de Janeiro. ♀ smaller than ♀♀ from the Amazon district, the white area of the forewings more irregular; costally narrowed, in the intra-median parts overpowdered with brownish-grey. At the costal of the forewings, where the fourth and fifth subcostal veins are branching off, we notice a white spot being also prominent beneath, but which is absent in all the other branches of *arinome*. Under surface paler brown, the red spots faded but larger than in *arinome* from Guiana.

A. arethusa, an excellent species with velvet-black upper surface which seems as if set with turquoises. The sexes are dichromatic to a high extent. ♂ unicolorous, ♀ with white oblique band of the forewings. The ♂♂ conspicuous for a brown velvety scent-spot on the upper surface of the hindwings varying according to the locality. Corresponding to it, a lustrous friction-spot on the under surface of the forewings along the submedian and a light-brown disk in the median part. The red spotting in the anal angle of the hindwings varies in extent according to the locality. Range from Mexico to Bolivia, in Guiana and the Amazon district. According to GODMAN found in Guatemala at an elevation of up to about 1000 m. Three territorial forms, two of which were hitherto not recognized. — **saurites** *subsp. nov.*, with the type from Honduras, is considerably smaller than the nomenclatural form from Surinam, the sexual spot on the upper surface of the hindwings broader, brown instead of grey. The ♀ exhibits a much narrower and more yellowish than white band of the forewings and bears a large carmine costal spot of the hindwings being absent in *arethusa* from the Amazon. The under surface of the hindwings shows a large red costal spot contrary to *arethusa* from the Amazon and Guiana. Range from Mexico to Colombia. In Trinidad an allied form occurs. — **arethusa** *Cr.* is known to me only from the excellent figures of CRAMER and especially of HUEBNER. ♀ with three light-carmine spots at the costal margin of the hindwings. Inner margin of the forewings with red stripes. Surinam, Guiana. —

the costal margin of the hindwings. Inner margin of the forewings with red stripes. Surinam, Guiana. — *palliolata* *form. nov.* was discovered near Obidos on the Lower Amazon. I only possess yet ♀♀ with somewhat broader white area of the forewings than we figure it 104 a. Costal part of the upper surface of the hindwings without any traces of ruby-red spots, the hindwings being beneath without red basal streaks. — *thearida* *subsp. nov.* (104 b as *thearidas*) is a geographical race of an enormous size of the wings, with more extensive and lighter blue spots of the upper surface. The red spotting of the under surface more prominent than in Obidos-specimens. Peru (Pozuzo), type in the Coll. FRUHSTORFER; Bolivia.

A. velutina Bates equals *thearida* Fruhst. (104 b) in size. Upper surface darker, of a more intense steel-blue reflection and with smaller turquoise-blue spots. Area of the androconium of the hindwings black, with brown periphery. Under surface of a steel-blue lustre, with the exception of a dull black costal spot at the cell-apex and of the median friction area. Hindwings just the same, though set with 6 ruby-red, sub-terminal intermedian maculae. Rare, Upper Amazon.

A. arete, a relatively common species, replaces *A. arethusa* in Central and South Brazil, as well as in Paraguay. The turquoise-coloured spots of the upper surface somewhat bluer, the oblique band of the ♀ narrower than in *arethusa*, the androconium of the hindwings narrower, preponderantly of a greyish black, the friction spot of the under surface of the forewings not like in *arethusa* proceeding beyond the posterior median. ♀ always with three light ruby-red costal spots of the hindwings. Under surface of the ♂♂ black with a grey brightening distal from the cell-apex and the rudiments of a blue transverse band standing in a steel-blue median area of the forewings. ♀ at the same place with a white band, hindwings with three red basal spots as in *arethusa*, and 6 red antemarginal spots varying in size according to the locality. — *ortygia* *subsp. nov.* *Habitus* smaller than that of *arete*. ♂ beneath with obsolete red basal and submarginal dots of the hindwings. ♀: white oblique band of the forewings of a purer white and especially distally much more extensive than in *arete* and *alpheios*. Hindwing above more neatly speckled in blue. Under surface: the submarginal row of red maculae extends from the anal angle to the costal margin, while in *arete* and *alpheios* it terminates already between the inner margin and the anterior median. Bahia. — *arete* *Dbl.* according to VON BOENNINGHAUSEN occurs frequently near Rio de Janeiro and Petropolis. Under surface of the ♀ with paler and larger red antemarginal spots than in *alpheios*. The territorial form from Paraguay and Southern Brazil is introduced here as *alpheios* *subsp. nov.* (104 a). The white oblique band of the ♀♀ narrowed, divided into its single parts by broader black veins. The submarginal red dots of the under surface especially in the Paraguay-form considerably reduced in size. — The larva of *Ageronia arete alpheios* bears 2 stiffly projecting horns on the head, furthermore 3 pair of longer and apparently 4 pair of shorter spines on the central segments. The pupa's long horns are running parallel, contrary to *A. amphinome aegina* Fruhst.

L. Group Apaturidi.

This group has very nearly the rank of a subfamily. The geographical range has been dealt with in Vol. I. p. 160; as for the more detailed characterization cf. Vol. IX. p. 695. In the Ethiopian fauna there are eventually the *Apaturopsis* (likewise with open wing-cell), which might be nearly allied to the *Apaturidi*. This genus, however, contains such rare species that nothing at all is known about the larvae and but very little about the butterflies. — In order to characterize once more quite shortly the principal peculiarities of the *Apaturidi*, we mention that the butterflies are excellent fliers, having open wing-cells, the larvae being rough, but without spines, instead of which they have posteriorly two points and at the head two protuberances that may be developed either as straight or bent horns, or as secondarily branched, small clubs, or as antlers, or as leaves being ramous at the margin; the pupa is laterally compact, with a distinct dorsal carina, generally consisting as if of green opaque glass; it is mostly fastened to a leaf or stalk and generally needs but a short time for its development. The butterflies are fond of the woods on the broad roads of which they fly up and down, taking their food; they shun treeless, cultivated districts. The chief nourishment of the larva seems to consist of tree-like Urticaceae, such as beltis, and where they do not occur anymore, of poplars or willows. The ♂♂ often exhibit the blue reflection which varies according to the exposure, and to which the group owes the denominations: reflecting-butterflies, changeant etc. (A. SEITZ.)

55. Genus: *Chlorippe* Bsd.

The American reflecting-butterflies are distributed from Mexico and the Antilles to Argentina. They partly have a more magnificent blue reflection than the palaearctic reflecting-butterflies (*Apatura*), there even occurs a marvellous green reflection; in another part the reflection is more unobtrusive and in some species it is absent altogether. The *Chlorippe*-♂♂ are partly very common, while their ♀♀ are just as rarely observed or even unknown. The American reflecting-butterflies often differ from their palaearctic allies in their exterior by cornered forewings and long-stretched hindwings, being sometimes provided with pretty long caudiform points. As to the veins there is no constant difference from the palaearctic species. A slight difference in the structure of the body is exhibited by the broadened forelegs of the ♂♂. *Chlorippe* is therefore also often considered only a subgenus of *Apatura*. The larvae of the Brazilian *selina*, *lauretta* and *kallina* greatly resemble those of the European reflecting-butterflies and have the same habit of resting on the upper surface of the leaves, while their pupae have larger and smaller points and dents on their back and are, therefore, of a rather odd shape. The larvae, as much as is known, live on Celtis. — According to H. FRUHSTORFER (i. l.), the clasping-organs of the outer male genitals have the broad valve of the *Apatura*-group, but the saccus as well as the penis are shorter than in the other forms of this group. The uncus is, about like in the *Ageronia*,

of a remarkably light structure and has 2 points, the valve is most peculiar by four skinny appendages. — According to the nomenclatural rules, this genus has to be denominated *Catargyria* Hbn.

- cyane.* **Ch. cyane** Latr. (= *lucasii* Dbl. and Hew.) (110 B a) from Colombia has beside the blue band of the hindwing, on the forewing only a blue spot at the inner margin, the blue reflection extends, however, not only over the greatest part of the hindwings, but also over the basal part of the forewings. The ♀ has somewhat green reflection on both the sides of the white band of the hindwing, though only at the posterior part. The form occurring in Peru lacks the blue spot at the inner margin of the forewings: **reducta** subsp. nov.
- burmeisteri.* **Ch. burmeisteri** G. and S. (110 B a) from Argentina (Tucuman) is smaller than *cyane* and has a more deeply cut out distal margin of the forewings. The blue median spot exhibits a pure blue (without a greenish shine) and proceeds further towards the anal angle. The under surface of the forewings has more sharply delimited dark spots and the hindwings show sharper bands and much violet colouring. The form from Bolivia was denominated **boliviana** by OBERTHUER.
- boliviana.* **Ch. seraphina** Hbn. (= *laurentia* Godt.) (110 B a) from South Brazil and West Colombia (Cauca Valley) has greenish-blue bands on the fore- and hindwings, appearing in lateral exposure almost of a pure green. The very intense blue reflection extends almost upon the whole surface of the hindwings and on the basal half of the forewings. The ♀ resembles the ♂♂ of *lauretta* occurring likewise in South Brazil. The ♂♂ from Colombia have somewhat narrower blue bands on all the wings. According to VON BOENNINGHAUSEN the butterfly occurs only in single specimens.
- seraphina.* **Ch. cherubina** Fldr. (110 B a, b) from Central America and the western part of South America as far as Bolivia, has broader and longer, as well as greener bands of all the wings. The ♀ differs above and beneath rather much from the ♀ of *seraphina*. The form from Bolivia is smaller, darker and has somewhat narrower and bluer bands: **parva** subsp. nov. — **thalsia** Fruhst. from Ecuador (Balzabamba), of which only the ♂ is known, has narrower blue median bands and a bright distal part in which the black submarginal band is especially prominent. Hindwing with two subanal long narrow red spots standing vertically below each other. On the under surface all the black basal and median spots are more prominent, the shape of the very strong anti- and submarginal moon-spot-bands resembles *cyane*.
- cherubina.* **Ch. lavinia** Btlr. (110 B b) from Peru and Bolivia has a marvellous green reflection. The white parts of the median band, in lateral exposure, exhibit a reddish shine. The aberrative form **ornata** Fruhst. (110 b) has a more or less large brownish-yellow subapical spot of the forewings. The ♀ has been discovered by Mr. A. H. FASSL; it varies in the colouring of the light forewing-band similarly as the ♂. There occur ♂♂ among *lavinia* (in *ornata* also?) in which the band on the upper surface, except a white spot at the costal margin of the hindwings, is completely green: **chlorotaenia** ab. nov. (Eastern Colombia, Villavicencio, 400 m, A. H. FASSL).
- lavinia.* **Ch. clothilda** Fldr. (110 B b) from Colombia has short and broad bands of bluish gloss. The blue reflection is not so intensive as in the preceding species.
- ornata.* **Ch. vacuna** Godt. (110 B c) from South Brazil and Paraguay has deep-blue reflection of which only the apex of the forewing is free. The ♀♀ have a full brown oblique band and resemble the *agathina*-♀♀. The brown oblique band varies greatly in the ♂♂. According to VON BOENNINGHAUSEN *vacuna* is not rare at its flying-places. — The Paraguay-form **fluibunda** Fruhst. has the forewing-band dissolved into isolated, roundish maculae; in the ♀ the inner submarginal band on the upper surface of the hindwings is placed more proximally; specimens in which the subapical spots are above and beneath white or whitish, have been denominated **cretacea** ab. **cretacea** by STICHEL.
- chlorotaenia.* **Ch. pavon** Latr. (= *pavonii* Ky.) (110 B c) is distributed from Mexico to Bolivia. The ♂♂ have but little violet reflection. The ♀ has a brown median band of all the wings. Specimens with a grey under surface of the hindwings are circulating by the name of **subtunifformis** Stgr. i. l. — **inunbratus** Fruhst. from Paraguay has smaller subapical spots; beneath, all the wings have more prominent and broadened violet, red and black spots and bands; median band of the hindwings of a lighter whitish-violet; all the wings with two rows of large submarginal moonspots. — **cuellinia** Fruhst. from Mexico is described as follows: ♂ reddish-yellow apical spot of the forewings smaller than in *pavon*, with two nice white proximal dots. Median band more pronounced. Under surface: darker, forewing with 3 distinct whitish-grey, small subapical dots; hindwing with intensive reddish-brown median bands. ♀ very large; under surface: forewing with extensive yellowish subapical spot. Hindwing whitish-grey.
- clothilda.* **Ch. mentas** Bsd. (110 B c) from Central America (Honduras, Chiriqui) is smaller than *pavon* and has an indistinct brownish-yellow subapical spot of the forewings. The under surface, especially of the hindwings, exhibits much more pronounced markings. The ♀ above and beneath resembles extraordinarily an *Adelpha*.
- vacuna.* **Ch. agathina** Er. (110 B d) from Surinam and the Upper Amazon has only little blue reflection. The under surface of all the wings has often very few markings. The ♀ has a very broad yellowish-brown oblique band behind the middle of the hindwings. — The North Brazilian form being slightly different has been denominated **agathis** Godt.
- fluibunda.*
- cretacea.*
- pavon.*
- subtunifformis.*
- inunbratus.*
- cuellinia.*
- mentas.*
- agathina.*
- agathis.*

Ch. kallina *Stgr.* (110 B d) from Brazil (Rio de Janeiro, Santa Catharina and Rio Grande do Sul) *kallina*. greatly resembles *agathina* above, but beneath, especially on the hindwings, it is very different. The ♀ has instead of a band only an oblique row of white dots on the forewings. The larva fully resembles that of *selina*. The pupa has a much less projecting dorsal ridge which, in the middle of the 6th segment, rises to a little prominent obtuse point, slanting from here anteriorly in a straight line, posteriorly in a convex line; the horns are short and obtuse, all the edges with a white margin. — **bertila** *Fruhst.* from Paraguay, founded upon *bertila*. a ♀, has been described thus: larger, ground-colour dark greyish-brown, the proximal white spots of the forewings more pregnant, as well as the black submarginal band of the hindwings. Under surface: on the forewings the black subapical region is reduced, so that only rudiments are yet left beyond the cell, a peculiarity being already met with specimens from Rio Grande. Hindwing with a distinct row of submarginal white crescents which are missing altogether in *agathina* and *kallina*.

Ch. felderi *G. and S.* (110 B d) from Colombia, Venezuela, Bolivia and Peru, has another shape of the hindwings, and differs somewhat beneath. The ♀ has been discovered by Mr. A. H. FASSL in Bolivia (Rio Songo). It resembles the ♀ of *zunilda beckeri*, but it has on the upper surface of the forewing a much broader and differently placed band; beneath it is of much stronger colours and more pronounced markings. — ♀ **mathani** *Oberth.* *mathani*. has a blue oblique band of the forewings. — In **floris** *Fruhst.* from Peru (Pozuzo) the ♂ is above darker blue *floris*. but with purer white spots than *felderi*. Under surface: distal region of all the wings dark violet instead of brownish-yellow, with a complete submarginal black band bearing smaller white spots. Ocelli of the hindwings smaller.

Ch. zunilda *Godt.* (110 B d) from South Brazil has a ♀ varying so much that HEWITSON has been *zunilda*. deceived and has described it as a species of *Catagramma* (*Perisama*). The ♀-form **beckeri** *Hew.* lacks the *beckeri*. large brown spot on the forewings. According to VON BOENNINGHAUSEN it is very rare near Rio de Janeiro, but more common in the more southern provinces. Mr. SCHEIDEMANTEL has repeatedly bred the species from larvae, near Blumenau; nevertheless we have not yet any precise knowledge of the first stages. The butterflies are extremely timid and they nearly always fly furiously about in the breeding cage.

Ch. callianira *Mén.* (110 B f) from Nicaragua has a blue reflection on the whole upper surface except *callianira*. the apex of the forewing. It has a characteristic reddish-brown submarginal band of the hindwings, which occurs otherwise only in such species that have also a yellow median band of the forewings.

Ch. thaumas *Bates* from the interior of Guatemala (not lying before us) resembles *pavon*, though *thaumas*. it is still closer allied to *elis*. From *pavon* it differs by having instead of the orange-yellow subapical spot of the forewings 3 white spots near the wing-apex, and from *elis* by the absence of the orange-yellow spotted median band, and also by a more pronounced blue reflection. The under surface of the hindwings is of an ochreous grey, darkened by brown atoms; in the wing-centre there is an irregular brown stripe, a more subdued and moon-like stripe is running near the distal margin. SALVIN and GODMAN combine this form with the preceding one.

Ch. elis *Fldr.* (110 B e) from Ecuador and Colombia has a rather broad brownish-yellow median *elis*. band of the forewings. The ♀ is not yet known. — **large** *Fruhst.* from Colombia is according to the author con- *large*. siderably larger, the apex of the forewing more prominent, all the wing-margins are more dentate. Distal part of the hindwings lighter with more conspicuous ochre-yellow submarginal macular band remaining distinct and complete as far as to the anal angle (the latter statement does not hold good in all cases). — **fabaris** *Fruhst.* *fabaris*. from Bolivia (Cochabamba in September, La Paz in April) and Peru (Pozuzo), has been described as follows: Only somewhat larger than *elis*, submarginal band of the hindwings above still considerably broader and always existing distinct as far as to the anal angle, whereas in *elis* the band is sometimes only as thin as thread and disappears already at the upper median.

Ch. druryi *Hbn.* (♀ = *laura* *Hbn.*) (110 B e) seems to occur only in Cuba. It is easily recognized by *druryi*. the broad, indistinctly delimited yellow band of the forewing. The light-blue reflection exists on the whole hindwing and at the base of the forewing. — **acca** *Fldr.* from Mexico has a darker upper surface with a nar- *acca*. rower forewing-band, but a broader hindwing-band; the hindwings are extended into a longer point.

Ch. laure *Dru.* (110 B e) distributed from Mexico to Colombia and Venezuela, has a much broader *laure*. white band of the wings, which is continued to the inner margin of the forewings. The ♀ is, as the figure shows, considerably different. The under surface has, in both the sexes, pronounced golden bands. — **lauretta** *Stgr.* *lauretta*. (110 A d) from South Brazil and Paraguay has no reflection and narrower white bands. Specimens in which the yellow subapical spot is separated afar from the median band being of a pure white, are called **hübneri** *hübneri*. *Stgr. i. l.* — According to VON BOENNINGHAUSEN very rare on the Corcovado. — In the Honduras-form **mileta** *mileta*. *Bsd.* the ♂ differs but slightly from *laure*. The ♀♀, however, are much larger, more yellow, the apical spots smaller, more roundish, lighter, the anterior part of the median band of the forewing is of a pure white, the bands of the hindwings are nearly as broad again, the centre of all the wings is lighter with more undulated

majugena. crescent-bands, the orange-red subanal spots are neater. — The ♀-form *majugena Fruhst.* is smaller, has more uniformly coloured wings, narrower white median bands, a darker ochre-yellow apical spot of the forewings and more conspicuous reddish subanal spots of the hindwings. — In *mima Fruhst.* from Colombia and Venezuela(?) the yellowish median band of the hindwings beyond the cell is not overshadowed by brown, remaining on the whole more uniform and yellow of the same width as far as the submedian, the median band of the hindwings is narrower, the yellowish subanal spot larger than in *miletta*. The under surface of the forewings is of a more hazy and darker ochre-yellow hue at the base and in the submarginal region. The larva greatly resembles that of *selina*, the pupa on the whole being also alike, the dorsal ridge rises almost as high as in *laure*, reaching the highest elevation in the middle of the 6th segment, where it forms a prominent point; from here it declines anteriorly and posteriorly in the same way; the horns are shorter than in *laure*; the dorsal ridge is brown only on the 5th and 6th segments, moreover, just like the other edges white-margined.

selina. **Ch. selina** Bates (110 B e) from Brazil has a white half-band of the forewings, which is far remote from the yellow apical spot. — *modica Fruhst.* from Espiritu Santo, Minas Geraes and Rio de Janeiro, according to FRUHSTORFER, is the connecting link between *selina* and *lauretta*: upper half of the forewing-band yellowish, the lower half, beginning from the 3rd median vein, of a pure white, the band of the hindwing narrower than in *selina*, broader than in *lauretta*. Under surface: the yellowish zone beyond the median band, which is distally bordered by a broad dark brown, is very narrow. — *murrina Fruhst.* from Rio Grande do Sul: the reddish-yellow apical spot of the forewings is tapering posteriorly. The median band changes into an entirely dark yellow colour, while that of the hindwings is covered with a yellow hue. Median band of the hindwings considerably narrower, bent more proximally. Median band of the under surface of the forewings yellow instead of white. — Eggs green, globose, with very distinct longitudinal stripes and fine transverse stripes; they are always deposited on the upper surface (on the central nerve) of the leaves, frequently also on the tips of the leaves. The larva resembles those of the European reflecting-butterflies, the strong horns have short lateral and 2 terminal spines, on the back there are 2 short triangular elevations; the grown-up larva is yellowish-green with a green dorsal line and obliquely, anteriorly descending narrow green stripes touching the stigmata and forming posteriorly a short descending vein. The larva has the same habits as its European affinities. The pupa has larger and smaller dents on its back; it is green, finely dotted with white, with dark lines descending anteriorly and touching the stigmata; the dorsal ridge, the wing-edge and its continuation on the segments 5 and 6, the part of the wing-margin situate behind the wing-edge are bordered by brown; the dorsal ridge is on the 4th segment divided into 2 prominent brown stripes running towards the horns. The pupa does not move when being exposed to the light, but is otherwise most mobile, jerking furiously about on being touched. — W. MUELLER denotes this species *laure*; but since the latter does not occur in South Brazil, one of the other species occurring there (*seraphina*, *vacuna*, *zalmunna*, *sultana*, *zunilda* or *selina*) must be meant.

laurona. **Ch. laurona** Schaus from Brazil (Petropolis) has been described as follows: ♂ similar to *laure* (110 e). The wings have the same dark-violet reflection; the orange-coloured band of the forewings is broader and reaches the apex and the distal half of the costal margin. The anterior and distal part of the white band is bordered in brownish-red and distally overtopped before the vein 4 by a large brownish-red spot not reaching the apex. — The statement of the place where it was discovered appears to us to be not authoritative; it is strange that V. VON BOENNINGHAUSEN who had been collecting in this district for more than 30 years, did not discover this species. The description also nearly agrees with *druryi* from Cuba. It may be also identical with *modica*.

thoë. **Ch. thoë** Godt. from „Brazil“ which has not become known to us, has been described as follows: both the wings with a white common band and a small dull eye-spot; hindwings beneath of a silvery grey, appearance and shape of *laurentia*, upper surface of the ♂♂ blackish-brown with a violet reflection, with a common oblique, centrally spotted band; with 2 black undulated lines before its proximal margin. Besides, towards the anal angle of the 4 wings, one notices a yellowish-brown spot with a black dot, and on the last tooth of the hindwings a V-shaped line, and further on greenish colouring. The under surface of all the wings is as in *laure* (110 e), but the 2 black dots at the inner angle of the forewings are absent. Abdomen of the same colour as the hindwings, antennae black with a reddish-brown club, ♀ not differing from the ♂, but without the reflection and the upper surface is somewhat less dark. — This species has not been mentioned by the modern authors; it evidently resembles *lauretta*, though the latter has no reflection.

angelina. **Ch. angelina** Fldr. (110 A c) is smaller than *lauretta* (110 A d), the median band is white, not interrupted, only in the anterior part in the distal half yellow, the white band of the hindwings is narrower, posteriorly very much tapering, on all the wings there are 2 very distinct light submarginal stripes. From the Upper Amazon.

plesaurina. **Ch. plesaurina** Btlr. and Dr. from Costa Rica (Carthago) described according to a ♂, differs from the *griseldis*-form *linda* by a narrower white band of the hindwings, and by the ochre-yellow band of the forewings being in the anterior part not contracted, but considerably narrowed in the posterior half and brightening only before the submedian.

Ch. godmani *Dann.* (110 A d) from Venezuela has been described according to a ♀. The under surface has silvery bands. It is presumably the ♀ of another species, having hitherto been unknown.

Ch. moritziana *Fldr.* from Venezuela differs from *angelina* (110 A c) by the following: band of the forewing light yellowish-brown, anteriorly somewhat curved, posteriorly straight, in the discocellular 2 brown spots, 3 rounded light-brown spots in the apex of the wings, the 2 black moon-spots in the anal angle of the hindwings bordered in blue, at the distal margin 2 buff spots.

Ch. griseldis *Fldr.* (110 A b) from the Rio Negro, the Upper Amazon and from Peru is a beautiful large species with only dull blue reflection on the hindwings and the basal part and the inner margin of the forewings. The under surface has dull golden bands on the hindwings and a similar, large subapical spot of the forewings. The yellow band on the upper surface of the forewings is sometimes interrupted in the anterior part. — In *linda* *Fldr.* from the Rio Negro the blue reflection is absent. — *laura* *Oberth.* is the form from the Upper Amazon, from Goyaz and from the Chanchamayo, *paulana* *Fruhst.* the form from São Paulo. (*plesaurina* may also belong to this species). — *nitoris* *Fruhst.* from Paraguay approximates *linda*, but the band of the forewing is very broad, the inner half white, the outer half ochre-yellow. — For *laura* *Hbn.* from Surinam (?) and Brazil (?) FRUHSTORFER has introduced the name **geyeri**. — *myia* *Fruhst.* (habitat unknown, probably Brazil or the Lower Amazon) is smaller, apex of the wings and anal part prominent, median band of the forewings posteriorly turning yellowish, growing somewhat narrower; the white median band of the hindwings hardly half as broad as in *linda*, which is especially conspicuous beneath.

Ch. zalmunna *Btlr.* (110 B f) from Brazil (São Paulo etc.) is above hardly to be distinguished from *sultana*, though the under surface differs by another shape of the median band of the hindwings. — The ♀-form **butleri** *Oberth.* is the yellow form from Sao Paulo and ♀ fa. *paulistana* *Fruhst.* the white, smaller form from Rio de Janeiro.

Ch. sultana *Foett.* (110 B f), owing to the marking of the under surface, is a very peculiar and isolated species.

56. Genus: **Asterocampa** *Röb.* (= *Doxocopa* *Hbn.*).

This genus comprises the North American „reflecting-butterflies“ which, however, without any exception do not exhibit any reflection whatever. The species of this genus inhabit North America, except one species being distributed as far as the Antilles and another one occurring in Central America. Being already in their exterior different from *Apatura* and *Chlorippe* to such an extent that it is quite impossible to mistake them, they differ besides greatly from these affinities by their interior structure. As a rule, only the first subcostal vein is branched off before the termination of the discocellular, although there are also exceptions occurring; the shape of the male sexual organs, however, differs considerably from those of *Apatura* and *Chlorippe* *). The species are on an average smaller than the genuine reflecting butterflies and exhibit a very uniform exterior. The eggs are deposited in small heaps, they are almost globose, at the top broad and projecting, and have 18 to 20 rather broad vertical ribs between which there are numerous fine transverse lines. The larvae live on species of *Celtis*; they generally resemble the larvae of *Apatura*, they have however, no horns, but star-shaped warts at the head; the abdomen also ends into 2 points. The pupae greatly resemble those of the European *Apatura*. This genus is known by the name of *Doxocopa*, but this name is to be applied to the Papuan (*Apaturina*) *erminea*, and on that account we had to propose a new name in choosing of which we have paid regard to the characteristic protuberances of the head of the larva.

A. lycaon *F.* (= *herse* *F.*, *elyton* *Bsd.*, *texana* *Skinn.*, *proserpina* *Scudd.*) (109 b) from the United States has in the male sex above no distinct eyespot-marking. The ♂ has very much darkened hindwings. — The form **flora** *Edw.* (110 A c) from Florida exhibits in both the sexes a greatly brightened upper surface with prominent dull eyespots on the hindwings. — **ocellata** *Edw.* has distinct eyespots on the hindwings. It is evidently only an aberrative form. — **idyja** *Hbn.* is the Cuban form being above and beneath paler. — The larva is green with greenish-yellow longitudinal stripes and has on each side of the head a yellow, star-shaped small wart; it lives on *Celtis occidentalis*. The pupa is green with yellowish wing-partitions and a bluish-green back. — This species is most variable.

A. celtis *Bsd.* (110 A c) from the United States is the most common species, but it has not yet been discovered on the Pacific Coast. — **montis** *Edw.* (110 A c) differs only by another, though rudimentary eyespot being placed in front of the eyespot on the forewings. — The larva lives on *Celtis occidentalis*, is green with a broad, nearly white lateral stripe and a reddish small spine on each side of the head. The pupa is yellowish-green with more yellowish wing-partitions and 2 bluish lines at the sides.

A. alicia *Edw.* (109 A a ♂, c ♀) from New-Orleans is larger than the preceding species, and has a lighter, more yellow ground-colour.

*) Claspings-organs characterized by the two-pointed uncus, whereas the preceding genus bears only one tegumen-hook. Valve with a strong bent-up spine at the end, whereas there the valve is hairy, but otherwise unarmed. (FRUHSTORFER).

- leilia*. **A. leilia** Edw. (110 A c) from Arizona has on the hindwings a row of, and on the forewings 2 eyespots with white pupils. — **antonia** Edw. (110 A c) is smaller with a lighter and more variegated upper surface owing to numerous light spots.
- argus*. **A. argus** Bates (109 b) from Guatemala and Honduras greatly deviates from the preceding species by the very much cut out distal margin of the forewings and by quite a different scheme of markings. It varies somewhat, especially the yellow band of the forewing is inconstant, being sometimes more prominent than in the figured specimen. Specimens with a distinct yellow band, occurring in both the sexes, are called **armilla** Fruhst. Seems not to be common.

M. Charaxidi.

We have but little to add to what has been said about this group in Vol. I p. 168—69 and Vol. XIII. p. 122—23. The butterflies mostly exhibit an uncommonly clumsy, strong thorax, bearing the very thick and strong flying-muscles. The antennae are always quite gradually thickened to a moderate club, but have a strong shaft. The abdomen often adheres to the powerful thorax only like a small appendix. The flight is very powerful, though not elegant, rumbling or tumbling, with long-striking flaps of the wings, quite dissimilar to the flight of the *Apaturidi* which dart along with stretched wings. When holding the butterflies, which are generally of a considerable size, between the fingers, they develop great efforts to free themselves, and in the net they mostly flutter furiously about. They disdain flowers, but go on fruit, saps, excrements and baits by which they often get so boozy that one can easily grasp them by the thorax itself with the pincette and kill them by a pressure, whereas otherwise they are extremely timid. They are mostly always of imposing colours, very often with a dark under surface decorated by metal colours. — The larvae, frequently of a green colour, are nude, granular or with quite short hair; the head mostly exhibits short horns; the neck is often strangulated, the back may rise in pointed protuberances; at the tip of the tail sometimes two knobs, points or long appendages. — The pupae are also quite different from those of the *Apaturidi*: not bilaterally compressed, but twisted round, berry-shaped, with mostly quite short abdominal part being shoved together, resembling in the shape rather the pupae of *Danaiidi* than those of other *Nymphalidae*, without any protuberance and points, with quite smooth surface. Except the northern parts of North America and Asia, they are distributed almost over the whole world, except Europe, where they only inhabit the southernmost extremity; their chief range, however, are the tropics of both the hemispheres. Some species are extremely rare and belong to the most highly esteemed objects in collections. (A. SEITZ.)

The *Prepona* are large and brilliantly coloured butterflies of a black ground-colour and, in the common species, mostly with a metallic-lustrous, bluish-green longitudinal band across both the wings. In some species the wings are transversed yet by a series of yellow submarginal spots, and in two Andine species we notice a red transverse band (similar to that of *Agrias*) on the forewings. The *Prepona* evidently replace in South America the palaearctic *Charaxes*-form with which they are so closely allied in the veins that there are but few important structural marks by which they differ from *Charaxes*.

57. Genus: **Prepona** Bsd.

In *Prepona* the forewings are mostly drawn forth at the apex, somewhat in the shape of a sickle; the hindwings are never caudate, but always rounded off. The antennae quite gradually change into a slender club. The precostal of the hindwings is from the very bottom bent distally, while in *Charaxes* it rises in a straight line. The cells of both the wings are closed by a fine posterior discocellular disemboing on the forewings distal from the bifurcation of the medians, on the hindwings proximal from it. The tarsus of the ♂♂ is almost as long as the tibia, in *Charaxes* always shorter. The amazingly close affinity expressed by the structure is also displayed by the shape of the larvae being built according to the same type and differing only in single details; so for instance in the longer tail-fork and the more strongly developed fourth segment, while the three first ones are suddenly tapering off behind the head. On the head there are only two instead of four horns turned hindward. We as yet know very little about the larva, and probably only the larvae of the four most common species are known (*demophon*, *meander*, *antimache* and *chromus*). They live, according to V. BOENNINGHAUSEN on Anonaceae and Abacata-trees. According to A. SEITZ (Wiesbaden 1893) they have a curious shape; behind the head there is a neck-like depression followed by a gibbous elevation, the posterior end of the insect being drawn out into two appendages, which are apart when at rest.

The *Prepona*-larvae most remarkably are without spines, i. e. according to modern views, the spines are stunted, whereby this genus shows a certain affinity to *Apatura*, being also confirmed by the powerful structure and the blue reflection of the butterflies, by their flight and habits etc.

HAHNEL also mentions (Iris 1890 p. 290) with respect to the affinity to *Apatura*, that in the *Prepona* „the *Apatura*-type is more distinctly pronounced in the tropics, than in the *Apatura* themselves, which likewise occur on the Amazon, but are somewhat excelled in the beauty of colours and the size by their northern cousins“.

According to HAHNEL (Iris 1890 p. 308) certain *Prepona* are to be noticed by a vanilla-odour „occurring often in species with a deep, intensive blue“.

The egg of *Prepona chromus* Guer., according to FASSL, is of the size of an egg of *Sphinx ligustri*, being globose, of a shiny white, with many fine pores. The micropyle relatively large and to be seen with the naked eye. The little larva when just crept out is about 2 mm long, of a greyish green; the diameter of the head is larger than that of the trunk which is tapering off backwards. At the third ring there is an elevation

set with small hairs, which corresponds about on the whole to the description of grown-up *Prepona*-larvae being, according to Dr. SEITZ, provided with a depression behind the head.

The genus exclusively comprises species of an uncommonly strong and, at the same time, regular structure of the body. The wing-contour is likewise rather uniform (the forewings always pointed, sometimes projecting like a sickle) and in more than two thirds of the species even the magnificent blue colouring of the median part of all the wings.

As to the wing-contour, the bluish-black *Prepona* resemble the genus *Aganisthos*, while the variegated species, by their slight apical rounding, form the transition to the *Agrias*, being celebrated for their colours, with which they also share the same habits and which always exhibit very much rounded forewings.

Like the palaearctic *Charaxes*, they live in the woods and are fond of rotting fruit or excrements, their wings also produce a crackling noise like thick paper when being folded together, what we have also mentioned already in Asiatic and Australian *Charaxes*.

In Santa Catharina I observed *Prepona* in all the larger forests. The butterflies were, however, by no means common and still less they formed a characteristic feature of the landscape, like the Heliconids and Morphids. On the contrary, the *Prepona* lived hidden and timid in the forest-gloom and nearly always in solitude. The only occasion for observing them was when they came flying to small trees in order to pilfer from the emanating sap. Their most favourite meeting-place was the spot where the sweet, fermenting sap was emanating from the holes which small beetles had bored into the trees. If such sap-trees, the so-called „Waldschenken“, had once been discovered, we could safely depend upon *Prepona* flying to them in a few minutes, especially in intensive sunshine. Then there was always something mysterious about their coming and going. The *Prepona* are by no means gregarious. When *laërtes* or *demophon* were drinking from a sap-hole, and another specimen wished to come near it, there was always a short fight. If *Prepona* are intended to be taken in numbers, it is necessary to clear a piccade (a hidden path) in the woods by means of the Bush-knife, at best along small water-courses, and to lay out overripe or rotting fruit. After one or two days the butterflies appear tossing greedily upon the savoury meal. In places where the forest is very dark, they forget their customary timidity over their greediness and eager desire to drink and are easily captured by twos or threes at one fruit or bait.

Near Pebas on the Upper Amazon, Dr. HAHNEL has found nine species of *Prepona* together. They were, beside *Morpho achilles*, the largest of the species that met there at the bait. When they flew to a leaf, they always settled at the upper end, according to their habit of resting on the trunk with the head turned downwards. It was then a charming sight when next to their unrivalled, towering whitish-grey wings there appeared the green under surface of a *Catonephele* or the black and white of a *Pyrroggyra*. On the other side sometimes an *Ageronia* spread out its wings, or an *Adelpha*. Of all the neotropical butterflies, the *Prepona* have, according to HAHNEL, the fastest and wildest flight, as we may easily suppose when regarding their stout, strong thorax. Whereas the Morphids are far-roving species flying for hours in one direction and being, therefore, not even frightened by wide sheets of water, the *Prepona*, like most of the Nymphalids, are fond of remaining near their breeding-place. There they are at home, and it seems that they are kept back by the fondness of their home and a somewhat faint-hearted feeling, so that they are very seldom seen reconnoitring to remote groups of trees.

They generally very often repeat their flying expeditions; they very quickly scent the bait laid out by the collector, descend to the ground and are cheated and captured there. But even when being chased up they do not fly far away and hide in the nearest thicket with their wings clapped together, in order to return rather obstinately to their former place. This habit I also noticed in *Prothoë francki* Godt. in Jaya and some *Charaxes* in Siam. For hours I was standing in the highlands of Lagos or in the river- dales of the coast-region in the forest, in order to wait for the butterflies. In the meanwhile I became aware of many other mysteries of that untouched nature there. In great numbers parrots flew from one Araucania to another, or a glistening green tree-snake was wriggling along the branches. Beside the *Prepona* there appeared occasionally a *Caligo martia*, and *Opsiphanes sulcius* or *fruhstorferi* were also enticed.

Like *Prothoë francki*, the *Prepona* have the same peculiar habit of drinking with their heads turned downward, at what already Dr. HAHNEL (Iris 1890 p. 290) and OTTO MICHAEL (Iris 1894 p. 220) have been hinting.

The latter also reports the interesting fact that a *Prepona pheridamas* returned to the same place every day for 2 months. In Santa Catharina the appearance of the *Prepona* depends on the season, they grow common only during the southern midsummer, in December, and then they are met until the end of March. HAHNEL (Iris 1890 p. 276, 277) reports of *Prepona* arriving more frequently at the bait beginning from December, near São Paulo on the Upper Amazon. JULIUS MICHAELIS, according to his verbal statement, has come across numbers of them in Obidos already in August. MABILDE reports that *catachloa* and *chalciope* occur in Rio Grande do Sul during the whole summer, and *miranda* in summer and autumn. SEITZ (Eine Lepidopterologische Reise um die Welt, Wiesbaden 1893) met them in the middle of March near Santos and writes: „Their rapid

flight and their endeavours to remain in a considerable height prevent the blue of the upper surface from becoming conspicuous in a similar way as in the *Morpho*“.

Most of the *Prepona*-species inhabit the hot lowlands, some few prefer the mountains.

The beautiful *P. garleppiana* Stgr. was discovered in altitudes of 1500 to 1800 m, its nearest ally *neoterpe* Hbnr. was captured by OCKENDEN during the rainy season, in November, still at an altitude of 10 000 feet near Limbani, Carabaya, Peru. A ♂ of *eugenes laërtides* Stgr. in the Tring-Museum, was taken by SIMONS in August or September 1901 near La Merced on the Rio Toro, Peru, at an altitude of 3000 m. It may be that both the collectors are mistaken in the statement of the altitudes.

A sure fact, however, is that FASSL has found a *Prepona chromus* yet at an altitude of 2100 m in Colombia, and according to him *chromus* is the highest flying of all the blue *Prepona* forms that have so far been observed here.

About the vertical range of some Bolivian species FASSL reports (Entom. Rundschau 1913, April p. 44):

„As to the enormous height to which the red *Prepona* fly, the magnificent and variegated upper surfaces of which evidently do not agree at all with the other butterflies occurring there, a comparison of the animals in their sitting position issues a most striking similarity of their backs: silvery white dots and streaks on an ochreous, reddish or black ground. I captured for instance on a self-made road of 4 km length in the dark primeval forest of the North-Yunga in Bolivia, at an altitude of 1700 m, the following species of butterflies, in the course of 6 months: *Adelpha saundersi*, *Prepona buckleyana*, *xenagoras*, *garleppiana*, *Opoptera bracteolata*, *Eryphanes zolvizora*, *Caligo phokilides*, *Lymanopoda albomaculata* and *albocincta*, several species of *Pedaliodes* being „mildewed“ on their backs, *Daedalma dinias* etc.“

I am in doubt whether these white and silvery spots of the backs of the preceding animals are perhaps adapted to the water-drops of their home in the primeval forests of the mountains being eternally humid and dripping with wet. The *Prepona* which fly 800 m lower in the woods of the hot valleys, in spite of the much greater number of species, do not show one single back being so intensely dark and decorated with silver, neither does any *Adelpha*, *Brassolid* or *Satyrid* exhibit such a conspicuous likeness of colours on their backs, as the above mentioned alpine animals of the same genera.

omphale amesia Fruhst. being covered with violet reflection originates from Lita in Ecuador from an altitude of 3000 feet. About the occurrence in the Amazon-district we learn from MICHAEL that of 9 species (*demophon*, *antimache*, *meander*, *laërtes*, *gnorima* [recte: *omphale*], *eugenes*, *pheridamas*, *dexamenus* and *licomedes*) the latter two do not fly on the Lower Amazon. From Surinam I possess, however, *dexamenus* and *licomedes*, and from French Guiana *licomedes*, so that *licomedes* might also occur on the Lower Amazon, where it is perhaps met only very rarely and will be discovered yet later on.

The black and blue *Prepona*-species are, at least generally, widely spread. Owing to their strong wings, they are most fitted to distant excursions. They all inhabit, without any exception, the tropical and neotropical zone, Mexico being the northernmost range, South Brazil, Paraguay and Bolivia the southernmost range. Of all the species known, *meander* has the greatest distribution, being the sole species that is nowhere absent from the northernmost confines to the southernmost, except the Antilles. Next to it are *demophon*, *laërte* and *antimache*.

Several species, such as *licomedes* and *dexamenus* do not pass beyond the proper tropics, others are local as for instance *chalciope* inhabiting only the more temperate latitudes, *deiphile* occurring only from Espiritu Santo to Rio, *buckleyana* living exclusively in Peru and Bolivia. Central America also has its special forms in *phaedra*, *lygia* and *camilla*.

Some species, probably the phylogenetically oldest ones, are very constant, others again, very likely the younger forms, such as *laërtes*, *omphale* etc. are still in the state of fluctuation and evolution. Hardly any specimen is like the other. For such species there are certain centres of races to be distinguished in the neotropical district. Within these centres there are rather congruent directions of variability noticeable, which cease whenever a species passes over to another, adjoining district. As far as our faunistic knowledge suffices, we can distinguish six provinces modifying the development of a species. They are:

- | | |
|---|--------------------------------------|
| I. Central America from Mexico to Panama. | IV. Surinam and the Amazon district. |
| II. The Antilles. | V. Southern Brazil. |
| III. The Andine region. | VI. Paraguay. |

We notice in:

- | | |
|--|--|
| I. Large forms with faded colours. | IV. Inclination to yellowish colouring. |
| II. Reduction of the blue colouring. | V. Small non-variegated specimens. |
| III. Large specimens of intense colours. | VI. Small and pale specimens resembling certain forms of the dry period. |

The maximum of development in the number of species and beauty of colours is attained by the *Prepona* in Peru and Bolivia. There we find 12 species, i. e. as many as in the whole enormous Brazilian Empire.

Then follows Colombia with 10, the Amazon district and Central America with 9 species each. Paraguay has 5 or 6, and the Antilles only 3 or 4 species.

On the whole we are already acquainted with the *Prepona*-species, although enormous districts, especially those of the affluents of the Amazon River and some Brazilian Provinces and especially the Antilles, are still to be explored. The number of the local races being still hidden in these regions, however, will probably increase yet considerably in the next decades, when the geographical and commercial opening up of these regions will have made further progress.

All the *Prepona* bear hair-tufts on the hindwings, the colour of which varies according to the group of species. By this hair-tuft the genus differs from the Indo-Australian *Charaxes*. In the frequent blue species the hair-tufts are parallel to the surface of the wings, in some species, especially the variegated ones, however, they are raised steep and shaggy, as in *P. laërtes*, the *Agrias*. GODMAN and SALVIN make use of the colour of the sexual tufts as a mark of separation for the groups of species. When considering only the Central American species, this separation is also easily carried out. In some Brazilian species, however, we meet already within the species itself forms with grey, yellowish and black hair-tufts.

But on the whole, the examination of the easily attainable species resulted in the fact that the two groups of species separated by GODMAN and SALVIN by reason of the colouring of the scent-tufts, are also anatomically sharply separated. Thus an insignificant mark being in other genera systematically useless in every instance, offers in the *Prepona* a precious hint for the great anatomical difference of the sexual organs. On the comparative examination of the clasping-organs, the surprising result arrived at was that the species with black hairtufts, in spite of their extremely similar scheme of markings and the homogeneousness of the colouring on the upper surface, exhibit considerable differences in the structure of the sexual organs. But the above more variegated species of the genera bearing yellow hair-tufts, are so very divergent in their colours that they have so far been distributed upon two genera, and are so congruent in the structure of the sexual organs that we must, as it seems, attach a specific importance to quite insignificant marks, such as the changes of the periphery of the valve, in order to harmonize the specific difference which is so conspicuously manifested in the exterior, also with that of the sexual organs. As for instance, the structure of the species hitherto circulated as *Agrias sardanapulus* and *claudia* is hardly to be distinguished from that of the *Prepona laërtes* and *omphale*. We may, therefore, suppose that the darker and more plainly marked species of the *Prepona demophon*-group are already consolidated, while the variegated species of the *Prepona laërtes*-series are still in full evolution. According to what has been said so far, it is not to be wondered at, if it turns out that the species bearing likewise yellow tufts and having hitherto been comprised by the name of *Agrias*, belong to the *Prepona laërtes*-group. Dr. SCHATZ once mentioned the entire uniformity of the veins in „*Agrias*“ and in *Prepona*. The examination of the clasping-organs having resulted in their analogy with *Prepona*, the name of „*Agrias*“, was in future to be degraded to the denomination of a group of variegated *Prepona*, unless we attribute more importance to the more slender form of the larvae of the *Agrias*.

We, therefore, have to distinguish anatomically:

A. *Archaeoprepona*. Uncus with a chitinous, generally laminiform, spineless, ventral appendage. Type: *A. demophon* L.

B. *Prepona* (*Agrias*). Uncus with a peculiar, spined ventral appendage resembling the flower-heads of the species of plants *Phyteuma*. Type: *P. laërtes* Hbn.

The shape of the valves and the uncommonly strong and long penis show an analogy to the *Apaturidi*, but this is again restricted by the short saccus.

According to the colouring of the antennae, there are also two groups of forms to be distinguished:

A. Antennae red: *Anaeomorpha*.

B. Antennae black: *Prepona*.

A. Group of Species *Anaeomorpha* (ROTHSCHILD, Nov. Zool. 1896 t. 13 f 1).

Veins like in *Prepona*, the first subcostal veins free, not united as is *Anaea*.

P. splendida Rothschild. (103 e) from the Rio Cachyaco, resembles beneath a *Prepona meander* (111 e) *splendida*, with a lighter basal half and a dark-brown distal zone separated by a black line. Costal as far as near the wing-centre white; above deviating from all the *Prepona* by the cell of the forewing being suffused with blue, the magnificent longitudinal band traversing also the cell of the hindwing. The forewing is characterized by three blue transcellular maculae. Habitat Peru.

B. Group of Species Prepona.

Section *Archacoprepone Fruhst.* Hair-tuft of the hindwings black.

P. demophon, the most common species having been known the longest, has a plainly marked under surface, preponderantly yellow or ochre-yellow with effaced black spots, indistinct black lines and a silvery grey hue varying according to the locality. The ♀ is always larger, beneath with less black, preponderantly yellowish with effaced reddish-grey hue. The specimens decrease in size in the direction from north to south. The species is very rare in Mexico and ascertained as far as Southern Peru and Bolivia. On the Atlantic side *demophon* reaches from Guiana to Santa Catharina, Rio Grande do Sul and Paraguay. Tegumen with a short compact uncus-point the dorsal basal part of which is very much chitinized and provided with a deeply indented

centralis. comb. — **centralis Fruhst.** is known to me only from Honduras. The form appears considerably larger than Surinam-specimens and is never beaten by *muson* (111 a) in the extent of the wings. The median band, especially of the hindwings, is more extensive than in the nomenclatural type from Surinam, more greenish and golden than blue. The subapical spots of the forewings of the ♂♂ larger, almost circular, isolated, in the ♀♀ like diffuse spots, narrower than in Surinam-specimens. Under surface entirely lighter, preponderantly greyish-violet instead of ochre-yellow, with prominent blue-pupilled ocelli of the ♀♀. According to GODMAN and SALVIN already very rare in Mexico. In the Coll. STAUDINGER there are specimens from Yucatan and Venezuela. —

muson. A series of forms from Panama already sides with **muson Fruhst.** (111 a), the Andine territorial form with the type from Colombia. I have also ♂♂ from Ecuador at hand, and STAUDINGER mentions specimens from South Peru. The *demophon*-race of the northern Andes is considerably larger than specimens from Surinam. The median band of the upper surface of the wings is broader and lighter, more golden green; the under surface is distinguished by an especially pronounced and more glossy submarginal region being traversed by a very

demophon. dark reddish-brown band which is hardly noticeable in Surinam-specimens. — **demophon L.** (111 a), the nomenclatural type, is very common in the Amazon district and in all the three Guianas. Specimens from Mato-

sysiphus. Grosso and Bolivia do not differ considerably from those from Surinam. — As **sysiphus Cr.** a form is described

thalpius. with especially broad and darkened brown places on the under surface of both the wings. — Also **thalpius Hbn.** is based upon darkened, deviating specimens with a beautiful reddish-violet hue beyond the cell of

xyniatus. the forewing and in the median and basal zones of the hindwing. — **xyniatus subsp. nov.**, distinguished by large transcellular spots of the forewings and conspicuously broad light-blue median band of a very intense golden green lustre. The under surface exhibits but quite faint greyish-silvery marbling, being still more effaced than

pamenes. in *extincta*. Bahia; varies also in Minas-Geraes. — **pamenes subsp. nov.** inhabits Minas-Geraes and Espírito Santo, probably also yet Rio de Janeiro. ♂ with more irregular, smaller transcellular spots and narrower,

extincta. darker blue bands of the forewings than *xyniatus*. — **extincta Stgr.** (111 b), originally based upon specimens from South Brazil (Blumenau) is also found in Paraguay. As a rule of a small size with preponderantly greyish-violet hue of the under surface of the ♂♂ and yellowish of the ♀♀. The black median lines, especially in the

catachlora. ♀♀ effaced. Larva on Anonaceae and Albacata-trees (Persia gratissima). — **catachlora Stgr.** (111 b) is found from Minas Geraes, beside *P. demophon extincta*, and was bred by Dr. WILH. MUELLER from larvae differing from *demophon*. In Rio Grande do Sul *catachlora* is common. The under surface makes quite the impression of a form of the dry season or of a cold period of *P. demophon*, being easily noticeable by greenish places bordered by beautiful parts of a silvery greyish-violet lustre. The subapical spots of the upper surface are

zoranthus. smaller, but like the narrower bands more intense and of a darker blue gloss than in *demophon*. — In **zoranthus subsp. nov.** from Rio Grande do Sul there is sometimes only a blue subapical spot, and the median band of the forewings is very much narrowed. The chitinous part at the back of the uncus less sharply dentate, the other parts, however, agree so exactly with *P. demophon* that *catachlora* can only be considered a form of condition of *demophon*, but by no means, as was hitherto done, a species of its own. (A ♂ from Espírito Santo was examined.)

P. phaedra is an isolated species with a likewise unmarked, but darker under surface than *P. demophon*. The upper surface is like that of *P. tyrias* (111 b), but the blue median band of the hindwings is narrowed towards the anal angle, and the under surface just as intensely grey as in *P. crassina* (111 c), though without

aelia. the black spot at the submedian of the forewings. Two local races: **aelia Godm.** and **Salv.** described according

phaedra. to a ♂ without blue subapical spots of the forewings, from Mexico, and **phaedra Godm.** based upon a ♀ from the Volcano Chiriqui. One specimen of my collection exhibits small dark-blue subapical maculae of the forewings.

P. antimache is always met beside *P. demophon*, although it does not reach Mexico in the north. The magnificent band of the upper surface is of a purer blue, but it has only exceptionally a greenish-golden reflection. The under surface is characterized by our figure of *tyrias* (111 b) and varies according to the habitat from preponderantly effaced ochre-yellow (Amazon, Surinam) to light silvery-grey (South Brazil). The black part at the inner margin of the forewings appears more extensive than in *P. demophon*. In some insular

races there are yet remarkably darkened, brown-tinged places noticed, especially in the basal region, being absent in continental areal races. Shape of the valve broader than in *demophon*, the uncus dorsally smooth. — **gulina** *Fruhst.*, the northernmost branch, occurs from Honduras through the whole of Central America, *gulina*, even as far as Colombia, at least as much as I was able to ascertain (Cauca Valley) from the material. The upper surface, however, resembles *demophoon* *Hbn.* from Surinam. The shape of *gulina* is, however, considerably larger, all the blue bands are very much broadened and, in the ♀♀, preponderantly of a golden green reflection. The under surface has the same purely white cell and an extremely broad white band before the cell-apex of the forewings, as *crassina*, the cell of the hindwings and the white discal band are even of a still purer and broader white than in *crassina*. In common with the continental forms, *gulina* has the centrally interrupted black anal spot of the forewings and the minute white submarginal dots in which we find no blue traces whatever. — **demophoon** *Hbn.* is the name of the territorial form from Surinam and the Amazon. The blue *demophoon*, apical spots of the forewings are decidedly smaller than in *gulina*, the under surface more uniform, effaced pale ochreous. The name of *demophoon* sounding very similarly to *demophon* *L.*, the name of *amazonica* *Stgr.* has been introduced for the Amazon race, though this denomination will hardly be maintainable. — **andicola** *Fruhst.*, the *antimache*-form inhabiting the Andes, greatly approaches *gulina* from Central America, but differs from it by the still larger size and the somewhat narrower, though more intensely blue discal bands of the upper surface. The under surface resembles *gulina* by the very broad, whitish bordering of the black discal bands of all the wings, on the hindwings, however, the marginal zone, especially in the ♀, is still more intensely white, furthermore, all the black dots and lines are much stronger. Only the anal angle of the forewings is dark yellow, the black anal spot very large and the submarginal ocelli of the hindwings are very much larger than in *demophoon* and *antimache*, in the ♂ reddish-yellow, in the ♀ greenish-yellow with distinct blue dots. *andicola* differs from *antimache* besides by the lighter, more white than grey-mingled basis of the under surface of the hindwings. The type originates from Venezuela; I add yet specimens from Ecuador and from Pozuzo (Peru). — **thebais** *subsp. nov.* joins *demophoon*, though it is of a larger shape and the under surface *thebais*, of the hindwings more variegated; the forewings exhibit distinct white transcellular parts. Mato-Grosso (Brazil). — **lyde** *subsp. nov.* differs from *thebais* by decidedly narrower blue bands of the upper surface, resembling already *lyde*, *tyrias* (111 b). As to the habitus, *lyde* approximates the Andine and the Mato-Grosso races; the subapical spots of the forewings are just as prominent as in *andicola*, *thebais* and *gulina*, thus contrasting with the *demophoon* greatly wanting of blue. The under surface of the hindwings, however, exhibits again connections with the South Brazilian *tyrias* by an especially bright, light silvery grey. Bolivia. — **antimache** *Hbn.* occurs from Bahia to Rio de *antimache*, Janeiro. The blue preapical maculae of the forewings are in the ♂♂ more prominent than in *demophoon*, more roundish, the magnificent band grows narrower. Beneath, the effaced ochre-yellow is confined to the median zone of the forewings. — In **tyrias** *subsp. nov.* (111 b) the blue median band is decreasing in both the sexes, and the *tyrias*, proximal subapical spot is always intermixed with whitish or greenish, no more intensely blue as in the vicarious types. Nomenclatural type from Rio Grande do Sul, also from Santa Catharina and Paraguay in my collection and presumably advancing to the north as far as São Paulo. — **insulicola** *Fruhst.* (112 c). On the West Indian Isles, *insulicola*, *antimache* *Hbn.* has changed into a most characteristic local race. The blue discal band; especially on the forewings, is narrower, and on the hindwings also much shorter than in the continental vicarious types. The discal bands are not deep blue, but peculiarly light green with a violet reflection. The black distal margin of the hindwings appears very much broader than in *antimache* owing to the receding blue discal colour, the ciliae are lighter, more yellowish and stand more densely than in continental specimens. The under surface has greatly, changed, being more variegated than in *antimache* and the discal bands being brown instead of black, and stronger. The white bordering of the brown discal band is extremely broadened, and there is a distinct, white submarginal band noticeable on all the wings, in place of which there are only white dots on the forewings in *antimache*. The black spot in the anal angle of the forewings is centrally not interrupted, but forms a compact mass in which a yellowish-brown, almost four-cornered macula is embedded. The black streak in the middle of the forewing-cell runs almost rectilinearly, while in *antimache* it is sharply angled. The hindwings are, furthermore, decorated with intense blue dots, the 4 last of which are the largest and provided with distinct reddish-brown ringlets. The occurrence of really deep blue dots appears to me to be very important, because GODART in his description of *amphitoë* speaks positively about small dots of a bluish (bleuâtre) colour. Hayti. In the Berlin Museum there are 3 ♂♂ fully agreeing, especially on the under surface, with my type and are taken near Port au Prince. — **ilmatar** *subsp. nov.*, another insular race from Trinidad (Port of Spain). ♂ with a somewhat *ilmatar*, longer median band of the upper surface which is placed extremely steeply and seems connected with *P. crassina* *Fruhst.* from Cuba. Preapical spots smaller than in the *insulicola*-♀ figured 112 c. Under surface preponderantly dark grey, but nevertheless yet with antimachoidal silvery grey, band-like patches. Hindwings just like those of *insulicola*, distinguished by magnificently blue-pupilled ultramedian ocelli. — **crassina** *Fruhst.*, *crassina*, (111 c) is so closely allied to *phaedra* beneath that it might be considered a geographical form of the Central American species, if it were not separated from it by a large black area at the inner margin of the forewings. The black zigzag-line of the hindwings is more prominent, too, more like *P. antimache*. The upper surface

resembles *P. antimache*, but the blue subapical spots of the forewings are almost vertically placed below each other and the median band is likewise set more steeply. — The valve is somewhat more slender than in *antimache tyrias* Fruhst. from Rio Grande do Sul. From Cuba where it is rare.

P. camilla, an extremely localized species of which only few specimens have become known. Its relationship to *P. antimache* is about like that of *P. phaedra* to *P. demophon*. *camilla* may be considered as the species being the most conspicuously decorated in blue we know, and in no other species we find such a luxuriant, magnificent area of a greenish lustre, as in *camilla*. The blue zone as well as the preapical blue vary according to the locality of the two territorial forms. — *camilla* Godm. and Salv., described from Nicaragua and Panama, bears two elongate, narrow blue preapical stripes and a magnificent band excelling but slightly the extension of that of *P. demophon*. Under surface preponderantly light ochre-yellow with a brown longitudinal band of the forewings, being divided at the posterior radial. — *metabus* subsp. nov. *) shows three light-blue, broad streaks and a more extensive magnificent band of the forewings than *camilla*. The under surface is conspicuously differentiated by brownish-yellow colouring with extensive yellowish areas of a silvery gloss. Colombia, originating from a so-called „Bogotá-consignment“, but surely taken near Muzo, from where it lay likewise before me, out of an altitude of 7 to 800 m from more modern collections.

P. meander. One of the most noted species and beneath easily discernible by the sharply delimited dark-brown distal half contrasting strongly with the lighter, whitish or grey basal zone of a silvery gloss. There is a conspicuous whitish, roundish or crescentic spot at the subcostal of the hindwings. The upper surface differs but slightly from that of *P. demophon*, but light greenish or bronze-glossy bands, as in *P. demophon* and *P. antimache*, do not occur. The ♀ beats the ♂♂ in size and exhibits more imposing transcellular stripes of the upper surface of the forewings, and beneath, the outer wing-half presents itself somewhat more faded brown. According to the locality, the size of the specimens varies, reaching the maximum of development in the Andine region, the minimum in the South Brazilian races. The geographical range coincides with that of *P. demophon*. In the north, Mexico is yet inhabited by the species, in the south, Rio Grande do Sul. — *phoebus* Bsd., the northernmost branch, described from Guatemala, is lying before me from the Volcano Chiriqui and the Cauca Valley from Colombia. The preapical blue spots of the forewings somewhat more extensive and of a brighter lustre, and the under surface of the forewings in their outermost part somewhat more fallow than in the Surinam-form. — *meander* Cr. (111 c) of which we figure a ♀ from Surinam, the habitat of the nomenclatural type, occurs in the same form also on the Lower Amazon. A similar race is found on the Isle of Trinidad. — *megabates* subsp. nov. is in the male sex as large as the figured Surinam-♀, the blue spots distal from the forewing-cell appear somewhat smaller, and the basal zone of the under surface of the hindwings is somewhat darkened. Peru, Bolivia. — *megacles* form. nov. inhabits Central Brazil. Both the sexes are beaten in the habitus by the vicarious types mentioned so far, being coincided by a reduction of the blue magnificent bands. The basal zone of the under surface of the forewings mostly appears covered by dark-grey or violet, the antiterminal margin of the forewings more sharply defined than in *meander* coinciding thereby with *phoebus* and *megabates*. Type from Espiritu Santo, at hand also from Minas-Geraes. Near Rio de Janeiro not very common. — *soron* subsp. nov. (111 c) is based upon specimens from Thereopolis in Santa Catharina. The shape of the wings grows more pointed and narrower than in *megacles*, the blue spots and bands of the upper surface are still more reduced than in the Central Brazilian areal form. On the under surface of the forewings, the antiterminal margin is confluent with the dark ground-colour as in *meander*. Hindwing generally lighter brown with fading distal zone. — *amphimachus* is here deprived of its rights as species, which BATES, KIRBY and STAUDINGER have assigned to it, whereas I took it to be a side-form of *P. meander*, following the example of GODMAN and SALVIN. The form *antimachus* is generally more common, especially in the Andine region, not at all rare in Mexico, very common in Central America, whereas the proper *meander* are of a rare occurrence there. The wing-contour is deviating, more roundish, the blue band is more extensive in the northern races, the under surface nearly always ochre-yellow, the median band always pregnant, the distal zone sometimes darkened, but even in the most melanotic races never extensively brown and sharply defined as in *meander*. Basal region of the hindwings especially in the ♀ always faded yellow instead of whitish. *amphimachus* has always the subcostal white spot of the hindwings in common with *meander*. *amphimachus* occurs at the same time with *P. meander*. Vertically it rises up to 2000 m, whereas *meander* seems to be homed more in the lower regions. — *cinctus* Fruhst. was already in 1904, considered by myself to be a form of the dry period of *P. meander*. It is indeed the northernmost branch. Habitus smaller than the Central American sister-race, the subapical blue spots being also reduced. Under surface preponderantly greyish violet, as well as the distal half of the hindwings. Mexico. — *amphiktion* subsp. nov., an excellent geographical form, beating in size the Amazon- and Surinam races. The magnificent band of the upper surface of a lighter and more glossy blue, the transcellular spots very large. Under surface of the ♂♂ extensively clouded with brown, whereby a deceptive likeness with *meander* is produced; ♀, however, immediately distinguishable from *amphimachus*.

*) Metabus, the father of Camilla.

by a light loam-yellow distal part and a glossy proximal patch. Type from Honduras, also from Costa Rica and Panama in my collection. Mr. FASSL sent me specimens from the Rio Aquaca Valley from an altitude of 2000 m in Colombia, which are not to be distinguished from Honduras-specimens. — **amphimachus** *F.* (= *amphimache* *Hbn.*) (112 c) we have figured according to a relatively small ♂ from Surinam. The ♀ is always more conspicuous, having a more intensely loam-yellow under surface than *amphiktion*. Common in Surinam and on the Lower Amazon, especially near Obidos. — **symaitus** *subsp. nov.* surpasses in the size of the ♂♂ the most considerable ♀♀ from Central America and Surinam. The magnificent band of the upper surface is decidedly broader, the transcellular spots larger, the under surface with a preponderantly reddish median band. Ecuador; presumably also in some districts of Peru. — **magos** *subsp. nov.* occurs in Bolivia and Mato Grosso, the wings are no more so extensive as in *symaitus*. The blue band is tapering off anteriorly and in the anal angle, growing decidedly narrower also in the middle. The under surface is easily distinguishable by a more decidedly greyish-brown distal area reminding us of *P. meander*, especially on the hindwings. — **fruhstorferi** *Röb.* (114 a) based upon a ♀ from Rio de Janeiro, which we figure, is the Central Brazilian form of condition the habitus of which, like *P. meander megacles* and *P. antimache*, is beaten by the northern as well as the Andine vicarious types. I possess a ♀ from Espiritu Santo being congruent with the figured specimen. ♂♂ from Bahia, Espiritu Santo and Minas Geraes, are likewise smaller than *amphimachus*-♂♂ from the Amazon etc. The blue spotting is growing less, the under surface is still more faded than in *amphimachus*, fallow greyish-yellow. — **melas** *form. nov.* is found in Santa Catharina. The shape of the wings is still similar to *fruhstorferi*, the magnificent band, however, hardly half as broad as in *amphimachus*, and still more narrowed than in *P. meander soron*. — **pseudomeander** *Fruhst.* (= *falcata* *Röb.*) (111 c, d, 114 a as *falcata*) is almost entitled to be called a species. The shape of its wings is changed, the forewings projecting like a sickle, the hindwings being narrowed to a long-stretched point. The reduction of the blue band on the forewings, compared with *melas*, makes such great progress that broad black veins begin to disserve the magnificent area. On the under surface we notice a peculiar purple or reddish-violet lustre of the dark grey distal half being most successfully depicted in our figure. Rio Grande do Sul, rare and local. From Candelaria, however, I received about 30 specimens. — The examination of the copulation-apparatus of *meander* and *amphimachus*, which I extended also upon *cincta* *Fruhst.* from Mexico and *pseudomeander* *Fruhst.* from South Brazil, issued such a congruent result as to the ground characters, that there is no doubt of the homogeneousness of these two forms. Only the size of the dorsal uncus varies somewhat in the single specimens, although these variations are not bound to one form, but occur in both the forms. This part of the organ is strong, but of a small size, and when being looked at, is easily covered by 2 pair of teguminal appendages protruding laterally below it and with pointed clubs, or it is dislodged in such a way that it may be overlooked even in a very accurate examination of the object. But in case the hook representing the dorsal prolongation of two lateral basin-shaped formations be somewhat longer, it projects beyond the diadem-like crown of the 4 clubs, producing the impression as if there were a specific difference. The harpae, suspended beneath the mentioned clubby appendages, are broad cochleari-form, tapering and, shortly before the distal end, are armed with a plain strong spine. Penis enormously developed, without any special peculiarities, saccus short. The race *pseudomeander* *Fruhst.*, being exteriorly so sharply differentiated, does not show any remarkable anatomical deviations.

P. chalciope. A rather rare species the range of which is as yet little known. Our figure 111 d gives us a good idea of the under surface, the white bands of which vary in extent according to the locality. — **chalciope** *Hbn.* is presumably described according to specimens from Guiana. KIRBY mentions it first from Cayenne, from where it is also represented in the Berlin Museum. The form is especially characteristic for the white bordering of the inner light zone, beginning from the apex of the cell of the forewing, traversing the hindwing-cell as far as to the last median, where it almost touches the white streak which, in our figure, passes even beyond the submedian. The blue area of the upper surface of the hindwings has a convex expansion. We may probably expect *chalciope* from a number of other Central and North Brazilian Provinces. — **domna** *subsp. nov.* (111 d as *chalciope*) is a very dark form with uncommonly narrowed blue median area of the upper surface. The under surface differs from *chalciope* *Hbn.* by the entire absence of the subbasal white band and the effaced instead of prominent white patch beyond the forewing-cell. From São Paulo to Rio Grande do Sul. According to a ♂ and a ♀ from the latter state our figures are depicted, and I possess analogous specimens from Theresopolis in Santa Catharina. — **chalcis** *subsp. nov.* approaches above the form depicted by HÜBNER by the extensive magnificent area, though it resembles beneath *domna* (111 d), except the brown parts being replaced by greenish bands and stripes and the distal zone of both the wings being paler and more faded. Paraguay. Valve about as in *P. antimache*, uncus more slender, penis narrower.

P. luctuosus *Walch.* A mythical species or form being, according to the primitive figure of the under surface, somewhat analogous to *P. chalciope* *Hbn.*; there is also a distant likeness with *P. demophon* resp. *antimache*-races of the Antilles. As its habitat the „East Indies“ are mentioned, which statement may be erroneous and may mean the West Indies.

licomedes. **P. licomedes** exhibits above 3 transcellular blue spots and a relatively light, bright-glossy, compact blue region resembling rather *P. pheridames* (112 a). We have to record only two areal forms; specimens of the Andine region differ only by the increased brown spotting of the under surface. — **licomedes** Cr. (111 d), first described from Surinam, but occurring in the whole Amazon district. MICHAEL writes about its habits: „The *licomedes* fly very swiftly and skilfully, but like to rest often on especially conspicuous trunks of trees, always with their heads downwards. As soon as any other butterfly dares to approach them, they dash at it, pursuing it in the most pertinacious way, whereupon they use to return to their former place and, in case it is already occupied by another butterfly, they chase away the intruder. In Itaituba I saw every day, at an especially adapted place, a specimen of *pheridamas* in a damaged condition. I caught it and, after having marked its wings, I let it fly away again, and then I observed this animal for two months day by day, and also repeatedly caught it again in order to ascertain whether it was the right one. Finally, one day, I missed it, after having at last been flying off already in such a condition that it would have been difficult to ascertain the species.“ — **scyrus** *subsp. nov.* denominates the race from the chain of the Andes, being of a more conspicuous habitus and beneath more richly decorated in brown and more prominently marked, with the type from Peru, where *scyrus* is not rare near Pozzuzo. There are also specimens lying before me from the Bolivian lowlands and FASSL took congruent specimens on the Upper Rio Negro in 800 m; appendage of the uncus of a most conspicuous shape, with a frontal indenture, generally resembling a minute vexil. Valve distally very much tapering, similarly to that of *P. demophon*.

chiliarches. **P. chromus**, a species peculiar of the Andine region, going only over to Venezuela in the west. It is the only species with entirely black upper surface of the forewings. The chain of ocelli on the hindwings is very variable, and the size of the ochre-yellow rings seems to increase from north to south so that Bolivian specimens are decorated the most profusely on the upper surface. Larva discovered by FASSL and described in the diagnosis of the genus. — **chiliarches** *subsp. nov.* excels Colombian specimens in size. The blue area of the hindwings is somewhat lighter, decidedly narrower and longer. The eye-spots of the hindwings almost without a diaphanous ochreous periphery. The distal part of the under surface of both the wings preponderantly grey instead of brown, the median band with its silvery gloss and the greyish-white dusting on the hindwings and the whitish-grey clouding on the forewings more extensive. Venezuela. — **chromus** Guér. (= *hercules* Dbl.) from Colombia has the smallest blue discal spot on the upper surface of the hindwings and the lightest grey basal zone of the under surface. Both the wings resemble beneath *P. synchronoma* (114 a) the most. The very rare ♀ has two forms: the one similar a ♂ without the blue fragmentary bands of the forewings and the intensely ochre-yellow ringleted ocelli of the hindwings; and fa. **ochracea** Fassl with accumulations of light brown scales beginning in the anal angle of the forewings and advancing about as far as to the wing-centre. It was found in the Cañon del Tolima (Central Cordilleras, about 1700 m). Male specimens from Ecuador *xenarchus*. are larger than the Colombian ones and already form a transition to **xenarchus** *subsp. nov.* with the nomenclatural type from Pozzuzo (Peru). Forewing more pointed, hindwing likewise longer than in *chromus*. The blue discal spot anally more extensive. Under surface with less markings and colours. Basal zone of a lighter grey, distal half preponderantly greenish-grey, without prominent brown clouds. Instead of a broad brown median band only a greenish stripe. — **fassli** Rüb. (112 a as *chromus*), the Bolivian local form, beneath somewhat more variegated than *xenarchus*, approaching more the Ecuador form. The white median band of the hindwings, like in *xenarchus*, confined upon a fragment, reaching but the subcostal. Valve more slender than in *P. chalciope*. Uncus characteristic by two unciform appendages curved downwards.

priene. **P. priene** resembles *P. chromus* above, the forewings, however, exhibit again the usual magnificent band, but no blue subapical spots. Wings narrower than in *chromus*, apex of the forewings not prominent. Under surface, according to the locality, with or without whitish or yellowish parts in the distal area of both the wings. — **priene** Hew. resembles above *synchronoma* (114 a) from which it differs by a darker under surface. The submarginal band being distinct in *synchronoma* is hardly indicated. Of the ocelli on the hindwings only the two anal ones are blue-pupilled. Colombia, very rare, only 1 ♂ in the Coll. FRUHSTORFER. — **synchronoma** Stgr. (114 a) is said to originate from Blumenau in Santa Catharina, but the form has not been found there anymore since 30 years. I, therefore, presume that the locality has been mistaken, and should much rather consider the Andine region to be its habitat. The direction of the variation corresponds exactly to that of *P. chromus* *xenarchus*, so that *P. synchronoma* has presumably come from Peru and may be expected again from there. This supposition is supported by the presence of a ♂ from Huancabamba (Peru) in the Coll. FASSL having the blue reflection of the forewings already indicated in its beginnings or rudiments.

Section Prepona Bsd. Scent-tuft of the hindwings yellow.

P. pylene is an interesting, most variable species, greatly inclined to forming local races, of Central and Southern Brazil. Its scent-tufts do not always stay jet-black, but occasionally they are coloured in grey, reddish and sometimes almost yellowish, by which it forms a transition from the *P. demophon*-group to the

P. laërtes-group. The peculiar under surface, with abundant tortous and interrupted lines, is already entirely of the *laërtes*-character, exhibiting among other marks also the two large apaturoidal ocelli of the hindwings. The character of the upper surface is shown by our figure 112 c (*bahiana*), that of the under surface 112 d (*proschion*). The northernmost branch *bahiana* Fruhst. (112 c) has beneath the greatest likeness with *P. eugenae bahiana*. (112 b), though the ochre-yellow hue in the submedian zone of the forewings is absent and the black post-discal interrupted band considerably broader. The specimen figured by us is a ♀ (no ♂ as stated in the table). The blue area of the upper surface throughout paler than in the more southern forms. From Bahia in my collection. — *santina* Fruhst. beats the Bahia-race in its size; the blue zone of the upper surface remains darker, besides of a more intense lustre, and in the ♂♂ there is always a forewing-band going as far as to the costal margin. The under surface differs from *bahiana* by a darkening of the submarginal zone of both the wings, similar as in *proschion*. Espiritu Santo. — *pylene* Hew., an extremely rare form resembling *santina*, though it has no transcellular blue spots of the forewings, the under surface being always overhued by reddish instead of grey. — *miranda* Stgr. resembles *pylene* from which it is only distinguished by the presence of sub-apical spots on the upper surface. Very rare in Santa Catharina, 2 ♂♂ from Theresopolis to the south of Blumenau in Coll. FRUHSTORFER. — *proschion* Fruhst. (112 d) forms the extreme with the narrowest bands among the collective species. I have specimens at hand with scarcely half as extensive blue band of the upper surface as we find it in *bahiana*. The transcellular spots are absent as a rule, though there are ♂♂ as well as ♀♀ with small blue splashes, but also as a rarity ♀♀ with 3 imposing maculae. The under surface is decidedly paler brown than in *miranda* and the submarginal heart-spots considerably smaller. Rio Grande do Sul, very rare, especially in a good condition; but there are 11 ♂♂, 6 ♀♀ in Coll. FRUHSTORFER *).

P. eugenae differs from *P. pylene* above by the light yellow hair-tuft. Some local races are, however, so closely allied with *P. pylene* that I did not yet recognise it in 1904. The most essential mark is formed by the pregnant silver-spotting of the under surface being distally bordered by the small median black strokes of the forewings. The submarginal reniform or cordiform spots of the forewings are smaller and scarcer than in *pylene*. *P. eugenae* is more widely distributed than *pylene*. It is met from the Amazon to Bolivia and Paraguay, and in South Brazil as a great rarity in Santa Catharina. The most noted geographical race is *eugenae* *Bates* (112 b). The ♂ has above very nearly the appearance of *laërtes* Hbn. the blue bands of which are, however, on the forewings costally somewhat broader. The colour of the band is in the middle of a greenish light-blue which turns dark-blue at the margin. Otherwise the wings are unicolorously jet-black. Under surface: The wing-base is of a silvery white, as well as the apex of the cell and a discal row of 5 very irregular white spots being proximally bordered in broad black. At the base we notice a broad black semi-circle surrounding the precostal, and being similar though fainter in *pylene bahiana* Fruhst. and *pylene santina* Fruhst. On the hindwings we notice towards the apex a black streak, and between the ocelli there are 3 light-blue dots. Anal and subanal region of the hindwings densely set with fine white scales. Ground-colour of the wings yellowish-grey, but the centre of the forewings is traversed by a yellowish-brown region from the base into the anal angle. Palps and feet above black, below white. Eyes reddish-brown, antennae black. Head and thorax above black, below whitish-grey. Abdomen above black, below yellowish-grey. The ♀ exhibits above a somewhat broader blue band than the ♂, and also at the costal margin beyond the cell a large roundish blue macula. Occasionally there are also two small blue dots to be noticed yet beyond the cell. The under surface of the wings is somewhat more profusely white, the ground-colouring predominantly light yellowish-brown and on the hindwings the silvery white scales are concentrated to a distinctly noticeable submarginal band. The ocelli are distally provided with broader white ringlets. Known from Surinam, the Lower and Upper Amazon. FASSL has discovered ♂♂ on the Upper Rio Negro at an altitude of 800 m. — *simois* Fldr. an extremely rare territorial form of Western Colombia, differs from *eugenae* chiefly by a silvery grey, instead of ochre-yellow under surface. — *laërtides* Stgr. above more greenish blue, has larger silvery-white spots of the under surface of the forewings than *eugenae*. — *decorata* Fruhst. forms an intermediary between *eugenae diluta* from the Amazon, *eugenae Bates* and *laërtides* Stgr. from Paraguay. ♂: On the forewings the blue median band grows narrower in an upper direction, being continued to the costal margin in the shape of 3 small blue spots. The under surface of all the wings much lighter, the ground colour grey and only in the discal area and anal angle of the forewings yet loam-yellow. The discal silvery bands of both the wings broadened and coherent, thus not consisting of isolated spots as in *eugenae*. Furthermore, the whole hindwing-cell is covered with silvery white scales, while in *eugenae* only the cell-apex appears covered with silver. All the black zigzag-bands are greatly reduced. The marginal zone of the hindwings throughout with greyish-white scales, while in *eugenae* there are only in the anal angle some white dots seen. ♀: considerably larger than the *eugenae*-♀, decorated with duller blue bands being prolonged towards the costal margin in the shape of 3 broad blue dots. Under surface lighter than in *eugenae*, and decorated with broader silvery spots in the cell as well as in the discal area. The under surface of the hindwings still more profusely decorated, since the discal and basal silver-spotting is confluent in it, forming one single region. The discal zigzag-lines greatly reduced like in the ♂, instead of it the internerval submarginal cordiform spots of the under

*) Valve conspicuously stunted. The Phyteuma-flower-head-like uncus-appendages smaller and neater than in the allied species.

surface of the forewings are extremely widened. *decorata* approaches *simois* Fldr., though it has above narrower blue bands and smaller blue subcostal spots, the 5 blue dots on the upper surface of the hindwings being also absent. Under surface: all the black bands and maculae thinner and more delicate, the silvery spots somewhat broader and standing more closely beneath each other. Hindwings of a more greyish than yellowish-brown ground-colour. The ocelli considerably smaller. Minas Geraes. — *argyria* subsp. nov., the production of a province with a preponderantly dry climate, having above still more considerable and lighter blue magnificent bands than *decorata*. The ocelli of the hindwings extensively bordered by ochreous, as it is not noticed in any other race of *eugenes*. Under surface without the yellowish admixture in the basal region of an almost pure white and silvery gloss. The median spotted side of the forewings narrower than in *decorata*, but united more to the shape of a band, the black submarginal band extraordinarily strong, resembling *P. pylene bahiana* with which I even formerly united it. Bahia. — *transiens* Fruhst. This peculiar *Prepona* forms an intermediary between *eugenes* and *P. pylene*. With *eugenes* it has in common: the wing-contour, the apex being but somewhat prominent and the insignificantly developed anterior blue median spots of the forewings, as well as the distally ochreous-yellow ringleted anal ocellus on the hindwing shining distinctly through to the upper surface, and especially the yellow scent-tuft of the hindwings. The median band, however, is darker blue than in the *eugenes*-forms and harmonizes in the colouring with the *P. pylene*-races. Under surface: excepting the absent black dot between the little subcostal veins (just like in *eugenes*), the dark colour, especially of the distal half of the wings, coincides with the vicarious types of *P. pylene*. Environs of Theresopolis, Varge grande, at an elevation of about 2000 m in Santa Catharina. Hitherto only one specimen discovered and known. — *diluta* Fruhst. The blue bands on all the wings appear somewhat narrower than in *laertides* Stgr. and are on the hindwings, towards the anal angle, somewhat tapering. The under surface of *diluta* is lighter and provided with more diffuse markings, especially with respect to the black zigzag-discal-bands. The base of the hindwings more yellowish, instead of purely silvery-white as in *laertides*. The marginal zone of the hindwings with obsolete grey, instead of black scales. The ocelli with more indistinctly black pupils, bordered by a lighter and broader yellow. Paraguay. Valve (judging from a specimen of the *laertides* Stgr.-race) distinctly rounded off.

P. laertes. One of the best known species being still the most difficult to discuss, since it inclines to the most extravagant variations of all the representatives of the genus. Hardly any specimen is like the other, and even the characters of marking on the under surface are variable. The under surface resembles somewhat that of *P. eugenes*, *P. pylene* and *P. gnorima* (112 b), though it is immediately separable from all these species by the absence of series of white or silver-glossy spots at the median band of the forewings. The under surface, in general, equals our figure of *P. autolytus* (112 c) and varies in such a way that according to the locality there are specimens predominant either with extensive ochreous parts or with preponderantly grey parts. Most conspicuous is the variation of the yellowish median zone between the submarginal and the transcellular black zigzag-band. Sometimes these lines approach each other near the cell like in *autolytus* (112 c) on our figure, so that a narrow yellow or grey-tinged canal results, or the small zigzag-stripes are separated from each other so that there is a wide, broad opening somewhat similar to that in *neoterpe* (112 d). Interesting combinations of figures are also formed by the hepatic or cordiform spot between the middle or posterior median standing isolated or, as in 112 c in *autolytus*, touching the submarginal band or being entirely absorbed by it, so that peculiar broad serrated contours are being formed. On the upper surface we notice the constellations being also usually found in the black-tufted *Prepona* of the *meander-antimache*-group. The three transcellular spots depicted on our figures of *penelope* (111 a) and *pallidior* (111 a) may be existing in ♂ and ♀, or be missing altogether (fa. *antikleia* Fruhst.). Besides there are also intermediate forms with but one broadly-emanated costal spot, especially in the ♀♀, and small blue subapical splashes. The range of *P. laertes* is about the same as that of *P. antimache*. The offshoots of the collective species are found from Costa Rica to Bolivia and from Guiana to the southernmost parts of Brazil and Paraguay. — *pallantias* subsp. nov. The blue band of the forewings of the ♀♀ more uniformly broad, anteriorly more compact, more roundish. Under surface uncommonly extensively faded, ochreous. Shape entirely larger than in the more southern races from the Amazon and Guiana, Costa Rica, parts of Colombia, — *victrix* form. nov. forms the maximum of the luxuriant development of the blue magnificent area exhibiting besides, by means of two imposing transcellular spots and a very broad costal spot, a band-shaped prolongation as far as to the costal margin of the forewings. From the Upper Rio Negro from 800 m (East Colombia), sent to me for inspection by Mr. FASSL. — *ikarios* Fruhst. is a form occupying the whole Amazon basin up to the foot of the Andes and Guiana. Upper surface like in *penelope* (111 a), but the blue bands shorter and broader. As *autolytus* Fruhst. a form is described without blue costal spots of the forewings. By the profusely dark-yellow under surface of the wings, *ikarios* is coloured according to the same scheme as *P. antimache demophoon* Hbn. — *agathus* subsp. nov. is based upon a large form found predominantly in Peru, but also appearing already in some parts of Ecuador. The magnificent areas of the upper surface surpass those of *penelope* (111 a) in extent. — *penelope* Fruhst. (111 a) is beaten in the habitus by *agathus*. The discal band of all the wings is of a darker blue and narrower than in the northern forms; the under surface exhibits fewer ochre-yellow places. — As *antikleia* Fruhst. a ♂-form was introduced without a blue preapical spot on the forewing. Bolivia. „The copulation-apparatus is (according to STICHEL) distinguished by two long lateral, somewhat curved, strongly chitinized prolongations below the

uncus, being somewhat thickened and set with irregularly arranged protuberances and spines. The uncus itself is rather long, in its appendage to the tegumen sharply pressed in like a saddle, then it runs straight on to its end which is curved and bent downwards with its tip, similar to the beak of a pelican. The clasping-organs, harpae, join two smaller lateral cones of the tegumen and form faintly chitinized, longitudinal-triangular tips, being exteriorly densely set with warts and tiny short hairs, but beside more sparsely set with hair of different length. Below the harpae, on both sides of the tegumen-ring, a trough-shaped sella protrudes, which is outside provided with many small, pointed protuberances, on which the slender, somewhat curved penis rests. The saccus is short and obtuse. All the parts are liable to slight variations. The saddle at the appendage of the uncus is more or less sharply pressed in, the uncus itself more or less strongly curved. The lateral appendages below it are more or less strongly clubbed at their ends, and the dents and protuberances longer or shorter developed, and irregularly arranged. The harpae exhibit more slender or more clumsy tips, dorsally at the base more or less gibbous, the long hairs stronger or more sparse, sella longer or shorter. This variability of the single parts of the organ is not bound to one and the same form, so that it repeats itself in the same or nearly the same way in *laërtes typicus* and *penelope* on the one hand, and in *antikleia* on the other hand. — **pallidior** *Fruhst.* (111 a), the Paraguay-race of *laërtes* bears the same relationship to the typical *pallidior*. form as *eugenes diluta* *Fruhst.* to *eugenes* *Bates* from the Amazon River, for on the under surface of the hindwings we notice an obliteration of all the black spots and markings. The yellowish colouring of the anal angle of the forewings is also very much faded and the distal half of the hindwings is tinged in a faded grey, instead of the intense brownish-grey distinguishing *laërtes* from Brazil. The ocelli are less distinct and the black submarginal band of the forewings is less dentate. On the upper surface, the blue discal bands are more profusely and deeply parted by the black ground-colour, the band itself being somewhat lighter blue. Paraguay, Rio Grande do Sul. — The name of *laërtes* *Hbn.*, finally, is transferred to the Brazilian subspecies on account of different analogies of the under surface. I do not possess specimens fully corresponding with HUEBNER's figure (as depicted in WYTSMAN's edition Table 70). But relatively large black submarginal dots of the forewings exhibited in the said figure make almost the impression of an aberrative, especially dark specimen. ♂♂ from Brazil are relatively small with only one blue costal spot. ♀♀ remarkably large, with one large, distinct, and two effaced transcellular spots, distal part of both the wings beneath intensely grey with few ochreous patches. Not of very frequent occurrence from Espiritu Santo to Theresopolis in Santa Catharina, while specimens from Rio Grande do Sul approximate already *pallidior* from Paraguay.

P. omphale. A wonderful form which we are not justified in calling a species, since in *P. laërtes penelope* *Fruhst.* there occur already specimens with traces of a black, proximal blue reflection on the blue median area of the forewings. On the other hand, the uncommonly pointed wing-contour and the exclusive occurrence of *omphale* on the Antilles and in Honduras, where *laërtes* does not occur, argue in favour of a certain independence. In any case *omphale* — and even if it were only a form — has, for nearly 125 years, been misconceived by us. CRAMER has figured it wonderfully, though only its under surface, adding a short, but fully sufficient diagnose running thus: „Over the black ground of the wings there is yet a dark violet reflection.“ Nevertheless he denominated it in 1775 as *demophon*, which name was already preoccupied by LINNÉ in 1764. HUEBNER who, in 1816, attempted a revision of *Prepona* in his list of noted butterflies, was quite right in denominating CRAMER's figure as *omphale*. In 1823 when GODART published his celebrated Encyclopedia, HUEBNER's denomination was overlooked, and GODART introduced for *omphale* *Hbn.*, the new name of *demodice*. This denomination grew to be popular on LUCAS figuring successfully the upper surface in his „Lepidoptères exotiques“ in 1835, to which BOISDUVAL supplied another second figure of the under surface. KIRBY in his Catalogue, added the species as a synonym to *laërtes* *Hbn.*, from which STAUDINGER, supplying again a figure, disconnected it, denominating it *demodice* and taking *gnorima* *Bates* to be an aberration of it. That is the reason why *omphale* is labelled as *gnorima* in all the collections. From *laërtes* with which KIRBY unites it, *omphale* differs above by the reddish instead of yellow scent-tufts of the hindwings *). The blue median band, especially of the ♀, runs more rectilinearly as well as the black streaks secluding the cellule distally on the under surface of the hindwings and being generally more strongly prominent. Mr. MICHAEL reports in a letter addressed to me about the habits: „On September 28th 1904, I found, near Juanjui on the Upper Huallaga, at a place with an especially delicious or flavoured odour, crowded together into a heap, far more than 30 *Prepona* of all the species occurring there, and — most amazingly — in the midst of them in the thickest scuffle there was an *Agrias beatifica* (resp. *beata*). The *Prepona* were so voracious in their feast, that I could quite easily pick out first the *Agrias* with my fingers, then I chose the best *Prepona*, at first 2 specimens of *omphale*, some *amphimachus*, 3 *dexamenus*. Only after I had thus grasped about 10 of the best with my fingers, some of the others began to fly away.“ The most characteristic mark of the species, the wonderful violet reflection

*) The clasping-organs differ but quite slightly from *P. laërtes* by a ventrally somewhat more convex valve. Most interesting is a chitinous thickening near the base of the valve likewise occurring in *Agrias claudina*.

- which may be put on only in the basal region, but also in the distal half of the forewings, is absent in the ♀♀ being extremely rare and immediately distinguishable from the ♀ of *P. laërtes* by a conspicuously light-
omphale. blue band and the almost quite white under surface of the hindwings. — *omphale* Hbn., the name-type, is found on the Amazon near Obidos. The blue magnificent area of the forewings only proximally defined by violet. Under surface of the forewings with an intensely ochre-yellow subanal area. Under surface of all the wings light grey except the yellowish anal angle of the forewings. Blue median band of the forewings with a proximal and distal reflection. Specimens with such double-rowed reflection have been mentioned by GODART from Surinam and Brazil, by STAUDINGER from Pebas and the Ucayali. They are lying before me from Surinam
amesia. and Bahia, and seem to be forms of particularly hot and dry periods. — *amesia* Fruhst. denotes the Andine race; specimens from there are somewhat larger than those of the plains of the Amazon and Surinam; the blue median band grows narrower, because the black ground-colour increases in extent. The under surface reminds us of BOISDUVAL's figure (t. 7. Spéc. Gén. Lép. 1836) by the sharply defined silvery white basal half and the brownish-grey distal region of all the wings, which is powdered only with few white scales, but the intermedian, small ocelli of the hindwings are absent, whereas the apical and anal ocelli are more strongly developed. Specimens with only a proximal violet reflection are predominant. There occur, however, also such that correspond to *demodice* and *louisa* in which we notice also on the hindwings the magnificent violet hue. This aberration
dives. is called fa. *dives* Fruhst. (112 b). Blue median bands of the wings with two-sided blue reflection. Corresponds to the forma *demodice* Godt. and differs from *demodice* by the light blue median band on the upper surface of the hindwings, being also decorated with a double-rowed violet reflection. The figured specimen originates from Peru, but I possess similar ♂♂ also from Colombia and from Panama. Certainly the Peru-♂♂ on their under surface do not attain the brilliant beauty of the blue eye-spots which decorate the Colombian ♂♂ of *dives*. Mr. FASSL has taken magnificent ♀♀ in the Rio Aquaca Valley in the Colombian West Cordilleras, from an altitude of 2000 m. Under surface throughout silvery grey without the yellow anal area of the forewings. Hindwings likewise with proximal blue-pupilled ocelli and between them small, fine, oblong submarginal lunular-
octavia. spots. — *octavia* Fruhst., a relatively small geographical race with narrow blue bands and dark violet proximal hue of the forewings. ♀ immediately separable from the ♀ of *laërtes pallantias* by the magnificent silvery white
louisa. under surface of the hindwings and its more imposing blue eye-spots. Honduras. — *louisa* Btlr. exhibits the most extensive violet decoration of the upper surface, whereby it even outshines *dives* in beauty. Cuba, rare.
rhenea. — *rhenea* subsp. nov. we meet in Bolivia and further inland in Mato Grosso. The specimens are already excelled by those of Colombia in size and richness of colours. The blue median area is narrowed, the proximal reflection is more extensive, but no more so magnificently blue as in *amesia*. Also the under surface grows darker, especially the intensely grey distal part of both the wings. Whereas three Colombian *amesia* exhibit blue bands running through as far as the costal border, only one ♂ among 9 Bolivian specimens has this luxuriant decoration. If I remember rightly, Mr. FASSL has sent me for inspection, together with fa. *dives*, also analogous speci-
abulonia. mens. — *abulonia* subsp. nov. resembles above the figured *dives*, except the band being prolonged as far as the costal of the under surface of the forewing analogous to *demodice* from Surinam, though with a light grey distal part of both the wings and extremely reduced ochre-yellow subanal spot. *abulonia* may be considered the local race with the lightest under surface of the whole species. Bahia. Similar specimens may occur in Minas Geraes, while Rio de Janeiro may be the home of a presumably darker geographical form. Specimens from the latter province have become known to me only from the statements in literature.
- gnorima*. **P. gnorima** closely approximates above *P. omphale*, and the violet hue seems always to be confined to the basal zone. The most characteristic under surface (112 b) which approaches rather *P. eugenae*, differs from *P. laërtes* and *P. omphale* by the silver-glossy trimming of the black median band. The species is very rare and within 25 years I have not succeeded in obtaining more than 3 specimens among the 450 *Prepona* of my collection. Only three geographical deviations are to be mentioned: *gnorima* Bates (= *demophile* Fldr.) (112 b). ♂: above as a rule with a very broad blue median area of the hindwings, although there are also ♂♂ with a narrower band. As for instance, also the types of FELDER that lay before me, are somewhat different: one ♂ has a light chocolate under surface of the wings, which, in the second specimen, are of a more yellowish-brown tinge. The chocolate ♂ has above very narrow blue bands, and I believe that this specimen is the real type. The second specimen is congruent with a ♂ from Colombia in my collection and has broader blue discal bands of the upper surface. It is not impossible that these specimens come from another locality, maybe another
philetas. river-valley or range of mountains. — *philetas* Fruhst. differs from *gnorima* by the paler under surface of the wings, being still lighter than in *jordani* Fruhst. The region outside the submarginal band is set with broad white diffuse spots. The black discal band of the under surface of the forewings similar to *jordani*, only bordered with quite narrow white. The hindwings are extremely light, and the black discal band appears distally broader and more coherently decorated in white than in *gnorima*, the ocelli grow also much larger. Honduras, very rare:
jordani. besides observed in Guatemala and on the volcano Chiriqui. — *jordani* Fruhst. ♂ 43 mm, against 50 mm of *gnorima* from Colombia. Blue median band of the forewings shorter, broader and darker. Under surface: all the wings lighter, especially the greyish-yellow region between the submarginal and median bands. The silvery white trimming of the median band being so characteristic of *gnorima*, especially also beneath, consi-

derably reduced. All the black dots and comma-like streaks in the white basal area of all the wings more pregnant. Ecuador, from 1000 m.

P. dexamenus was formerly known only from Peru and the Upper Amazon, but was discovered by my collector JULIUS MICHAELIS also near Obidos, in Surinam, as well as in Espiritu Santo and lately also in Mato Grosso. Marking of the upper surface plain. ♂♂ without preapical spots, ♀ always with a moderately large transcellular spot and one or two indistinct blots. Hindwing with an anal eye-spot showing through from beneath, being in the ♀ sometimes surrounded by an ochreous periphery. The under surface resembles that of *P. amphimachus* (112 c) from which it differs by the presence of 2 blue-pupilled ocelli, being characteristic of the *P. luërtes*-group. Four local forms are to be registered: **krates** *Fruhst.* (112 b) a geographical form of *krates*, small habitus; the gorgeous area of the upper surface somewhat darker and narrower than in specimens of the Andine region. Under surface rather uniform, the distal half loam-yellow. Surinam, Lower Amazon. — **leuctra** *Fruhst.*, an eminently differentiated race with still more advanced darkening and narrowing of the blue bands. Under surface in 5 specimens of my collection uniformly dark grey, something like in *P. gnorima* (112 b). All the black markings of the under surface besides more strongly arranged and the black areas in the submedian zone of the forewings nearly again as broad as in *leuctra*. So far only known from Espiritu Santo, *leuctra* is presumably found yet in Minas Geraes and perhaps in the state of Rio de Janeiro. — **psacon** *subsp. nov.* forms the transition from *leuctra* to *dexamenus*. The gorgeous area of the upper surface more extensive than in the other individuals lying before me, the shape considerably larger. Distal colour peculiarly greyish-brown and especially strongly contrasting with the basal zone, being conspicuously decorated in a wonderful silvery white. Mato Grosso. — **dexamenus** *Hpff.* (112 a, ♀ instead of ♂), originally *dexamenus* described from the Chanchamayo in Peru, lies before me from Bolivia from whence also our figured ♀ originates, which Mr. FASSL has discovered there. The ♂♂ are surpassed in size by those from Mato Grosso; the magnificent area is lighter, of a brighter lustre than in the races of the Atlantic region of the continent. The distal half of the under surface of both the wings either darker loam-yellow than in *krates*, or light coffee-brown as in the ♂♂ of *psacon* from Mato Grosso. The ♀ from Bolivia has, contrary to the black eyespotted ♀♀ of *krates* and *leuctra*, an ochre-yellowish defined ocellus on the upper surface of the hindwings. In the Coll. STAUDINGER there are specimens from Colombia. *dexamenus*.

P. neoterpe. An imposing species of the Andine region, approximating above *P. dexamenus*, beneath more *P. gnorima*, *eugenes* and *pylene* by an especially luxurious median silvery band of the forewings. The alliance with *P. omphale* and *P. gnorima* is, furthermore, indicated by a magnificent violet hue in the basal zone of the forewings. Claspings-organs with very long uncus. Valve somewhat like in *laërtes*, but still a little more slender; the club at the uncus considerably longer and more robust; oedeagus broader. Two areal forms: **neoterpe** *Honr.* (112 d). Beneath sometimes reddish ochre-yellow, occasionally also more fallow, more loam-coloured, as in our figure having been depicted according to a ♂ from Pozuzo. The ♀ which we represent by a figure, is in the collection of Mr. ROBERT BIEDERMANN. The type originates from the Chanchamayo. — **photidia** *Fruhst.* A northern areal race, considerably differing from the Peruvian name-type by the conspicuously stunted, scarcely half as broad and besides much darker blue median bands of all the wings. On the under surface, however, there are no differences noticeable. *photidia*, by the colouring of the upper surface, forms a transition to *P. lygia* *Fruhst.* from Chiriqui (Iris XVII, Table 6, fig. 2), which seems to replace *neoterpe* in Central America. From the Upper Rio Negro, from an altitude of about 800 m, discovered by A. H. FASSL. *neoterpe*, *photidia*.

P. lygia *Fruhst.* In *lygia* the melanotic reduction of the blue magnificent band of the upper surface is still further advanced than in *photidia*, and in it the otherwise resistant under surface takes also part in the sombre discoloration, the ochre-yellow of *neoterpe* turning into a greyish-black and the transcellular silvery spots on the forewings disappearing, too. It is now most likely that another *Prepona* will be discovered also in the Western Cordilleras of Colombia, losing the character of *neoterpe* still more than *photidia* and establishing a more complete transition to *P. lygia*. In case this should come true, *P. lygia* would no more be rightly called a species, but degraded to the northernmost branch of *neoterpe*. *Lygia* has above little likeness with *omphale* and *gnorima* *Bates* and reminds us beneath somewhat of *P. gnorima* but without being in any way allied to it. The forewings bear a long-stretched and pointed apex, but the hindwings are narrow oval and very little undulated. On the forewings there is a very narrow dark-blue, glossy discal band running from the anal margin anteriorly, growing narrower in order to dissolve into minute blue grains of dust between the anterior medians. On the hindwings the band is somewhat broader and is reduced in width towards the anal angle. The blue discal band on the forewings is proximally surrounded by a magnificent, extensive, dark violet reflection being continued on the hindwings towards the base, as a narrow zone. The ocelli of the under surface show through above, otherwise the wings are without any markings. On the under surface, the basal third of the forewings is of a silvery white, with a slight grey tinge in the basal part of the cellule of both the wings. Beyond the cellule we notice a large, dark brown spot being encircled by black. Above this there is a silvery white macula at the costal margin like in *gnorima*, and 3 white spots are beyond the cell as a distal bordering of the black discal band. The submarginal band of the forewings is strongly curved, though not so serrated *lygia*.

as in the other species of the *laërtes*-group. This band is downwards reddish-brown and towards the apex bordered by a broad dark grey region and towards the anal by a somewhat narrower reddish-brown region. Chiriqui, Central America. Mr. ROEBER presumes that there exist two temporal forms of *P. lygia*, and writes about it: „Of this magnificent animal I possess 1 ♂ from Chiriqui which corresponds well above with the figure in Iris XVII, Table VI, fig. 2. The under surface, however, is considerably different, since instead of the cuneiform white submarginal spots of the forewings there is only a blurred whitish band slightly contrasting with the ground-colouring, and the black band before it is very much serrated, similarly as in *eugenes* Bates, but the submarginal cordiform black markings in *eugenes* are in my specimen of *lygia* represented only by three white dots being encircled by a thick black. It might be possible that this form though entirely deviating belongs to another generation but the specimen according to which Mr. FRUHSTORFER has described this species. But it would be premature to denominate this form, because it is just as well possible that *lygia* varies in one and the same generation. These questions could be decided only by means of further ample material with the dates of the captures.“

pheridamas. **P. pheridamas**, an entirely isolated, extremely constant species, without any close allies, bearing about the same relationship to the group of *P. laërtes* as *P. chalciope* and *P. lycomedes* to the series of *P. demophon*. Claspings-organs considerably shorter than in the allied species, the phyteuma-like club at the uncus remarkably stunted, valve extremely densely set with long black bristles. Upper surface distinguished by an uncommonly broad blue magnificent area; ♀ with a somewhat strangulated and duller blue band and a larger apical spot beneath which there are, as a rule, one or two blurred, insignificant maculae embedded. The under surface varies according to the habitat of the butterflies from light loam-yellow to effaced greyish brown. We so far know only three territorial forms extending from Colombia to Bolivia, and from Guiana to Central Brazil. **pheridamas** Cr. (112 a), depicted according to a ♂ from Surinam. The form remains unchanged in spite of its extensive range, and beside the specimens from Cayenne, Surinam, Obidos, Mato Grosso and Ecuador of my collection there are also specimens known to me from Villavicencio in East Colombia from 400 m, from *phila*. the whole Upper Amazon and Peru. — **phila** Fruhst. (112 a) surpasses *pheridamas* in the extent of the blue magnificent spots of the upper surface; the preapical macula also appears nearly again as large. The under surface differs from *pheridamas* by a more reddish-yellow upper surface being more profusely decorated with *attalis*. silvery white spots. Minas Geraes, Espiritu Santo, very rare. — **attalis** subsp. nov. is based upon ♀♀ from Bolivia, which Mr. FASSL has sent from there. The blue bands of the upper surface are narrowed, and the under surface is preponderantly coloured in grey instead of yellow.

deiphile. **P. deiphile** Godt., the best-known of the variegated species, inhabiting Central Brazil. I have before me specimens from Espiritu Santo, and v. BOENNINGHAUSEN knew Petropolis in the Organ Mountains as their habitat. The upper surface resembles *P. xenagoras*-♂ (113 a), but the black costal dot in the series of orange-yellow spots of the hindwings is absent. The violet zone of the upper surface more extensive, and beyond the cell there is in the ♀ a grey or whitish violet diffuse spot. Under surface reddish-brown, otherwise like in *xenagoras* (113 a).

xenagoras. **P. xenagoras** Hew. (113 a ♂♀) differs somewhat in the extent of the violet part of the forewings of the ♀♀. Thus I possess a specimen with almost entirely brown forewings exhibiting but a faint violet lustre. The ♀ is generally by one third larger than the rather large ♂ of this species. The black of the upper surface somewhat more subdued. Of the magnificent violet of the ♂ there is only yet a narrow stripe of 1 cm width left on forewings and hindwings, being more profoundly dark ultra-marine blue and bordered indistinctly. The yellowish-brown submarginal spots nearly again as large as in the ♂, on the hindwing also the 3 most proximal ones exhibit black dots between the ocelli, which are lacking the ♂. The costal margin of the forewing being faintly indicated yellowish-brown in the ♂, is much more sharply and distinctly prominent in the ♀, as well as the white fringes of both the wings. The under surface analogous to the ♂ of a deep dark rust-brown; the white enamel spotting just as conspicuously prominent. Bolivia. The figures of this species were depicted by the directions of Mr. ROBERT BIEDERMANN according to specimens of his collection.

garleppiana. **P. garleppiana** differs from *P. xenagoras* by the appearance of a light blue band of the upper surface of the forewings. We have to distinguish two territorial forms: **garleppiana** Stgr. (112 d ♂, 113 a ♀) from Bolivia. The ♀ was discovered by FASSL and described as follows: very different from the *P. xenagoras*-♀; especially of a considerably larger size (expanse of wings 106 mm). Upper surface likewise of a dull black, but the violet reflection of the ♂ is absent and there remains only the blue, very narrow *Prepona*-band, very short in the forewing, reaching upwards only to the anterior median, being downwards widened and terminating at the proximal margin, bent somewhat proximally; it is, therefore, not identical with the quite differently coloured and shaped band of the ♀ of *xenagoras*. In the hindwing the blue band corresponds to that of the ♂, the violet reflection likewise absent. The yellow submarginal spots of the forewing similar to those in the ♀ of *xenagoras*; costal margin, however, far less intensely yellow. The submarginal macular-band of the hindwing obviously differing from that of the ♀ described above, the two eye-spots on both the surfaces nearly again as large, but the 3 interjacent yellow spots of the band not black eye-spotted as in the former; on the under surface these spots show through, though but in the shape of 3 whitish-blue, minute dots. The brown colour of the under

surface much lighter ochreous than in the ♀ of *xenagoras*. The silvery white spotting which, moreover, varies extremely also in the ♂♂ of both the forms, very large and distinctly pronounced. The ♂ of *P. garleppiana* being one of the very greatest rarities of the South American Nymphalidae, the sole ♀ taken in February 1913 in the North Yungas of Bolivia at an altitude of 1700 m will probably stay unique for a long time. — **sphacteria** *subsp. nov.* is a Peruvian race of a smaller habitus, with narrowed blue bands and almost extinct orange spots of the forewings. Type in the Tring Museum. sphacteria.

P. brooksiana *Godt.* replaces *P. garleppiana* in Mexico. Upper surface still more gorgeous by an almost again as broad light blue band, compared to *P. garleppiana*, reaching besides the costal margin of the forewings. The orange spots longer, though of a more oblong than square shape. The foremost, subapical one is absent, all the maculae of the hindwings, however, are black-pupilled. The under surface approximates that of *P. deiphile* *Godt.*, being preponderantly reddish-brown and having also the white transcellular spot of the forewings in common with *deiphile*, which is absent in *P. xenagoras* and *P. garleppiana*. There are only 3 specimens known to a certainty. 1 ♀ (the type) from Coatepec (Mexico); a second ♀ in the Paris Museum and a third damaged specimen in the Coll. SCHAUS. ♂♂ have not yet been discovered. brooksiana.

P. praeneste forms the transition from the genus *Prepona* to the red species of the genus *Agrias*. *praeneste* and its southern vicarious type, *P. buckleyana*, are the sole representatives of their magnificent genus with red transverse bands of the forewings and a series of red spots on the hindwings. The under surface is reddish-brown with a light red median stripe and a black submedian zone of the forewings. The hindwings may be unicolorously reddish-brown or exhibit greyish-white decorative spots looking like dewy pearls or like precious stones mounted therein. **praeneste** *Hew.* (113 c) is found as a great rarity in Colombia. There exist ♂♂ with white median spots of the under surface of the hindwings, as HEWITSON and STAUDINGER have depicted them. In the latter author's collection of the Berlin Museum, however, I saw also ♂♂ from the Rio Dagua without this decoration: this is **privata** *form. nov.*, whereas ♂♂ from the Cauca Valley always exhibit this decoration. — Of the ♀ we figure (113 b) a form **paradisiaca** *Fassl* with a violet lustre on the upper surface of the hindwings. There exist, however, also unicolorous ♀♀ without the blue discus of the hindwings. A. H. FASSL writes about their capture: praeneste.
privata.
paradisiaca.

praeneste seems to fly only in the rainy period, as I was collecting here for a longer time in the dry period without catching sight of a single specimen; finally I succeeded in taking several specimens, whereat I had also occasion to experience the extraordinary intelligence of the animal in judging a danger. An entirely faultless specimen one day timidly flew away from the bait up as far as to the crown of an enormously high tree of the primeval forest. I posted myself in a hidden place near by and after about a quarter of an hour, I was happy to see the red animal flying quickly down to the ground in large spirals; it inspected, however, most closely the whole surroundings and even came quite near me, but it seemed not to like me, although I kept standing still as if made of stone. At last the butterfly sat down on the tip of a twig about 10 m vertically above the bait, so that only the antennae being stretched out forward and the head were looking out over the outermost rim of the leaf. In this position the beautiful butterfly viewed the whole surroundings and I thought it advisable to retire further back. But it could not resist the strong odour of the bait, and after having been flying for a long time timidly about, it once more settled down on the lure. Now I could easily approach it from the shelter and capture it.

praenestina *subsp. nov.*, a more southern race which has of late come oftener to Europe than the northern *praeneste*. ♂♂ immediately separable from Colombian ♂♂ by the band of the forewings being distally considerably broadened and pushing back the violet margin quite close to the middle median, growing broader also anteriorly beyond the cellule and fully absorbing the red submarginal spot in the anterior median space. — **confusa** *Niep.* is a form belonging to the species, with large subapical spots. From the Chanchamayo in Peru. praenestina.
confusa.

P. buckleyana *Hew.* (113 b) differs from *P. praeneste* by the absence of the red intra-radial submarginal spots of the forewings in both the sexes. The red maculae of the hindwings are more uniform, broader and are united to a more compact band. Beneath, *buckleyana* is separable from the more northern vicarious type by a silvery white spot before the cell-apex of the forewings. There exist specimens with a white median decoration of the hindwings and also without it. „The ♀ of *P. buckleyana* is somewhat larger than the ♂ of this form and somewhat more subdued blackish-brown in the ground-colour. All the markings being purple-red in the ♂ are light scarlet (thus not orange-brown as in the ♀ of *praeneste*); the red bow of the forewing in its innermost part brightened up whitish. Instead of the deep violet reflection of the ♂, we notice in the ♀ a large spot of a light blue gloss spread over each of the discal parts of the wings, which, in the forewing, extends towards the apex somewhat over the red bow leaving in the hindwing a broad black margin of about 7 mm free after the red band. The under surface greatly resembles that of the ♂; the silvery spots are also especially distinct. The shape of the wings also similar as in the ♂ somewhat broadly stretched and thereby, as everybody knows, distinctly differentiated also from *P. praeneste* being looked at as the original form, so that, without counting the differences in the markings, with respect to the very different shape of the wings, *P. buckleyana* may be considered as a proper species *). The ♀ of *buckleyana* may justly be called the most beautiful of all the Nymphalidae existing. The peculiarly light-blue reflection, especially where it is spread over the delicate pink-red, is of such a magnificent effect that no other butterfly, not even the most beautiful *Agrias*, can be compared with this animal. „I captured the sole, extremely rare and beautiful specimen here in the densest primeval forest of the mountains, after having been searching for it in vain for several months at the capturing-place of the ♂♂ of this form. A fortnight after having written the article above, I succeeded in capturing the buckleyana.

*) Uncus relatively short, its clubs, however, broader, more compact and more sharply armed than in any other of the species examined hitherto.

second ♀ of *buckleyana* differing considerably from the above described specimen by the absence of any blue reflection. We thus have the analogous case as in *P. praeneste* from Colombia which likewise possesses two different ♀♀-forms, one with plain colours and one (much rarer) with an intensely light-blue reflection which I described as *P. praeneste* ♀ ab. *paradisiaca* once before" (FASSL). The corresponding second ♀-form of the *olympica*. Bolivian race with the light-blue gloss on the wings mentioned above was described as *olympica* FASSL (113 b). *elevata*. — A most interesting alpine form has been described as *elevata* Fassl (113 b), with yellow instead of red bands on the upper surface of both the wings. Its author writes about this alpine race: „But what struck me, was the uncommonly high habitat of the animal at the ridge of a mountain-chain of the Cordilleras at an elevation of 2000 m, thus being the highest spot where I ever took *P. buckleyana*; all the others originated from altitudes of 700 to 1700 m. It may be possible that this conspicuous, beautiful aberration of the otherwise purple *Prepona* represents a constant alpine form of it. Unfortunately the said habitat is eternally surrounded by fogs and clouds, so that I have little hope to take some more specimens of this new species on further excursions into this deserted, marshy, reedy and entirely impassable district of the primeval forest of the Bolivian high mountains. Moreover, as to the considerable altitude up to which the red *Prepona* as well as the two forms mentioned first fly which, with their magnificent and variegated upper surfaces evidently do not at all belong to the other butterflies surrounding them there, a comparison of the animals when sitting on the ground, results in a most amazing likeness of the combination of colours on their under surfaces, consisting of silvery white dots and streaks on an ochreous, reddish or black ground. I captured, for instance, on a path of 4 km length, which I had constructed myself in the dark primeval forest of the North Yunga of Bolivia in an altitude of 1700 m, the following species of butterflies in the course of 6 months: *Adelpha saundersi*, *Prepona buckleyana*, *xenagoras*, *garleppiana*, *Opoptera bracteolata*, *Eryphanes zolvizora*, *Caligo phokilides*, *Lymanopoda albomaculata* and *albocincta*, several species of *Pedaliodes* with „mildew“-spots on the under surface, *Daedalma dinias* etc. I wonder whether these white and silvery spots on the under surface of the above-mentioned animals are perhaps adapted to the water-drops of their home in the alpine primeval forest being eternally damp and dripping with wet? The *Prepona* flying 800 m further down in the forest of the hot valleys, in spite of their much greater number of species, do not exhibit one single under surface, being so intensely dark and decorated with silver, nor does any *Adelpha*, *Brassolida* or *Satyrida* show such a conspicuous homogeneousness of colours on their under surface, as the above-mentioned alpine animals of the same genera" (FASSL). In conclusion I beg to thank Mr. ROBERT BIEDERMANN of Winterthur for the readiness shown in permitting to have some rare specimens out of his collection — among them also the first 8 figures of plate 113 — photographed and coloured from the original for our work.

58. Genus: *Agrias* Dbl.

In this magnificent tropical genus, upon which nature seems to have showered all her abundance of most brilliant colours, and which is, therefore, justly called the „princely race“ of the *Nymphalidae*, we are most surprised to meet a repetition of two genera of not less abundant colours; the *Callithea* and *Catagramma*, except that the *Agrias*-species greatly excel the latter in size and magnificent colours, and only the ♂♂ of this genus bear a sexual distinction in the shape of a hair-brush on the hindwings. Some of them, like the famous *A. sardanapalus*, having been first discovered by BATES in the Amazon Valley, are of an absolutely charming beauty, and the contrast of its purple-red forewings beaming through a blue lustre hues over them as if in a violet purple gloss, with the brilliantly sapphire-blue hindwings, is undoubtedly one of the most magnificent sights that nature has ever produced in the whole world of butterflies. By the structure of the organs and by the veins, *Agrias* is so nearly allied to *Prepona* that there exist but slight differences between the two genera. Both the subgenera, besides, are interosculating by forms as those already mentioned in *Prepona*, *P. deiphile* Godt. and *P. praeneste* Hew., the larva being very similar, too.

Agrias differs from *Prepona* only by the shorter, but otherwise similarly haired and scaled palpi and the weaker and thinner antennae which, without a distinct club, gradually grow thicker up to the point. The forewings are broader, not protracted in the shape of a sickle, the hindwings more rounded. The cells of both the wings are just like in *Prepona* closed by a fine posterior discocellular. In all the species, however, there exists a highly developed hair-tuft of the hindwings, being of a rudimentary shape in but some species of *Prepona*. This scent-brush is placed near the origin of the submedian and corresponds with a pocket at both sides of the abdomen, the interior of which is densely filled up with claviform, modified scales. Such scent-apparatuses are rare in the *Nymphalidae*; but we likewise find them in the *Prothoe* of Indo-Australia, though somewhat less luxuriantly formed.

The globular egg is almost of the same size as that of *Saturnia pyri*; yellowish-white, of a subdued gloss and without a visible structure of the surface.

The small larva creeps out after 8 days; it is greyish-green, posteriorly tapering in the shape of a wedge

and set with fine hairs. The tracheae are bordered in black. The head of the larva remarkably large and broader than the trunk. The larva itself with high obtuse horn at the head and two very long cones at the anus. On the first segment two white dots; the fourth segment somewhat thicker than the others. Pupa with 2 long rather pointed horns. (Description according to blown-out specimens of *A. claudianus* in the British Museum.)

According to Dr. HAHNEL, *Agrias* are not so restless as their allies, the *Prepona*, and although their flight is sufficiently swift, they still do not disclose that rapidity by which the *Prepona*, being superior in size and wing-contour, distinguish themselves. Especially remarkable is the persistence with which they cling to their once chosen resting-place, a leaf high up projecting freely into the road. There one may observe them motionless for a long time, and even if they fly off, they return exactly to the same spot. In this unswerving rest they allow us, without fear, to approach the net by means of a long stick, and on hitting then energetically in the direction in which they want to fly off, we mostly have the butterfly safe in our net. The height in which they usually rest, varies from 5 to 10 m, so that the odour of the bait laid out does not always come near them.

FASSL writes (in the Soc. Ent. 1911 p. 27) about the habits of the Colombian species, „that *Agrias* have a swift and very timid flight, appearing mostly only on very hot days at noon and always single, in the extensive primeval forests and rarely at altitudes of more than 1000 m.“ „While *Prepona* often cross rapidly the forest already at 9 a. m. and even when the sky is somewhat cloudy, I so far saw *Agrias* only in the greatest heat at noon. Several times I also chanced to see them dashing in circles round high crowns of trees, and even when they approach the bait on the ground, they come down from above in wide spirals, often encircling yet the place for a minute, in which one can recognize only a red line, owing to the swiftness of their flight. The latter has repeatedly been compared to that of *Prepona*, but I cannot quite approve of this, since *Prepona* have a decidedly slower motion, in which they often produce a whizzing noise, similar to that of large Hesperids. There exists, however, a remarkable likeness in the flight of *Agrias* and in their whole behaviour, with *Smayrna* which genus is also very similar in the habitus and the representatives of which are not alone widely distributed but also locally quite common in Tropical America.“

The single individuals of *Agrias* are subject to great variability of colours, what is already proved by our 38 figures belonging only to seven species. The sexual dimorphism is more pronounced than in *Prepona*, the shape of the wings of the ♀♀ is inclined to considerable variations in the contour of the forewings. In both the sexes there occurs dichroism, and we know ♂♂ with red and with ochre-yellow basal spot of the forewings independent of the locality. In one species we notice intermittingly, according to the locality, an orange or blue basal spot. The extent of the celebrated blue reflection is likewise subject to great deviations, being either rudimentary or luxuriant, or sometimes even absent altogether. The markings on the under surface, however, are extremely constant, forming a welcome hint for the grouping of the polychromatic territorial races; but also here there are again coloristic motives without importance, yellow and red varying ad libitum; besides, the basal spot may in one race cover half the upper surface of the wings (*beatifica*) or be confined upon narrow streaks (*beata*). Just like the spots of the wings, the colour of the scent-tufts also varies from light yellow to reddish-brown (*sardanapalus*, *claudianus*), from orange to greenish (*hewitsonius*, *beatifica*).

Considering the great variability of the *Agrias* it is not to be wondered at that their specific valuation has been most varying. KIRBY in 1871 knew already 7 species, of which, according to the notions of to-day, one form *beatifica* Hew. (1869), is to be inserted in *hewitsonianus* Bates (1860), so that there remain de facto only 6 species. One of them (*A. claudia*) was already known since 1776, remaining forgotten for more than a century, until my explorer JULIUS MICHAELIS discovered it again in 1894. From 1776 to the epoch-making voyage of BATES in the middle of the last century, there was only one *Agrias* yet discovered in Colombia. BATES succeeded in discovering 4 distinct species and several geographical races. Then there was again a standstill, until Dr. HAHNEL, together with his pupils, brought a number of interesting areal forms to our knowledge. Thus it arrived that STAUDINGER in 1888 believed to be justified in enumerating no less than 14 species with 5 sub-forms. In 1897, I confined this number, in spite of the discovery of new local forms, to 12 species which STAUDINGER reduced once more, a year afterwards, to 10 collective species. Of these 10 species there are again two immediately to be eliminated as sub-forms, so that we must to-day return to the number of collective species in KIRBY'S Catalogue, because since BATES there has come again but one fully qualified species to Europe: *A. narcissus*. We may, therefore, assume that we now know all the really existing species, but we have yet to expect a great number of sub-forms of which there are new ones discovered by every important entomological expedition. The chief range of our magnificent genus is congruent with the watercourses of the Amazon in its whole enormous extension. 6 species have their habitat there; a seventh species (*narcissus*) was first observed in Surinam, later on in Cayenne, but ascertained also for Obidos by my collector MICHAELIS. Thus there remains but one non-Amazonic species, *aedon* F., which occurs exclusively in Colombia and on the volcano of Chiriqui.

Of the 7 species only two cross the real equatorial zone: first of all the oldest species, *claudia*, which has reached Southern Brazil on the Atlantic Ocean. Beside it, a second expansible species (*amydon*) advances in the east as far as Bolivia, while in the west, it does not cross Central Brazil anymore. Curiously enough, Venezuela is not inhabited by any *Agrias*, while we know 2 species from Cayenne and 2 species from Surinam.

As to their exterior, the *Agrias* are to be divided into two groups: the species with a red upper surface, and those with a variegated upper surface, being beneath spotted preponderantly with yellow or green. Both the groups are united by *A. amydon* with partly reddish-, partly already yellowish-coloured ♀♀.

A. claudia. The oldest species, the red *Agrias par excellence*; ground-colour above black, sometimes with a yellowish preapical brightening of the forewings. The latter always with a red basal area varying in intensity of colour and in size according to the areal form. Hindwings with a large red disk diminishing in size from north to south, thus attaining its natural maximum in Surinam, its minimum in Santa Catharina. In the Andine branches of the collective species and most of the forms of the Amazon, the red disk of the hindwings is replaced by a small blue spot, and one might be attempted to consider such races as a proper species, unless there occurred a vicarious type in Mato-Grosso uniting both the coloristic motives. — *claudia*. **claudia** Schulz resembles above in the male sex a ♂ of *sahlkei* (115 d), but the black subanal spot of the forewings remains very small and does not extend beyond the submedian. The ♀ approximates the ♀ of *croesus* (115 b), though the proximal margin of the forewings is also covered with red and the yellow subapical band of the forewings is absent. The ♀ has been known already since 1776, the ♂ I first found in the Museum in Stuttgart in 1895, and obtained myself the first specimens by J. MICHAELIS who by my orders and at my cost went to Surinam chiefly on account of these *Agrias*. — *sahlkei*. **sahlkei** Honr. (115 d) is an areal form distinguishable from *claudia* by the black spot of the forewings advancing as far as to the posterior median. In the ♀ the red disk of the hindwings is sometimes stunted so that only a narrow red streak remains. Cayenne. Figure according to a ♂ in the Coll. FRUHSTORFER. — On the Amazon there occurs a most similar subspecies, **croesus** Stgr. (115 b) recognizable by the three relatively large yellow spots before the apex of the forewing. The ♀ was figured according to a specimen discovered near Para, in the Coll. RIFFARTH; a ♂ belonging to it was described by STAUDINGER as a variety of *A. sardanapalus*, from the Itaituba on the Lower Amazon. MICHAEL reports about the capture of this butterfly (Iris 1894):

„One day I saw a magnificent *Agrias* sitting on the said liana which I visited day by day; judging from the under surface I took it to be *sardanapalus*, but I was greatly surprised on discovering, when I took it out from the net, that it was the long looked for, fabulous ♂ of *claudia*. This *claudia* from the Amazon is indeed very easy to mistake for *sardanapalus* on the under surface; above, however, the difference is very great, since *claudia* exhibits on the hindwings a large red spot being proximally bordered by blue. Although I was now eagerly in search also for this butterfly, I only succeeded in capturing a second specimen of this magnificent animal 3 years later, having returned to Itaituba; and it was most wonderful how I came into possession of it. It was during my last stay at Itaituba in spring 1893, when all of a sudden at noon, just on the point of leaving the mentioned place, I saw an *Agrias* at a considerable height, though soon settling on a leaf. My longest net-poles were unfortunately much too short; in my haste I could not find a suitable stick in the woods, and only after having been searching for a long while I found a little slender tree of about 20 feet length which was fit for a net-pole. But on fastening the net to it, the thin pole moved to and fro, and it was really a wonder that I anyhow got the butterfly into the net, after having remained sitting on the leaf for almost 15 minutes, until I had found the said pole.“

amazonica. **amazonica** Stgr. is a ♀ from the Lower, northern Amazon, which was discovered near Faro, in the Brazilian part of Guiana. It has an almost entirely black upper surface of the hindwings, bearing scattered small red scales only in the cellule; the veins are likewise covered with red towards the base. MICHAEL writes about this form:

„When I was walking along a path on the beach, I suddenly noticed a red ray dashing through the air and soon recognized a magnificent *Agrias* which for some moments encircled the branch of a tree, about 8 m above me, in order to settle finally down on it. At first I did not know what to do. But fortunately I noticed a small slender tree in some distance, on which I hurriedly climbed up. But on arriving on top I was rather annoyed to discover that the net was still too short. I nevertheless attempted, leaning forward as far as I could, a desperate blow and was happy to see the beautiful being soon jerking about in the net. It was rather difficult to get down again. After having reached the ground, I began to inspect my most interesting booty and discovered something quite new to me. As I, however, knew only *phalcidon* and *sardanapalus*, I took the animal to be the ♀ of the latter, and even Dr. HAHNEL remained for some time in the dark about it; but it soon proved to be the ♀ of *claudia amazonica*.“

vesta. **vesta** Fruhst. is a ♂-form the forewings of which agree with those of *A. claudia*, but the red of the forewings is more intense, and there are already the beginnings of a blue gloss beyond the cellule noticeable. The hindwings exhibit a smaller dark-violet disk at the cell-wall. The under surface resembles that of *claudia*, only the transcellular grey short band of the forewings is somewhat broader and the total colouring darker. Obidos *maxentia*. **maxentia** Fruhst. from Marcapata (Peru) approximates *croesus* Stgr., the red of the forewings, however, is darker, the discal macula of the hindwings somewhat blurred. Under surface of more intense colours than in *vesta*. *infernalis*. Type in the Coll. STAUDINGER. — **infernalis** Fruhst. shows on the forewings an increase of the red zone. The hindwings, however, are above quite black with slightly rouging veins near the cell-wall. British Guiana, *godmani*. **godmani** Fruhst. (115 b), a gigantic form and at the same time the most variable of all

the *claudia*-races. By the appearance of an extensive blue reflection at the periphery of the red spotting, a resemblance of *sardanapalus* is created. The yellowish macular band of the forewings shown by our figure of the type from GODMAN's collection, may be absent, the red of the forewings sometimes extends to a broad patch resembling *claudia*, without black indentation at the submedian. The red disk of the hindwings may also increase in extent (fa. **phoenix** Niep.). Besides there exist specimens resembling still more *A. sardanapalus phoenix*, by the absence of the red disk being replaced by a dull ultramarine blue discal spot (fa. **semirubra** Niep.). Habitat of the wonderful race Mato Grosso. — **claudina** Godt. (115 a as *claudianus*-♀ and a 4) is found in Central *claudina*. Brazil, according to specimens of my collection in Espirito Santo, Minas-Geraes, and Rio de Janeiro. The ♂♂ differ from *claudianus* (115 a) by the presence of a yellow brightening of the forewings, like in *godmani*, which remains beneath almost purely white. The basal area is lighter carmine and it may sometimes be at the submedian quite untouched by the black indentation, so that such ♂♂ with an area being cut off at the submedian as if with a ruler, resemble the ♀ of *croesus* (115 b). The ♂ bears a scent-pencil being slightly rouged at the tip, described, however, already by GODART. The red discal spot of the hindwing is somewhat more extensive than in *claudianus* and placed nearer to the distal margin, which was likewise noticed and called attention to by GODART. The ♀ (115 a 3 misprinted into *claudianus*) has generally a larger red disk than our figure and it is, compared with ♀♀ from more southern provinces, on the forewings brighter though pale red, and the second transcellular median band of the under surface of the hindwings light grey instead of blackish violet-grey as in *claudianus*. — The ante-terminal black band of the hindwings is of variable width; it is very narrow in a ♀ from Minas Geraes, uncommonly strong in a ♀ from Rio de Janeiro. The subapical oblique band of the forewings is likewise variable, almost white as chalk in a ♀ from Minas, pale ochre-yellow in a Rio-♀. According to statements of BOENNINGHAUSEN, *claudina*, though rare in the Province of Rio de Janeiro, is, however, sometimes found in the Botanical Gardens and on the Corcovado. — **pallantis** Fruhst. ♀ above very *pallantis*, closely allied to *A. claudia claudina* Godt. from Rio de Janeiro, Espirito Santo and Minas-Geraes of my collection. The three blurred yellowish preapical spots of the forewings are somewhat narrower than in the ♀♀ of my collection, the red area of the forewings, however, considerably larger, so that the transcellular spot does not appear anymore triangular, but square, and reaches as far as close to the costal. At the submedian there remains but a narrow black segment. On the hindwings all the veins from the anterior radial to the middle median have a reddish hue. The postdiscal red spot more than again as broad as in *A. claudina*-♀. The under surface of the hindwings somewhat lighter than in the ♀ from Rio de Janeiro, the lighter blue-pupilled submarginal spots are placed in a more greenish yellow area, and the anteterminal black band is hardly half as broad. Presumably from one of the Brazilian North Provinces, ♀-type in the Geneva Museum, from the Coll. JURINE, which is already more than a century old. The butterfly, however, is still just as fresh as the specimens having been for 15 and 20 years in my collection. *A. pallantis* (denominated according to an epithet for Aurora) forms a transition from *A. claudina* to *A. claudia* from Surinam, and most probably some more intermediate forms will be discovered yet, approximating still more the old *A. claudia* Schulz by a larger red disk of the hindwings. — **plausibilis** subsp. nov. forms the transition from *claudina* to *claudianus*. It has above already *plausibilis*, the character of *claudianus* and, contrary to the more northern forms, a dark carmine, purple-tinged and more crescentiform red basal part of the forewings. This part is cut out by the submedian from the black inner margin in the shape of a segment. The red discal spot of the hindwings still more broadly effused than in *claudianus* (115 a). The under surface approximates *claudina* by a whitish-grey subapical band, instead of hazy yellowish as in *claudianus*. The hindwings also rather exhibit the attributes of the Rio-form than those of *claudianus*, the transcellular median band remains light yellow, the distal one nearly whitish grey and narrower than in the more northern and more southern vicarious type. The black ocelli of the hindwings decidedly smaller than in the sister-races. Habitat unknown, but presumably São Paulo or Paraná. — **claudianus** Stgr. (115 a) *claudianus*, is incorrectly depicted in our figure by the red discal spot of the hindwings being laid out too broad. In fact it is hardly indicated on the upper surface of the hindwings. The ♀ also exhibits above only an insignificant reddish, black-powdered diffuse spot of the hindwings. The preapical oblique band of the forewings in both sexes yellowish, the submarginal zone of the hindwings surrounding the blue-pupilled eye-spots greenish brown, the median band close at the cell brownish-grey, the postdiscal band greyish-violet as well as the cell-area. Santa Catharina. *claudianus* has scarcely ever been captured as imago, but been bred from larvae. Its occurrence beyond Blumenau was hitherto not ascertained, but JULIUS MICHAELIS has discovered it yet near Thereopolis, thus farther to the south. The larva, according to JUL. SCHEIDEMANTEL's drawing, resembles that of a *Prepona*; the warts on the rings 3 and 5 seem to be absent, but the not paired protuberance on the fourth ring is present. The larva ends into a furcated tail similar to that of *Prepona laertes*. — **sardanapalus** was understood by KIRBY and myself to be a local race of *A. claudia*. The occurrence of decided *claudia*-forms, beside quite typical *sardanapalus*, however, might induce us to revert to the assumption of BATES that *sardanapalus* is a distinct species. Without counting the larger size compared to all the *claudia*-forms (except *A. godmani* Fruhst.), one might oppose the wing-contour of the forewings being always more roundish and the much more imposing scent-pencil being more purely and lighter yellow haired, as distinction-marks. The decisive under surface, however, does not offer any prehensible differential characters. The presence of the semi-arc-streak

at the costal margin of the hindwings beginning at the precostal, and then swinging distally along as far as to the middle of the costal, to which STAUDINGER attached such great importance, exists constantly complete in *sardanapalus*, but we find it in *claudia* itself and in *claudianus* both in the ♂♂ as well as in the ♀♀ sometimes in exactly the same development. It may, however, be also dissolved into two isolated maculae, like in a *claudia*-♀, while the ♂ possesses it yet as a complete arc. Claspings-organs with a somewhat broader valve than in *A. claudia* and *claudina*; the club at the uncus more robust, with stronger spines. The range of *A. sardanapalus* is much more limited than that of *A. claudia*, since it is met only from the Upper Amazon to Bolivia. The southern forms are beneath modified entirely analogous to the South Brazilian races.

BATES says about the *sardanapalus*:

„This magnificent butterfly is one of the most variegated of the whole entomological world. I found it at different places of the Upper Amazon, but always only in sunny clearings of the primeval forests and in oppressively hot weather between the wet and dry season. It flies similarly as the *Prepona* and it is, therefore, quite impossible to capture it except when it is sitting. The first specimens I saw were baited by the sap exuding from a tree where a dense crowd of other beautiful butterflies, such as *Prepona*, *Paphia* (*Anaca*), *Siderona*, *Gynaecia* and others were daily assembled. But the continual coming and going of the greedy animals made the wonderful *Agrias* extremely timid and wary, so that I could not grasp it. When being met alone in the roads sitting on defilements, it was much easier to capture, but only 3 or 4 times during the long years I succeeded in meeting it in such a position.“

Dr. HAHNEL writes:

„By far more precious than the *Panacea* flying in open spaces, appeared to us some few specimens of the large *sardanapalus* clad in purple and blue, which we captured at the bait in the forest and which is not exceeded in beauty (?) by any other butterfly. For although some Indian Ornithoptera and the Morphids flying on the Amazon surpass it in the development of single attributes, such as size and splendour of colours, they do not come up to its abundant and most thoroughly accomplished markings of the under surface expressing the Nymphalid-type the most perfectly in *sardanapalus*. But above all other excellencies it was adorned by the noble descent, belonging to a genus being in every way unblemished by vulgarity, the species of which are rarities to such an extent that none of the existing large collections is able to boast of possessing all of them in completion.“

sardanapalus, clad in purple and blue, is fond of flying about very high between the sunny tops of trees and it comes down only sometimes when scenting something that appears especially piquant to it. On being chased up, it has the same dashing flight of lightning-speed as the *Prepona*, and nothing is seen but a sparkling of red, violet and blue. The rare deep-blue *stuarti* shows quite different movements. It also flies rather swiftly, but it has the same elegant, gliding flight as *phalcidon* and *pericles*, exhibiting the most brilliantly the magnificent deep blue, surrounded by the grand primeval forest. But few have been granted the pleasure of enjoying this charming sight, and even the collector is not very enthusiastic about it, unless he succeeds in obtaining the butterfly. — *sardanapalus* Bates (113 d) is characterized by the extensive transcellular red of the forewings and the light sparkling blue occupying by far the greatest part of the hindwings, being otherwise black. ♀♀ are very rare and not yet described from the Amazon district. Hitherto known only from the Upper Amazon. It is always rare, although the species occurs all the year round near São Paulo and Pebas.

„Here in Manicoré, I had, in the beginning of October, the chance of capturing my first *Agrias sardanapalus*: this capture I shall likewise never forget. On that day I was walking along my road as usually, when all of a sudden I saw a wonderful butterfly sitting directly in front of me on a small heap of excrements. But unfortunately too late, for I could just get a glimpse yet of the magnificent red and blue of its upper surface, when it was already dashing off in the swiftest flight. I noticed it, however, resting on a thick tree near by, though at a considerable height, with its head downward, like the *Prepona*. Now I looked about for a suitable hiding-place and began to wait, since I was quite certain that it would surely return to that delicacy. More than half an hour elapsed and I began to grow impatient. Now it moved its wings, but remained yet for a minute, slowly opening its wings, in this position. Finally, apparently once more enticed by the scent, it flew off and after having first cautiously been circling round the said place for some time, like an eagle, it finally settled down on it, fluttering restlessly. Now I succeeded also in stalking it and capturing it by covering it carefully with the net. That was the first specimen of this truly royal animal, and you may well imagine my pleasure when, on opening the wings, I saw the magnificently sparkling red and blue. In spite of all my efforts in baiting it, I succeeded only 4 weeks hereafter in obtaining the second specimen, and in the next month only the third and last specimen.“

Sardanapalus seems to be one of the most widely spread species of *Agrias*, as I saw one specimen near Manáos on the yonder bank of the Amazon River, and another on the Rio Negro, while I captured it in Manicoré, as well as in São Paulo de Olivença and Iquitos, besides the species has been found in the Cordilleras.“ (Dr. HAHNEL.)

sara. *sara* Fruhst. has lost the blue reflection distal from the cell of the forewings, the red transcellular spot of the forewings is very much decreasing, whereas the black distal margin gains the same extent as in *A. bolivianus* (113 c). The under surface, however, inclines to a brighter hue; the type in the Coll. OBERTHÜR has even a broad white median band of the hindwings. From Sarayacu and other places in Ecuador. — *lugens* Stgr. denotes a geographical variety of Southern Peru which has occasionally come to us from Pozzuzo especially in the last years. The type originates from the Chanchamayo. According to the 10 specimens of my collection about half of the specimens have no blue reflection at all beyond the intensely red area the others having a blackish-darkened, partially indistinct steel-blue reflection. The blue disk of the hindwings is sometimes receding (= fa. *hades*. *hades* Lathy at first reported from Northern Peru); and if it is absent altogether, we have the form *decyanea* *decyanea*. Niep. — As *lugina* Fruhst. the Bolivian race was denominated, because the name of *bolivianus* Stgr. (113 c) collides with *A. amydon boliviensis* Fruhst. *lugina* is in its size inferior to the Peruvian geographical race, and

the design of markings of the under surface (113 d ♂) follows the tendency of the South Brazilian forms of *claudia* in as much as the yellowish- or greenish-grey areas at the base of the hindwings of *lugens* and *sardanapalus*, as well as the median bands of them, are peculiarly discoloured into greyish-violet. The distal margin of the hindwings likewise participates in this modification, and the submarginal zone surrounding the ocelli assumes a deeper brown analogous to *claudianus*. Another thing remarkable is an uncommonly broad, almost purely white subapical band of the forewings, followed by a transecular spot of the same colour. *lugina*, in its variability, is better known than *lugens* and undoubtedly subject to greater differences in colouring than the Peruvian race. ♂♂ have, as a rule, no blue reflection whatever distal from the red basal area. — Specimens with a magnificent blue band of the forewings, as we figure 113 c, are rare and have been denominated **sardanapaloides** *sardanapaloides*. *Fassl.* The blue spot of the hindwings in this form leaves free only a narrow black distal margin. But specimens with a reduced blue disk are of more frequent occurrence, and we may even expect ♂♂ without any at all, although none has been discovered so far. A specimen captured by *Fassl.* is interesting for possessing in the blue spot of the hindwing at the end of the discocellular another small oblong red diffuse spot, thus forming already the transition to *A. godmani Fruhst.* the habitat of which is further inland. The ♀♀ generally resemble the ♀ of *A. amydon* (113 d), but the forewings exhibit a much narrower, darker red covering and an insignificant whitish, instead of yellowish, diffuse spot before the apex. The ♀, being by far the most common, is certainly that with unicolorously brown-black hindwings. *Fassl.* captured also such a specimen, though only one, in which the white-blue double pupil of the ocellated band in the anal angle of the hindwing shows very distinctly through above. A second ♀ form is that with traces of red in the hindwing. One specimen has, analogous to the extent of the large blue spot of the *bolivianus*-♂ (113 c), a uniformly red tinge at the hindwing; in another specimen the red is confined upon a slight hue across a short distance in the median of the hindwing. The third ♀-form, finally, with blue in the hindwing, thus retrograding to the colouring of the ♂, has a faint discal blue tinge of the hindwings. Sometimes the blue spot of the hindwing is of almost the same size and intensity as in the ♂ of *bolivianus*. This magnificent ♀ form, with extensive blue in the hindwings, is denominated **thusnelda** *Fassl.* We might mention yet a ♀ with unicolorously black hindwings possess- *thusnelda*. ing, however, a faintly blue tinged apex above the red arc of the forewing; it may be a cross-breed between a richly coloured *sardanapaloides*-♂ and a poorly coloured *lugina*-♀.

A. aedon, the third of the red species, has uncommonly pointed wings in the ♂ and resembles above a very dark *sardanapalus*. The red area of the forewings remains relatively narrow, it is covered with a dark purple hue, the inner margin of the forewings being broadly bordered with black. The magnificent spot of the hindwings darker blue than in *A. sardanapalus*, the scent-pencil with reddish tips of its hairs. The under surface is most peculiar and cannot be confounded with any other *Agrias*. Both the wings, except the pale reddish median area of the forewings, of a peculiar bluish grey. Forewing with two brown oblique bands; hindwing with three red-brown longitudinal stripes, being proximally bent inwards between the medians. Between the bands there is no variegated filling at all, like in the other *Agrias*. The basal area likewise exhibits only a most scarce brown spotting. The ♀ has round wings, is larger than the ♂, above unicolorous with a red median area being distally lightened by yellowish. Two local races: **aedon** *Hew.* (115 a) is based upon an *aedon*. abnormally coloured ♂ which we copied according to *HEWITSON*'s figure. The ground-colour of the under surface is greenish instead of light brown, and the black eye-spots do not exhibit a white pupil as in the ♂♂ of my collection. The latter mark is presumably quite individual, whereas the greenish colouring indicates a local or temporal form which rarely comes to Europe. *STAUDINGER*, moreover, seems to have had before him specimens of both the different colourings, because he mentions that the under surface may be dark green or bluish-grey. The ♀ uncommonly approximates the ♀ of *A. amydon* (113 d), but the yellow preapical band is absent altogether, and the red median spot expands beyond the cell in Chiriqui-specimens. There are but few specimens known, that of the Coll. *GODMAN* having been shot down with a gun, since it always remained at a height not approachable with the net. Colombia and the Volcano Chiriqui where the species occurs yet at a rather considerable elevation. — **salvini** *Fruhst.* (113 c) is a light, local form of *A. aedon* *Hew.*, differing *salvini*. in the ♂ on the upper surface by the bright red discal band resembling the ♂ of *claudina* and on the hindwings by the larger blue discal spot. Forewing beneath grey as in *aedon*, but with obsolete subapical bands and nearly disappearing dots in the cell. Hindwing with very small white-pupilled submarginal ocelli, without any submarginal band, and red-brown discal bands and spots. ♀: larger than the ♂, with lighter, yellowish-red discal spots which are of a much narrower shape than those of *aedon* owing to the extensive black ground-colour of the forewings, being especially conspicuous at the inner margin which is bordered by a much broader black. Hindwings like those of the ♂, but more roundish and with intense red-brown discal bands and dots in the cell which are blackish in the ♀ of *aedon* lying before me from the Chiriqui. Legs, palps and thorax whitish-grey, much lighter than in *aedon*. Description according to a couple from Manauré in Colombia. Collection *GODMAN*.

A. amydon, a species distributed from Colombia to Surinam and the whole Amazon district as well as Central Brazil and advanced along the Andes as far as Bolivia, of the utmost individual modifiability

and inclined to give way to every geographical and climatic influence. In *amydon*, at least in the Colombian specimens, we have to register the interesting fact that the red area of the forewings may proceed from the base of the wing as in *Agrias claudia* and *A. sardanapalus*; but that it is also proximally displaced by the black ground-colour, so that instead of a convergent area, there remains only yet a band-like brightening reaching from the costa to the inner margin. The median area of the forewings intermits from yellow to red, but we hitherto know yellow-banded ♂♂ only from Colombia and Bolivia. The under surface is of plainer markings than in *A. claudia* and *A. sardanapalus*; it is on the hindwings, also in the specimens being above red, yellow with black rosettes, without a variegated filling between the black bands. The ocelli are black with blue-white pupils, in one form (*trajanus*) almost white. Of a very constant extent is the black antemarginal band of the hindwings, the distal margin itself is yellowish, with the exception of *ferdinandi* where it appears preponderantly whitish. Less constant is the preapical band of the under surface of the forewings. It appears very narrow in some Colombian forms, uncommonly broad in *boliviensis*, and remains yellow in all the Andine specimens, white in those from Central Brazil. The upper surface of the hindwings is subject to by far the greatest influences, numbers of specimens exhibiting a sparkling blue sardanapaloid disk and others showing an insignificant blue spot being distally and anally displaced; then there are specimens without any discal spotting, with a unicolorous cover of the hindwings and, finally, such with greenish or yellowish small adnerval stripes of the submarginal zone.

There are no exact statements about the habits. FASSL has seen them circling round the tops of high trees, and even when they approach the bait on the ground, they come down from above in a wide spiral, flying for a minute round the bait, whereat only a red line is recognizable owing to their nimbleness. The ♀♀ seem to prefer resting on the ground, at least my traveller MICHAELIS has surprised a ♀ in Surinam drinking from a puddle.

- amydon*. **amydon** Hew. is a form resembling our figure 115 d, but differing from it by the absence of the whitish spots of the forewings and a considerably larger and lighter blue disk of the hindwings; the chain of ocelli on the under surface of the hindwings appears also coherent, not dissolved into single components as depicted in our figure. There exist specimens with a red area, running through from the base as far as close to the inner margin of the forewings, exhibiting generally somewhat less blue on the hindwings than in the name-type
- muzoënsis*. presented by HEWITSON. Such ♂♂ were denominated **muzoënsis** Fruhst. Specimens with a narrow oblique band from the costal to the inner margin of the forewings, which may be pale reddish-yellow or almost orange-yellow were separated as **frontina** Fruhst. *frontina* stands between *amydon* Hew. and *zenodorus* Hew. Upper surface like in *zenodorus*, but the apical spot somewhat more obsolete and the discal band orange, sometimes chrome-yellow, but never carmine as in *amydon* nor bright yellow as in *zenodorus*. This discal area is exactly as in *zenodorus*, but narrower than in *amydon*. The discal spot of the hindwings somewhat smaller than in *zenodorus*, but considerably larger than in *amydon*. The under surface of the wings completely agrees with *amydon*, except the lighter colour of the disk of the forewing. Described according to 5 specimens in GODMAN's collection and 1 ♂ of my collection. This subspecies of *amydon* was collected by SALMON near Frontino in Colombia. HEWITSON's collection likewise contained 1 specimen which was arranged together with an *Agrias ferdinandi* and two *amydon*, labelled „*amydon*“. Of late some more ♂♂ were discovered nearly without a blue disk of the hindwings, inhabiting preferably the eastern slope of the East Cordilleras of Colombia, whereas on the Upper Rio Negro at an altitude of about 800 m above the sea-level likewise at the eastern slope of the East
- larseni*. Cordilleras, ♂♂ have been observed without any marks of a blue spotting and denominated **larseni** Fassl. The ♀ of *amydon* remained extremely rare and was only recently discovered by FASSL. It is half as large again as a normal ♂, of a more compact shape and more rounded forewings as well as hindwings. The ground-colour is not so intensely black, but more a dark greyish brown. The red are of the forewings is duller and without the sparkling lustre. The three small subapical spots being obsolete in the ♂ are almost as large again and distinctly yellowish white, but separated by the veins, on the under surface, however, not broader than in the ♂ and likewise forming a band. Upper surface of hindwings entirely dark greyish-brown, without a trace of blue or red. Scent-tuft absent as in all the *Agrias*-♀♀. Anal angle very obtuse, nearly rounded off. Under surface almost just as glaring as that of the ♂; the marking hardly different, only the black ocellated band broader and more coherent, the white-blue ocelli being of the same size and not differently shaped as in the ♂. FASSL found the ♀ of *amydon* in the company of *Anaea panariste*-♀, *pasibule*-♀, *Coenophlebia archidona*-♀, *Prepona neoterpe*-♀ and the dimorphous ♀ of the red *P. præneste*, and the unproportionately large ♀♀ of *Agrias aedon* and *A. amydon* were considered the most precious booty from those wild primeval forest valleys into which the discoverer had several times retired as if forced by magic power, in spite of the violent fevers he had undergone there, and notwithstanding the numerous poisonous snakes and the worst victualling to be thought
- bogotana*. of. — As **bogotana** Fruhst. there is a specimen in the British Museum approximating *A. ferdinandi* (115 c). It is, above all, larger than *ferdinandi*, has less dentated hindwings, a lighter red discal band of the forewings and a lighter under surface. Furthermore, the bands on the hindwings are considerably broader than in *ferdinandi*, so that the yellow ground-colour is compressed to narrow bands, and the blue eyespot-pupils of the
- amydonius*. black submarginal band are somewhat larger than in Brazilian specimens. — **amydonius** Stgr. (115 d) was based upon a ♂ from Pebas on the Upper Amazon. The magnificent purple-red of the forewings, small carmine basal spots and three anteterminal yellow streaks of the hindwings distinguish this local race: We have figured the

under surface 114 b, but the red is paler and there is yet a conspicuous, prominent subapical yellow band. — As **tryphon** *subsp. nov.* two ♂♂ are introduced which are in STAUDINGER's collection; the one from São Paulo, *tryphon*, the other from the discharge of the Ucayali. Both specimens lack the small yellowish streaks before the distal margin of the hindwings. The ♂ from the Ucayali shows at any rate no trace of blue, whereas the Olivença-♂ exhibits a rather large blue spot parted black by the veins, being about of the size as in the ♂ figured by HEWITSON. In both, moreover, the red of the forewings appears more extensive, extending down as far as to the submedian, while in *amydonius* it is cut out in the shape of a segment. — **trajanus** *Fruhst.* denotes a *trajanus*, a very much differentiated territorial form of the Lower Amazon. Habitus smaller than that of all the vicarious types lying before me, above conspicuous by a pale, nearly yellow-red basal area and a prominent subapical yellow macular series of the forewings. The hindwings are overpowdered by dark red as far as to the middle of the cell, the subanal streaks are short, broadly confluent and of a bluish-grey colour. The forewings are beneath almost orange-yellow, with a very broad light sulphur-yellow preapical band. The hindwings exhibit a very broad black submarginal band with white instead of blue ocelli. The proximal band reduced to a thin yellow line. ♀ larger than the ♂, the wing-contour more roundish; the purple spot of the forewings less deeply strangulated, and the paler yellow apical spots flown together to a rather broad band. Base of the hindwings more extensively blackish, dusted with orange. The 5 subanal maculae somewhat more obsolete than in the ♂. The under surface of the hindwings is especially distinguished by a dark orange-red discal band which is hardly indicated in the ♂ and absent altogether in *amydonius*. The type of *amydonius* *Stgr.* of which only one ♂ was known till 1897, originates from Pebas situate on the Upper Amazon at 72 degrees Longitude. 1 ♂ and 1 ♀ of *trajanus* were captured by JULIUS MICHAELIS near Obidos on the Lower Amazon at 56 degrees, in August and September 1899. A second ♂ from Obidos was taken in July 1900. Type in the Coll. FRUHSTORFER. — **aurantiaca** *Fruhst.* (114 b ♀) resembles *trajanus* by a rather narrower bluish-grey dusting of the subanal zone of the hindwings. Upper surface of the forewings with a large, orange-yellow basal part, a broad black apex and a black distal margin being narrowed between the second median vein and the submedian, growing somewhat broader at the distal angle above the submedian and running along towards the inner margin. In the apical part 3 oblique large yellowish spots. Hindwing above deep velvety black with a straw-coloured costal margin, dark orange dusted base and 2 pair of bluish-green short streaks embedded divergently between the first and second median veins. The ciliae of all the wings are yellow. Under surface of the forewings like above, the orange, however, is somewhat lighter and the black apical space is traversed, beginning somewhat below the costal margin, by a segmentary broad yellow band. The subcostal veins are likewise slightly covered with yellowish. The black at the anal angle is less broad than above and consists of thinly strewn scales. At the median vein near the base of the wing there is a black, short and thick stripe. The basal area of the hindwings is filled up with 3 black and 4 yellow bands the two outer ones of which are strongly bent, generally rather equalling those of *zenodorus*. Antennae black with a yellowish tip. Head black with yellow palps; the red-brown eyes stick in a whitish collar. Thorax black, above brown-orange, beneath whitish haired. Abdomen anteriorly and above brown with a black point, beneath on all the segments covered with white scales being divided into white areas by a black longitudinal line and the black ringlets round the segments. Legs above black, beneath yellow. By the brown colouring of the thorax and abdomen, *aurantiaca* greatly contrasts with *zenodorus* *Hew.* and the local form *boliviensis* *Fruhst.*, in which these parts of the body are provided with jet-black scales. The under surface of the hindwings is rather analogous to that of *zenodorus*, but darker than in *boliviensis*. Length of forewings of my ♀ 42 mm. *aurantiaca* was surprised at a defiled puddle from which the magnificent being was eagerly drinking, which habit is also preferably indulged in by its allies, the Indian *Charaxes* which are by no means inferior to them. As an almost true copy of *aurantiaca*, *Catagramma sinamara* *Hew.* (♀*) appears, which was captured beside the *Agrias* of the same colours, Surinam. — **zeno-** *zenodorus*, *dorus* *Hew.*, having hitherto been known only in some specimens from Ecuador, was founded upon a ♀ form forming the transition from *A. amydon* from Colombia to *A. amydon boliviensis*. The forewings exhibit a light orange oblique band sending forth only a narrow spur along the costal towards the base. This area, however, is somewhat larger than in *boliviensis*. The *morpho*-blue disk of the hindwings fills up the whole distal part of the latter and is surpassed in extent only by *A. sardanapalus*. But HEWITSON already knew a ♀ in which the disk already exhibits a reduced blue, and also in the Coll. HONRATH there was a specimen in which the magnificent spot did not surpass the extent of the disk of the wings of *A. amydon*. The ♂ of *zenodorus* seems to have been recently discovered in Ecuador, according to a photograph before me from Mr. HEIL in Frankfurt on the Main. It resembles above entirely the ♂ of *amydonius* (115 d), but the hindwings bear only two adnerval strigae and above them at the posterior median yet a darkened accumulation of scales about the colour of which nothing was communicated to me. The under surface of this ♂ is the most closely allied to that of our *amydon*-♂ (115 d). — In some parts of Ecuador another, remarkably modified areal or temporal form is found, deviating from *A. zenodorus* and approximating rather the Colombian *amydon*-type. This is **eleonora** *Fruhst.* *eleonora*, (115 e). The ♀ type originates from Ecuador, a ♂ of it from Bolivia. The upper surface of the ♂ resembles that of *amydon muzoënsis* *Fruhst.* and *boliviensis* fa. *amydonides* *Fruhst.* The subanal blue spot of the hind-

*) Cf. Figure *codamanus*, table 101 B e, f.

wings attains but a moderate extent. The ♀ resembles certain ♂♂ of *A. amydon* to such an extent that I found it arranged among such in the Coll. GODMAN. The ♀ stands between *zenodorus* Hew. and *frontina* Fruhst., and it resembles *frontina* in the colour and the course of the discal band of the forewings, though it has pale yellow spots before the apex, like *zenodorus*. The under surface of the forewings is lighter than that of *amydon* with a broader yellow apical band. In the basal area we distinctly notice a yellow tinge near the distal margin, being absent in *amydon*. Entirely different from *amydon*, however, is the under surface of the hindwings which show the greatest likeness with *A. boliviensis* Fruhst. described above. The bands in the cell are greatly reduced, so that the yellow ground-colour is everywhere predominant, and the blue-pupilled submarginal spots, being fused into a broad band in *amydon*, stand dissolved forming a macular band interrupted by yellow. — *ozora* *subsp. nov.* is the race from Peru presented by us as *amydon* (115 d). The forewings somewhat resemble those of *amydonius* Stgr. (115 d), but the red basal area of the forewings is reduced. The subapical spots at the apex of the forewing are in nature not so prominent as in the figure. The hindwings bear a discal, not subanal spot as in *eleonora* and *boliviensis*. The under surface forms a transition from that of *A. amydonius* to *A. boliviensis*. The forewings are more richly striped in yellow than in the ♂♂ of *amydonius*, and on the hindwings the eyespot-bands are more broadly spread and their components confluent in nature, not isolated as in our figure. The name-type originates from Charapajos (Peru) and was collected in 1889 by DE MATHAN for CH. OBERTHÜR. Similar specimens are in the Coll. STAUDINGER from Yurimaguas (Peru), besides also the fa. *larseni* Fassl as a rare aberration, and furthermore specimens approximating the ♀ of *zenodorus* by a remarkably large magnificent spot of the upper surface of the hindwings. They belong to the fa. *athenais* Fruhst. — In Bolivia the collective species is represented by a considerably modified territorial form, *boliviensis* Fruhst. (114 b). It agrees with *eleonora* by the anally dislocated discal spot of the hindwings, which characteristic mark may be more noteworthy than it was considered hitherto. If by the discovery of the early stages or by morphological proofs the forms with subanal blue should be entitled to be considered as a proper species, they would have to be placed by the type of *A. eleonora*, the modified under surface of which and its occurrence from Ecuador to Bolivia sets one thinking. According to FASSL, *amydon* occurs in Bolivia especially in the yellow form of *boliviensis* Fruhst. The ♂♂ vary in the shape of the yellow spot of the forewings, but also the blue anal spot of the hindwing grows very dark violet and reduced in some specimens, and FASSL does not doubt that we may also capture *A. boliviensis* with quite black hindwings, analogous to those of *amydon* of which FASSL found his form in East Colombia without any blue at all, describing it as fa. *larseni*. The under surface of *boliviensis* is likewise rather variable, especially the black band enclosing the row of eyespots may be increased or reduced. Another interesting fact is that nearly all the *boliviensis* taken by FASSL on the Rio Songo before the rainy period (in October until December 1912) belonged to a small pygmean or famished form, probably created by the extremely dry winter in Bolivia (the dry period is May to September) of the year 1912. A ♂ of this collection is not larger than a respectable *Catagramma aegina* from the same habitat, and the sole ♀ figured 114 b (first figure) is by more than a third smaller than the two other ♀♀ captured after the rainy period. All the three correspond with the sole ♀ of *boliviensis* known already before, in the resemblance with the ♂♂, thus being also decorated with large blue anal spots of the hindwings, being therefore quite contrary to those of genuine *amydon*-♀♀ all of which exhibit not a trace of blue. — *amydonides* Fruhst. (= *songoënsis* Fruhst. being regarded but as a rare red aberration of *boliviensis*, lay before FASSL only in 5 specimens so far; it is very rare among the yellow forms and pretty well distinguishable from the *amydon*-forms of other localities by the red band being peculiar on the under surface, since its colour is exactly the intermediary between the red of genuine *amydon* and the yellow of *boliviensis*. Perhaps we may succeed yet in capturing also the ♀ of it whereby its alliance with *A. boliviensis* could be better cleared up. In judging especially the forms with a reduced blue, the position of this magnificent spot of the hindwings ought to be above all decisive for the assignment of the animal, for by this blue discal or anal spot of the hindwing certain forms are much more sharply separated from each other than by the most variable bands of the forewings or the extremely detailed helical markings of the under surface, by which for instance some butterflies being very different above (such as *amydon*, *amydonius* and *ferdinandi*), are not at all to be separated from each other on the under surface. „Who-soever, like myself, had the chance to capture personally, for instance, *Agrias amydon* in greater numbers and at different places, will have to own that the reduced blue in the poorly-coloured varieties (*muzoënsis* and transitions to *larseni*), which finally consists only yet of a narrow longitudinal streak in the anal angle and parallel to the anal margin, presupposes an entirely different development of the distribution of colours, as the blue spot of *Agrias lugens* receding always entirely centrally (discally), however much some *sardanapalus*-specimens may make the impression that the blue is chiefly distributed towards the anal.“ (FASSL). — *ferdinandi* Fruhst. (115 c) deviates from all the noted *amydon*-races by the absence of every discal spotting of the upper surface of the hindwings, and is very near to being considered a proper species. Beneath it is characterized by the black marking in the cell of the hindwings not forming a fork but a more plain, peculiar figure comparable to the swollen ring of an earth-worm. The row of eye-spots consists of a rather loose joining. The ground-colour of all the wings is deep velvety black. ♂-upper surface: base of the forewings with a broad, intensely carmine

spot extending somewhat beyond the cell and gradually narrowing towards the distal margin without reaching it and leaving a black space free at the anal angle. Before the apex there are 3 large oblong, straw-coloured, very distinct spots. Between these and the basal spot a delicate, dark blue reflection is noticeable, being seen in some specimens also on the hindwings, beyond the scent-organs. Hindwing at the costal margin bordered by pale yellow with fringes of the same colour. Under surface: On the forewings, the red commences only in the cell and leaves a broad black stripe free at the posterior margin. Before the apex a broad, whitish-yellow band beginning at the costal and extending in the shape of an arc towards the distal margin as far as close to the first median. Before the rise of the third subcostal vein a narrow, small, yellow spot and two yellow streaks in the middle of the upper and lower radials. The under surface of the hindwings resembles that of *amydon* Hew., from which it is, however, easily distinguishable by the much lighter and broader yellow bands. The blue-pupilled eye-spots are isolated — especially the upper ones — where they are flown together to a very broad band just in *amydon*; the eyespot-pupils of *ferdinandi* are also considerably larger than those of *amydon*. The ♀ is larger than the ♂, with more roundish wings, larger yellow subapical spots and without a trace of blue reflection on the hindwings. But on the latter, at the base and in the cell, a slight red dusting is noticeable whereby a connection with *A. claudia* Schulz is established, with which species *ferdinandi* agrees also by the shape and the appearance of the row of eye-spots on the under surface. An especially fresh und faultless ♂ is distinguished from the others by a deep dark-brown band encircling decoratively the red basal spot beyond the cell, and resembles thereby the ♂ of *A. claudia* (*sardanapalus olim*), of which specimens are before me in which the blue subapical band traverses almost the whole wing, while it is in some reduced to a small spot. Head black with 4 white hair-tufts between the eyes. The brown eyes stick in a white hairy ruffle. Palps outside yellow, inside black, body and abdomen black, in both sexes beneath white, ♂ above black, ♀, however, partly with red hair. Feet black, beneath with yellow hair. Antennae black with a reddish-brown tip. Expansion of the ♂♂ 59—69, of the ♀♀ 80 mm, judged by 6 specimens discovered by Mr. HAENSCH in the Province of Bahia across which he travelled on my advice. *A. ferdinandi* flew there in woods of high trees where the butterflies rarely left their airy domicile under the leaves on top of the high trees, in order to bustle about in the „picades“ as the Brazilians call their roads through the forests. They flew so vehemently past our observer that their presence was just for one moment disclosed like a flash, only by the red glimmer of their wings. And even when they were greedily drinking from an Aphrodisian bait, the least noise of a foot stepping forward carefully scared away the nimble animals. Except from Bahia, *ferdinandi* has come also from Minas Geraes where Mr. HAENSCH found one ♀, and recently from Mato Grosso where *ferdinandi* flies beside *A. godmani*. In the British Museum there are specimens denoted „Colombia“, presumably a wrong habitat.

A. pericles forms a magnificent transition from *A. amydon* to the group of *A. hewitsonius* (114 c) and *A. phalcidon* (114 d). The upper surface of *pericles* resembles yet certain races of *amydon*, but we already notice a further decorative mark, consisting of green festoons of the upper surface, while on the under surface the light yellow or greenish yellow filling or foundation of the hindwings disappears in order to be replaced by a lighter or darker green according to the geographical situation of the habitat. We know three territorial forms: *pericles* Hew. resembling above our figure of *pericles xanthippus* (114 c as *pericles*), but the forewings *pericles* are, distally from the orange basal area, at first decorated with a *sardanapalus*-blue band and then with an emerald-green band. On the hindwings the blue advances further into the cell and the subanal green ornamentation is somewhat more pronounced. Very rare, discovered by BATES near Teffé (formerly called Ega), where Dr. HAHNEL did not find it anymore because the primeval forest had been in the meantime destroyed afar from the place. HAHNEL, however, found some time later on, near Itaituba on the Rio Tapajos, a local race *xanthippus* Stgr. (114 c as *pericles*) differing from the proper *pericles* by the lighter orange, magnificent *xanthippus* area of the forewings which is distally hardly bordered by blue and green. The ♀ of *xanthippus* is a little larger than the ♂♂, with more rounded forewings, a more extensive yellow basal area and without any trace of a blue decoration on the forewing. The hindwings are towards the base powdered with brownish as far as to the apex of the cell. O. MICHAEL writes about the discovery of *A. xanthippus* (Iris 1894 p. 202):

„One day I saw a butterfly unknown to me, apparently of a yellowish-brownish colour darting along in a swift, elegantly floating flight; but where the free space grew narrower, it suddenly returned and flew back again; after having flown to and fro 4 or 5 times it finally settled on a leaf far from me, in order to start flying once more after a longer rest. Now I struck out desperately at it with my large Morpho-net and, to my great joy, I saw it jerking about in it. But alas! The silk net was so firmly entangled in the acanaceous twigs of a finely pinnated acacia-tree that it was entirely impossible to get loose. Without hesitation I let go the net and climbed up the slender stem; the little tree shook perilously to and fro under my weight, but I recklessly climbed up to that part from where I could disentangle the net. But I first killed the butterfly which was darting furiously about in the net, in which, however, I succeeded only after great efforts, since I was forced to hold fast with one hand in order not to fall down. Finally, after having arrived at the bottom again with my lucky prey, I was somewhat disappointed on examining it, for I had in my hands a damaged, rather unicolorous butterfly; the finely marked under surface seemed to suggest an interesting capture, but I as yet did not attach so much importance to it as to the magnificent *Morpho Menelaus* of a light blue gloss, which I most eagerly tried to capture. But on delivering the butterfly at noon, I was surprised to see Dr. HAHNEL who was otherwise very quiet, being wild with excitement.

„Here you have, in my opinion, taken quite a new animal!“ he finally said after having examined the specimen from all sides. It indeed turned out later on to be a variety hitherto unknown of the magnificent *Pericles xanthippus* Stgr.

The fiery red of *Pericles* is replaced by a pale bronze yellowish brown and the magnificent blue of it simply indicated by faint marks."

mapiri. **mapiri** *Fassl* originates from the Rio Mapiri, where the Yungas forest-valleys extend already into the lowlands of East Bolivia. The animal having an expanse of 65 mm is of the size and shape of an *A. amydonius*-♂ and has also similarly coloured forewings with glaring-red (not blue-tinged), strongly indented red arcs reaching as far as to the base, and a very conspicuous yellowish-white subapical band being parted by 2 veins and much broader and more conspicuous than in all the red forms of *Agrias* lying before me. The blackish-grey hindwings exhibit red dusting at the base of the discocellular; besides there extends from the anal angle a dark blue, oblong spot being sharply defined towards the distal margin of about 1½ mm width and turning here into greenish, thus looking like the remains of the hindwing of *Agrias*. This blue spot is not identical with the anal spot of the *amydon*-forms, but owing to its more submarginal extension, it makes the impression as if the colour of an originally quite blue hindwing had been reduced to this small extent. The under surface exhibits in the otherwise entirely undimmed red arc a black stripe at the lower part of the median. The marking of the under surface of the hindwing is much more concentric than in *amydon*, and the light zone bordering first of all on the ocelli turns somewhat into red-brown in an upward direction. I do not dare to decide to which forms this new animal is to be assigned though I presume that it might be an extremely southern offshoot of *Agrias pericles*.

phalcidon. **A. phalcidon** *Hew.* (114 d) occurs exclusively in the district of the Lower Amazon. Geographical races are not known for certain, but only two, presumably individual forms. *A. phalcidon* is, according to HAHNEL, somewhat larger than *Callithea lepreuri* (99 d) which it resembles on the whole, and like that blue with a pale, silvery grey margin, the under surface, however, with a strong banded marking and a row of blue and white pupilled eye-spots. According to MICHAEL, the deep cyanean is of the most magnificent effect in the midst of the tropical vegetation.

"When the sun has risen half the way to the zenith, *A. phalcidon* begins its flight about at the same time with *Morpho cisseis*, a little earlier than *Prepona*. The height at which they use to stay being very considerable, varying between 5 and 10 metres, the scent of the bait we occasionally applied did not penetrate to them, and we got all of the few *phalcidon* we caught sight of, down from the tips of their leaves, whereas in the same road, the *Prepona* repeating their flight much oftener and occasionally coming further down to the ground, scent the bait much easier and are then easily captured on it."

The ♀ has somewhat less blue colouring, in one specimen of the Coll. STAUDINGER it is absent. Both the ♀ forms, however, exhibit on all wings more extensive, verdigris bands before the distal margin. — In Villa *paulus*, Bella (the Paritins of to-day) a ♀ form was found (**paulus** *Stgr.*) with quite blue, not black-interrupted forewings. The verdigris bands of the hindwings are absent. — *anaxagoras* *Stgr.* is an aberration with yellow basal third of the forewings and almost entirely blackened hindwings, captured near Itaituba.

narcissus. **A. narcissus** *Stgr.* (115 c, d) is considered by its author to be the most beautiful *Agrias*, „a capital feast to the eyes“, as I described it in 1897. STAUDINGER knew only one ♀ from Surinam which he came across in SOMMER's collection. Later on Mr. SAHLKE who collected for HONRATH in Cayenne discovered two couples at the beginning of November and at the end of December 1884 and at the end of April 1885. My traveller JULIUS MICHAELIS succeeded in finding a ♂ near Obidos on the Lower Amazon, of which we represent the under surface. The ♂ is a *sardanapalus* with reverse colours, because there prevails a wonderful, intense cyanean blue across which a relatively narrow red band is laid on the forewings. Hindwings nearly quite blue with a relatively narrow, jet-black very sharply delimited distal margin. The scent-pencil is smaller, but just as beautiful and of a pure yellow as in *A. sardanapalus*. On the dark moss-green under surface of the hindwings are two conspicuous orange spots at the basal margin.

A. hewitsonius has brought us so far the greatest coloristic surprises of which the *Agrias* are capable. Nature has squandered the most magnificent shades of blue, green, yellow and red upon this collective species *hewitsonius*, occupying the Upper Amazon from where it has advanced to Ecuador and South Peru. **hewitsonius** *Bates* (114 c), the nomenclatural type, was discovered by its author near Teffé (the former Ega). It has remained extremely rare and is at once recognizable by the chrome-yellow basal part of the upper and under surfaces *olivencia*, of both wings. — It is geographically approximated by **olivencia** *Stgr.* from São Paulo de Olivença, situated somewhat higher than Teffé on the Amazon. There are hitherto known only three ♂♂, without a yellow base *stuarti*, and an entirely blue surface of the forewings. — **stuarti** *Godm.* from Pebas and Iquitos forms the transition to *beatifica* (114 d). The green zone of the forewings, however, is very narrow. The basal half of the under surface of the hindwings is undeterminedly reddish or orange. On the under surface of the hindwings there are some black spots dispersed in the yellow part, which vary in size. Sometimes they are absent or there are 2 or 3 being distally bordered by greenish and not standing entirely in red or yellow. The ♀ of *stuarti* has above a black basal half of all the wings followed at first by a broad green band and, before the distal margin, by a narrower grey band. Beneath, the base of the wing is orange, the eye-spots are white-pupilled. *beatifica*, There is a striking resemblance with *Callithea buckleyi* (99 e) and *degandei* (99 f). — **beatifica** *Hew.* (114 c, d) is a very rare form from Ecuador with a very broad verdigris terminal band of the upper surface of both

wings. The blue basal area of the forewings is slightly intermixed with black. The under surface is brick-red and in the green distal area there stand three series of entirely black spots. — Near Yurimaguas and Rio Hualaga, O. MICHAELIS has discovered another race, **pherenice** *subsp. nov.*, with less extensive orange colouring *pherenice*. in the basal part of the under surface of the hindwings. The black spots of the green distal zone are more pronounced than in *beatifica* and *olivencia*, and MICHAELIS believes that higher up in the mountains we may find yet specimens forming a transition to *beata*. Mr. MICHAELIS wrote me about the habits, from Iquitos in 1910:

On the 28th of September 1901, I found more than 30 *Prepona* sitting together near Inanjudi, on the Upper Hualaga. The day being very hot, the woods dry and nowhere a refreshment for thirsty butterflies, I found, at an especially malodorous spot the said number of *Prepona* and in the midst of them in the greatest scuffle there sat an *Agrias*, allied to *A. beatifica* resp. *beata*. The *Prepona* were so madly eager after their meal that I could quite carelessly pick out with my fingers first the *Agrias*, then only I chose the best *Prepona*.

beata *Stgr.* (114 d) forms the southernmost known geographical extreme of the whole species and is certainly *beata*. but a territorial form, although its author stood the most energetically for its specific rights. *beata* originates from the Chanchamayo in Peru and seems to be very rare, since but few specimens are known. On the upper surface the darkening of the blue area and of the green marginal band is very far advanced, and beneath the basal area is only yet covered with narrow red stripes. The scent-pencil is somewhat darker yellow than in *A. narcissus*. In the Coll. FRUHSTORFER there is a ♂ without certain habitat according to which the figure was depicted.

59. Genus: **Coenophlebia** *Fldr.*

In spite of the great difference in the exterior, this genus is nearly allied to the palaearctic genus of *Charaxes*, being the most nearly allied to the following *Polygrapha*, which is likewise formed by but one species. The outward appearance is, as the figure shows, so peculiar that it is impossibly confounded.

C. archidona *Hew.* (116 a), the only species, has hitherto been found in Colombia and Peru, but it *archidona*. presumably occurs also in Ecuador and is very rare. The ♀ discovered by Mr. A. H. FASSL in East Colombia (in March at an altitude of 800 m) is somewhat larger than the ♂, above and beneath of paler colours and markings, and with a somewhat broader, light yellowish-brown costal-marginal border of the hindwings; all the dark markings are likewise somewhat lighter dark-brown, and the under surface with the silvery dots of a still more striking resemblance with a faded, bedewed leaf. — **magnifica** *Fruhst.* from Bolivia is considerably *magnifica*. larger and beneath with more pronounced and darkened markings.

60. Genus: **Polygrapha** *Schatz.*

As mentioned above, this genus is likewise nearly allied to *Charaxes* which is also expressed already by the outward appearance. But the shape of the palps exhibits again an alliance with *Anaea*, whereby its affinity with *Charaxes* is manifested again. *P. cyanea* was also at first taken to be a species of *Anaea*. The difference in the structure of the veins, compared with that of the genus of *Charaxes*, is but very insignificant, so that *Polygrapha*, if its habitat were in the Old World, would probably not be separated from *Charaxes*. The early stages are still unknown.

P. cyanea *S. and G.* (116 a), the only species of this genus, has hitherto been found in Ecuador and *cyanea*. Peru, and is still considered a great rarity. The magnificent blue, silk-glossy reflection on the upper surface can scarcely be depicted in the proper way. Very contrary to the upper surface is the plain, striated under surface which is to be considered as a protective attire. The ♀ is still unknown to us, and probably not known at all.

61. Genus: **Siderone** *Hbn.*

This genus, to which but few species belong, is likewise characterized already by its outward appearance which is better distinguished by the figures than by words; it is impossible to confound it with other genera. The genus is distributed from Mexico to South Brazil and occurs also in the Antilles. The larva of *nemesis* has a shape similar to that of the *Prepona*-larvae, the pupa being hardly different from that of *Anaea* *).

S. marthesia *Cr.* from Surinam and the Lower Amazon, is presumably the yellowish-brown form *marthesia*. of **confluens** *Stgr.* (116 a), likewise from the Amazon. — **nemesis** *Ill.* (= *ide* *Hbn.*) (116 b) is widely spread, for *confluens*. *nemesis*.

*) Claspings-organs of an extremely primitive, clumsy and ugly shape, tegumen as if inflated, uncus bent like a finger, short. Valve basally very broad, somewhat tapering anteriorly. The distal margin running like in *Zaretas*, concave in the middle, valve long, with bristly hair, besides densely set at the end with bacilliform scales being indented at the tips, oedeagus broader than in any of the *Nymphalidae* examined so far, skinny. The segments of the coarse abdomen narrow, skinny at their joints, their upper surface covered with leaf-like scaly plates, being deeply indented at the top. The differences of the valve between *Siderone ide* from Brazil and *Siderone mars* from Peru are so insignificant that a specific connexion of the two forms is possible. (H. FRUHSTORFER.)

it occurs in the Antilles and in the whole district of Colombia and Venezuela as far as South Brazil. The scarlet oblique band of its forewings is broadly united with their red basal part at the cell-end. — The larva, according to W. MUELLER, lives in South Brazil on *Casearia silvestris*, has at each side of the head a short, slightly outwardly bent horn, being split at the top into three short dents; at the 5th ventral segment the dorsum is the highest, slanting obliquely and inclining gradually towards the rear, so that, at the beginning of the 5th ventral segment, the frontal line of the dorsum appears sharply broken. The head is in the last stage uniformly blackish-brown, as well as the ground-colour of the body, the whole part before the 5th ventral segment is of a velvety black. From the dorsal point on the 5th ventral ring, a dark line runs posteriorly, turning into a shadow beneath, the first 4 ventral rings have a light lateral line. In the first four stages the larva attaches pieces of leaves to the stripped rib of the leaf. The pupa is very compact and the segments 7 to 12 are so much drawn in that they form a flat cone; it is green, diaphanous, the posterior part as well as the wing-case above the carina coloured with green, the carina of the wings and stigmata are brown. The pupa hardly moves, the eggs are almost spherical like a ball of which two differently large segments have been cut off; thus two plains are formed, the smaller one of which serves for the affixture; the larger one is finely dentate at its edge.

thebais. **S. thebais** Fldr. (116 b) flies in Colombia, together with *nemesis*. It is not yet decided whether it is a proper species or an aberrative form of *nemesis*. The forewings resemble those of *nemesis*, but the hindwings have an irregular, vertical band, whereas the preceding species exhibits only a small, preapical square spot. — *galanthis*. **galanthis** Cr. occurring according to CRAMER in Surinam, according to KIRBY also in Colombia (?) and being apparently an entirely lost species, has, according to CRAMER's figure, entirely rounded hindwings, but quite a similar marking of the upper surface as *thebais*, whereas the marking beneath differs from all the *Siderone*-species, because it fully corresponds with the upper surface and exhibits only duller colours. It is, therefore, very doubtful whether *galanthis* belongs into this genus at all.

maris. **S. mars** Bates (116 b) from Chiriqui, Colombia, the Upper Amazon, and Peru is undoubtedly a species different from *nemesis* and *thebais*. Here the forewings exhibit a large transverse, scarlet crescentiform spot, similarly as we find the distribution of the red in different *Agrius*. — *polymela* G. and S. from the Chiriqui has a faint, blue reflection of the black-coloured part of the forewings with the exception of the apex of the wings, and of the distal margin, whereas *syntyche* Hew. from Mexico and Guatemala has a reduced red area of the forewings and a broad area of a gorgeous blue reflection round the red basal part. — In *vulcanus* Fldr. from Colombia, the red crescentiform band is narrowed by the base of the area between the first and second median veins, and a narrow stripe at the base of the wing along the median in the discocellular remaining black.

62. Genus: *Zaretes* Hbn.

Up to some decades ago, this genus had been united with *Siderone* from which it does not differ in the structure of the organs, but very considerably by the habitus and the sexual dimorphism as well as by the entirely corresponding scheme of markings. Egg, larva and pupa are of a shape quite similar to those of *Siderone nemesis*, the food-plant is also the same (*Casearia silvestris*). A. SEITZ says about the habits of the butterflies of *Z. isidora* that they make use of their leaf-like under surface and rest, like the *Kallima*, on bushes with dry leaves, placing the tail-like appendages of the hindwings on the stalk of the leaf, so that they appear themselves as a dry leaf. The development from an egg to the imago lasts for about 9 to 10 weeks, according to W. MUELLER. — The genus contains only 2 species one of which varies extraordinarily.

syene. **Z. syene** Hew. (116 c) is known only from Colombia; the ♀ seems not yet to be known. The ♂ is above yellowish-brown, with dark markings, in the centre of the forewings mostly two small hyaline spots of varying size.

isidora. **Z. isidora** Cr. (116 c) from Surinam, Colombia, but occurring also still much more to the south, has in the male sex no hyaline spots of the forewings, in the female sex two of them. Whereas *syene* has a darkened marginal half of the hindwings, *isidora* exhibits a broad black distal margin of the forewings. — *russeus*. **russeus** Fruhst. lying before us from Colombia, has a somewhat less black marking of the upper surface and a small hyaline spot between the first and second median veins. — *zethus*. **zethus** Westw. (= *strigosus* Gmel.?) from the Lower Amazon and Paraguay, is in the male sex very similar to *cyclopiu*, but it has 2 hyaline spots. The ♀ has the same markings except that it lacks the hyaline spots but it has a reddish-yellow ground-colouring.

itys. — **itys** Cr. from Surinam is a female aberrative form in which the black costal-marginal spot of the forewings is prolonged as far as into the black apical distal margin. — *ellops*. **ellops** Mén. from Central America, Colombia and Venezuela is a form being in both sexes pale-coloured and little marked, with two hyaline spots. — *strigosa*. **strigosa** Stgr. (116 c) is the most common, South Brazilian form. — The largest form of this species is **cacica** Stgr. (116 d) from Peru and Bolivia. The number of the hyaline spots is variable, these spots may also be absent altogether.

leopoldina. — **leopoldina** Fruhst. (116 c) from the Brazilian colony of *Leopoldina* makes the impression of a special species,

since not only the upper surface, but also the lower one differs greatly from the other forms. Whether only this form occurs in *Leopoldina*, we do not know; most of the forms described above are not bound to a certain locality. — The grown-up larva of *strigosa* has a blackish-grey head, a dull brownish-green ground-colouring of the body with a reddish tinge, the dorsal line of a deep black, the other dorsal part blackish-green, at the sides there are blurred pale stripes. The pupa is most similar to that of *nemesis*.

63. Genus: *Hypna* Hbr.

This genus is nearly allied to *Protonotus*, differs, however, already exteriorly by the shape of the forewings exhibiting either a normally shaped or but little prolonged apex; the shape of the hindwings also differs considerably from that of *Protonotus*. From the latter as well as from *Anaea* to which it is closely allied, the under surface likewise differs by its silvery spots. This genus, being distributed from Central America to South Brazil, contains but few species very similar to each other. Of the early stages only the pupa is known, resembling that of *Protonotus drurii*. According to A. SEITZ, the butterfly has a clumsy, irregular, but still hurried flight. The butterflies are to be met nearly all the year round.

H. clytemnestra Cr. from Surinam differs from the South Brazilian form (occurring also in Panama?) *clytem-
huebneri* Btlr. (116 d, 117 a) only by the presence of at most one of the white subapical spots on the upper *huebneri*, *globosa*, *negra*, *velox* Btlr. from Bolivia the basal part of the upper surface of the forewings *negra*, *velox*, *elongata* Btlr. is greenish, whereas *negra* Fldr. from the Rio Negro exhibits a less protracted apex of the forewing and a shorter tail of the hindwing. — **velox** Btlr. from Veragua has more robust tails of the hindwings, and **elongata** Btlr. from Santa Martha an obtuse apex of the forewing and a greenish under surface.

H. rufescens Btlr. (116 d) from Venezuela is to be regarded as a proper species, because it occurs *rufescens*, without any transitions at the same place with *clytemnestra*. The under surface resembles on the whole that of *clytemnestra*, but the hindwings exhibit much red-brown marking. — **forbesi** G. and S. from Pernambuco is *forbesi*, smaller and has a purely white band of the forewing.

H. iphigenia H. Schöff. (116 d) from Cuba has larger metal-spots on the under surface than *rufescens* *iphigenia*, from which it also differs considerably above, as is shown by the figure; the ground-colour is a bright red-brown. Of the ♀♀ only those of *huebneri* and *iphigenia* are known; they do not exhibit any sexual difference.

64. Genus: *Protonotus* Hbn.

We regard all the hitherto described members of this genus, being distributed from Mexico to South Brazil, as forms of but *one* species. The animals are so well characterized by their outward appearance that it is quite impossible to confound them with other genera. Although the butterflies exhibit a sight quite different from the *Anaea*, yet, by the inner structure of the butterfly as well as by the shape and habits of the larva it is evident that they are closely allied to the *Anaea*. By the colouring and marking the butterflies greatly resemble certain species of *Heliconius* from which they differ, however, at first sight by the very peculiar shape of the wings. — The larva was known already to the early authors, for STOLL gives the following report about them: „The larva is dark green and has a brown, nearly black stripe across the back, also at the sides such spots and stripes (on each of the anterior and posterior rings two, on each of the 4 middle rings 3 longitudinal stripes, and on the last segment 2 transverse stripes). The feet are dark green. The head has a black colour with green stripes and is decorated with two obtuse horns. On the upper part of it there are two, and next to the first ring, on both sides, three yellowish round maculae. It feeds, though only at night, on the leaves of a kind of pepper (*Piper nigrum*). During the day it hides in a leaf, the rims of which it draws in by means of its spinning and rolls it up. It seems to live there like under a roof and to protect itself against the heat of the sun. After the last skinning it turns into a short stout chrysalis hanging down freely. The latter is of a pale grey colour marked with brown spots and stripes. The imago appears generally after eleven days.“ These statements refer to the form from Surinam, *hippona* F. According to SEPP, the larva is said to live also on *Mespilus americana*, whereas the South Brazilian form *drurii* Btlr., according to W. MUELLER, has been found on *Piper gaudichaudii* Miqu. The larva of this form differs by the lateral stripes being flown together into one single broad interrupted stripe which is coloured black-red. The pupa bears on its head 2 very flat coniform appendages, is green diaphanous and on the rings 7 to 10 tinged white. The flight of the butterflies, according to A. SEITZ, by the irregularity of the movements of the wings, reminds us rather of some *Satyridae* than of that of the *Nymphalidae* darting along by jerks with their wings stretched. According to A. SEITZ, the genus *Protonotus* is doubly protected: while at rest, the butterfly resembles a long-petioled dry leaf, while flying, it agrees with *Heliconius narcæa* (72 a).

P. hippona. Of the following 21 forms we take 11 to be local races (subspecies), the others to be aberrative forms, according to our rather quite insufficient material. O. STAUDINGER presumed 4 species: *drurii*, *cecrops*, *bogotanus*, and *hippona*. But since there occurs nowhere more than one principal form, the larvae of the Surinam-form *hippona* and of the South Brazilian *drurii* exhibiting but slight differences which do not justify the presumption of separate species, we are hardly wrong in combining all the forms to one species. We have to consider **hippona** F. (= *fabius* Cr.) (117 a) from Surinam and the Amazon as the type of the species, varying considerably in the width of the yellow band of the forewings as well as in the size and number of the subapical spots. — **ochraceus** Btlr. from Cayenne is an aberrative form in which all the light markings are ochre-yellow; the submarginal spots of the hindwings, however, have the usual yellow colouring: — In ab. **castaneus** Btlr. from Ega the colour of the broad inner-marginal band of the forewings and hindwings except the black distal margin is a beautiful chestnut-brown. — ab. **butleri** Stgr. from Pebas on the Amazon River has a greatly reduced dark yellow median band and well developed, mostly prolonged yellow submarginal spots of the forewings. — ab. **fulvus** Btlr. (117 c), likewise from Pebas, is characterized by a broad brown median band and 4 brown submarginal spots of the forewings. — **cecrops** Dbl. and Hew. (117 a) from Mexico, Guatemala, Nicaragua and Costa Rica exhibits beside the differences of the upper surface a darker under surface than *hippona*; it flies in Mexico (in November). — **bogotanus** Btlr. from Colombia, being the first form of this species described, must be regarded as the type of the subspecies, differing from ab. **tithoreides** Btlr. (117 b) by exhibiting but two yellow subapical spots. — In ab. **albinotatus** Btlr. from Colombia the marginal spots and the median band of the forewings are white, the latter is also reduced to 3 smaller spots. — From the Chiriqui we have before us 1 ♀ with a complete median band, somewhat reduced marginal spots, and in the distal part broad light yellow brightened basal half of the forewings, as well as a reduced yellow spot in the black marginal band of the hindwings reaching in the anterior part hardly as far as to the subcostal. If this form should be constant, it would have to be separated as **chiricanus** subsp. nov. — A small form with very complete markings is **fassli** subsp. nov. (117 b) from the Cauca Valley (West Colombia, Upper Matagany, 1000 m, A. H. FASSL). The under surface is very light, owing to a great deal of light violet markings. — **lilops** Btlr. from Venezuela has, at the distal margin of the hindwings, 4 yellow-bordered white spots; according to O. STAUDINGER this form is hardly separable from *tithoreides*. — **trinitatis** subsp. nov. (117 a) from the Island of Trinidad is, as shown by the figure, above considerably different and is distinguished from the most closely allied continental form (*ochraceus* Btlr.) especially by more numerous submarginal spots. The under surface, especially also of the forewings, is very light. — **divisus** Btlr. from East Peru is compared by the author with *bogotanus*, while O. STAUDINGER who got this form also from Bolivia, takes it to be an aberrative form of **quadridentatus** Btlr. (117 b) with a dissolved median band and 4 small yellow marginal spots. The latter form occurs in Bolivia and has to be regarded as the type of the subspecies. — In ab. **immaculatus** Stgr. (147 c) from Peru the marginal spots are absent and the median band is more or less dissolved or vanished. — ab. **diffusus** Btlr. (117 b) from Ecuador, according to O. STAUDINGER also from the interior of Peru, shows a coherent yellow median band the posterior part of which is confluent with the end of the brown basal band having turned broad yellow. — **aequatorialis** Btlr. (117 c) from Ecuador and Peru exhibits a greatly reduced yellow median band and in contrast with it well developed marginal spots; the marginal spots of the hindwings are white. — ab. **peruvianus** Stgr. from Peru has a much broader median band, but smaller marginal spots. — **semifulvus** Btlr. (117 c) from Ecuador is presumably nothing else but a very conspicuous aberrative form which has no yellow marking whatever and in which the ample posterior half of the hindwings is black. — **drurii** Btlr. (117 d) from South Brazil has to be considered as a good subspecies. It is distinguished by broad spatulate tails of the hindwings, a large white subapical spot of the forewings and white submarginal spots of the hindwings. — The scheme of markings of the under surface is the same in all the forms, but the colouring is lighter in the one form, darker in the other. — Sexual differences are noticed neither in the shape, nor marking nor colouring. About the larva and pupa cf. the diagnosis of the genus.

65. Genus: **Anaea** Hbn.

The numerous species of this genus are distributed from the Southern States of North America to South Brazil, some species are found also in the Antilles; they occur, however, at the northern frontier of their range in but one species, in the south in but few species, whereas most of the species are at home in the tropical districts. Although the species differ extremely in the shape of the wings as well as in the marking and colouring, still even species deviating in their exterior are easily recognized as members of this genus. The subcostal of the forewings is 5-branched, but there exist great differences in the course of these veins; they partly run freely, partly they merge into each other and partly they branch off again in order to run into the costal margin as minute, short veins. Considering this variability in the structure of the veins, it is inappropriate to found genera upon small differences. We, therefore, combine *Cymatogramma* Dbl. and Hew. and *Pyrhanaea* Schatz with *Anaea*; the latter genus is anyhow synonymous with *Anaea*, since its author presupposed the type of *Anaea* (*troglydta*) as type for *Pyrhanaea*. The sexual dimorphism is extremely different; there are species with but slightly different sexes, whereas others, being not in the least similar on the upper surface, are also considerably different beneath for which reason the sexes of one and the same species have often been considered and described as different species (as for instance *indigotica-zelica*, *panariste-bertha*).

We can by no means affirm that these conditions are fully cleared up, for of many „species“ only one sex is known; it is, therefore, not unlikely that by the result of future investigations several „species“ will have to be abolished. The variability is also extremely great in many species in both sexes; according to several authors there occur in one and the same species forms with a plain or protracted apex of the forewing, a straight or curved distal margin, a straight or more or less deeply indented proximal margin of the forewing, with smooth or angled or even tailed hindwings. Thus it is in many cases very difficult to define sharply the single species, so that even authors having abundant material at their disposal (e. g. O. STAUDINGER) were not able to discern whether certain specimens were to be regarded as deviating specimens of a species or as representatives of another species. As we have of most of the species no abundant material at our disposal, which might contribute to the clearing up of these questions, we must confine ourselves to the approval of the statements of other authors. In the following discussion of the species we shall, therefore, chiefly follow the revision of the genus *Anaea* by HERBERT DRUCE published in the year 1877.

According to W. MUELLER, the larvae live on *Piper obliquum*, *Piper robrii*, *Nectandra vaga*, *Goeppertia hirsuta*, *Camphoromoca litsaeifolia* and *Croton* (*staminosus?* *macrobotrys?*); they are slender, in the anterior third somewhat thickened and have small short horns on the head; they live in cases which they construct by rolling up a leaf. The pupae are short and stout, of a shape similar to that of *Charaxes jasius*. A. H. FASSL discovered the eggs, larvae and pupae of several species; the eggs are globular, smoothly shelled, and of a light colour.

Dr. SEITZ also reports in a letter about the striking biological resemblance of *Anaea* with the palaearctic *Charaxes*: „Not quite a fortnight after having carefully observed the *Charaxes jasius* on the banks of the Tajo, I came across the *Anaea* in Brazil already on my first excursion, and I was quite surprised at the striking homogeneity in the behaviour of these two genera. The mere rumbling, shaking flight of an *Anaea* dashing off (the so-called „rushing“ flight) is exactly like that of a *Charaxes* after which one has struck in vain. It scarcely resembles the partly fluttering, partly dangling flight noticed in both of them on making their reconnoitring expeditions, when they leave their lookout on dry branches or leafless posts in order to fly about for a short while. Quite uncommon is the way in which *Anaea* and *Charaxes* often rest on the under surface of thick, leafless branches of trees. Also the wings being generally quite or almost closed and being often intermittently opened but quite slightly (so that one may just peep into them), are hardly met in any *Nymphalidae* of other groups and quite impossible in *Vanessa*, *Precis*, *Apatura*, *Limenitis*, *Ageronia* etc. I never saw a *Charaxes* or *Anaea* with its wings spread out as seen daily in the *Nymphalidae*, and the two always kept at an altitude just to be reached yet with the net, unless they were forced down by hunger. Both are characterized by a certain awkwardness and unwieldiness in spite of all their strength and swiftness, whereby they contrast remarkably with the most graceful *Apatura* and just those other *Nymphalidae* with which they agree in the splendour of the reflection on the wings, as for instance the *Catagramma*, *Myseidia*, *Nessaea* etc. I was extremely struck also by the resting *Anaea* as well as *Charaxes* raising the forewings strangely far out from the closed hindwings. Unfortunately I was not able to see whether in the *Anaea* this is called forth by the excision of the wings at the proximal margin, the hook at the posterior angle attaching itself on behind the hindwing. Still it is remarkable that this excision of the wings is found also in some *Charaxes* (such as *lichas*) and that the morphological results by which REUTER was induced to place *Charaxes* and *Anaea* closely together, are confirmed by biological observations.

In open spaces in the woods where one has once observed *Anaea*, one may be certain to meet some more specimens of the same species; they are mostly met at the same spot of the clearing, often even at the same tree, just like in *Charaxes*.“

According to A. SEITZ, the behaviour of the species with a leaf-like under surface shows that they are well aware of this protection, for they rest on the branches in such a way that they show solely their under surface, whereby they become similar to their surroundings and are thus not conspicuous; other species without this protection of the under surface keep — though rarely — their wings open in sitting. The *Anaea* are partly common and widely distributed, others are confined to small districts where they are not rare, others, however, widely distributed and everywhere scarce. Mr. A. H. FASSL wrote the following statements about the occurrence and habits of single species: *Anaea* inhabits in the groups of *xenocles*, *phidile*, *artacaena*, *glance*, *panariste* the hot zone below 1000 m, whereas *nessus*, *tyrianthina*, *nessa*, *titan*, *moeris*, *lineata*, *pasibula*, *polyxo* are decidedly mountainous animals, occurring mostly about 2000 m. At the highest elevation (2000 m) I captured *moeris* and *rosae*. The *Anaea* come to the bait, but less to places near brooks; but sometimes I also took them on the exudation of damaged trees. The flight is, at least in the tailed forms, somewhat limping, but rather swift. The ♀♀ of *panariste* and its allies imitate the *Lycorae* flying quite similarly and slowly like them (also like their other imitators *Protopogonius*, *Papilio bacchus* and *Castnia simulans*); but if they are pursued, they immediately begin with a tearing pace like the *Nymphalidae*, and then (of course mostly too late) one only knows what butterfly it was in fact. — PAUL HAHNEL says: It is a special peculiarity of the *Anaea* to rest not so much on leaves, but preferably on branches and small twigs, particularly on those with dry leaves, where they are then splendidly masked by their dark, leaf-like under surfaces.

A. troglodyta F. (117 d) from Jamaica and Hayti is known to us only in the male sex. Beneath *troglodyta*, it is monotonously grey compared with **cubana** Salv. (117 d) having beneath a great deal of greyish-black *cubana*, marking. The violet reflection of *troglodyta* is absent in *cubana*. — **astinax** Cr. from the Island of St. Thomas *astinax*, is a fiery-red form with broad black marginal and median markings; in the anal angle of the hindwings there is a large black spot; the tails are long. — Whether **portia** F. (117 d) from Jamaica and Florida is to be *portia*, considered as a form of *troglodyta* or as a proper species, we must leave undecided. On the under surface both the grey ground-colour and the red colour on the posterior part of the forewings are darker than in *troglodyta*. — **andria** Scudd. (117 c) from the United States, for instance Oklahoma (the specimens before us were cap- *andria*,

ops. tured in August), has above more dark marking and is also less fiery coloured than **ops** *Druce* (117 e) from Texas.
morrisoni. — **morrisoni** *Edw.* (117 e) is probably only a ♀ form of *andria* being more prominently marked in dark and
aidea. with more contrasting colours. — **aidea** *Guér.* (118 a) from Honduras and Nicaragua is remarkable, because
the forewings are not like in the other forms produced into a point, which is, however, again the case in
appiciata. **appiciata** *Stgr.* i. l. from Mexico being also somewhat more brightly coloured. — The larva lives on *Croton capi-*
tatum, is light green, irrorated in dark green, especially above, and has on each segment 2 or 3 white dots,
the stigmata being also bordered by white, the dorsum being set with small blackish bristles. The pupa is green,
at the sides yellowish, at the borders of the abdominal rings, of the wing-case and on the ribs of the wings red-
dish-brown, of the same colour are the stigmata and the cremaster. — In the southern parts of North
America the butterfly hibernates in hollow trees.

halice. In **A. halice** *Godt.* (118 a) from South Brazil (for instance Santa Catharina) the forewings are more
or less drawn out into a point; the ♀ has tailed hindwings. Sometimes the dark spots in the middle of the
forewings are only indicated.

chrysophana. **A. chrysophana** *Bates* (= *pyrrhothea* *Fldr.*) (118 a) from Costa Rica, Veragua, Panama, Colombia
na. and Peru, as well as South Brazil, has also in the male sex tailed hindwings. The dark parts of the forewings
exhibit a fine blue reflection. The ♀ has no reflection, but large white spots. According to SALVIN and GODMAN
rare.

moretta. **A. moretta** *Druce* (118 b) from North Brazil resembles *chrysophana*, but it has no blue reflection.
The under surface is grey, irregularly and densely strewn with brown scales and all the wings have a sub-
marginal row of very small white spots.

hirta. **A. hirta** *Weym.* The description runs as follows: ♂ length of body 15 mm, of a forewing 25 mm (thus
somewhat smaller than the ♂ of *chrysophana*). This species is in its colours the most closely allied to *A. helie* *L.*,
but not in the shape of the wings. The forewings are deeply cut out at the outer part of the inner margin,
like in *moeris* *Fldr.* (119 c), so that the inner margin forms in the middle a sharp corner and at the distal margin
a pointed tooth. The apex of the forewings forms a right angle. The distal margin is otherwise straight. The
hindwings exhibit a caudal point of 6 mm length and 1 mm width, being somewhat broader only at its base
and rounded at the tip. The ground-colour of the forewings is reddish-brown extending, however, only
across the posterior part of the discocellular, the base of cellule 3, the greatest part of the cellules 2 and 1 b,
and half of the cellule 1 a, but towards the base and at the inner margin it is covered with a violet reflec-
tion. The other part of the wing, thus a part of the base, the whole costal margin, the apex, the distal margin
and the outer part of the inner margin are blackish-brown. In the dark space before the apex there lies a broad
violet band of 10 mm length and 2 mm width extending almost horizontally through the cellules 6, 5 and 4,
touching, however, neither the costal margin nor the distal margin. The reddish-brown ground-colour of the
hindwings likewise has towards the base a violet reflection. The base itself and the distal margin are brown.
The latter, however, does not quite reach the border, so that a narrow stripe of the reddish-brown ground-
colour separates it from the border. It is anteriorly broad, posteriorly narrower and ends at the brown caudal
point. In each of the cellules 3, 2 and 1 c there is a black dot before the border. The cellules 1 a, 1 b and
half of the cellule 1 c are yellowish-grey. In the adjoining part of cellule 1 c a brown stripe extends as far as
to the base. The under surface is brownish-yellow, finely marbled in whitish in the basal half. On the
forewings, from the middle of the inner margin, a straight white stripe extends towards the apex, being proxi-
mally accompanied by a dark brown line, disappearing, however, at the vein 5. A triangle coloured somewhat
lighter than the ground-colour adjoins distally this band and occupies the space as far as to the inner angle.
The inner margin itself is dotted dark-brown at this place before the excision, as well as the costal margin at
two places in the discocellular and before the apex. The hindwings exhibit a similar, somewhat curved white
stripe running from the middle of the costal margin to the inner angle and bordered in its anterior half proxi-
mally by dark brown. The tip of the minute tail is beneath dark brown. The three black dots in the cellules
1 c, 2 and 3 are like above, there is besides yet an irregular dark brown dotting at the costal margin in the
cellules 6 to 8. Brazil.

ryphea. **P. ryphea** *Cr.* (118 b) is very widely distributed, for it has been found in Mexico, Guatemala, Nicara-
gua, Costa Rica, Veragua, Ecuador, Bolivia, Peru, Venezuela and Colombia. There occur specimens without tails
as well as with tails, also transitionary forms. Under surface light yellowish brown, tinged reddish, forewing
with a yellowish, dark-shaded oblique line from the apex to the middle of the inner margin, hindwing sooty,
black in the disk, the margins with a rosy hue.

phidile. **P. phidile** *Hbn.* (118 b) distributed from Costa Rica to South Brazil, has mostly smoothly-edged,
rarely angled hindwings; the paler yellowish-brown ♀♀ have tails of the hindwings, no violet reflection and
yellow subapical spots of the forewings. According to W. MUELLER, the larva lives on *Croton* (*staminosus*?
and *macrobotrys*?); it has only at the head small short horns and protuberances, but is otherwise smooth,
almost cylindrical and somewhat thickened only in the first third; at the head there are white stripes, below
the horns there is a reddish transverse band but faintly indicated, the horns are black, the protuberances yellow,
the ground-colour of the body is yellowish-red, below the line of the stigmata white, the lateral stripe and
the transverse band on the 5th segment are carmine; the lateral stripe is most variable; shortly before

the pupation the animal grows diaphanous green. In the first 3 stages the larva mostly attaches small pieces of leaves to the browsed middle rib of the leaf between which it is somewhat protected. The pupa is short, stout, of a shape similar to that of *Charaxes jasius*; it has no excision of the wings. After the 3rd skinning the larva constructs from a piece of a leaf drawn together at its rims a cylindrical funnel lined with spun threads and being just large enough as to shelter the stretched animal; in this funnel it remains hidden in the 4th and 5th stages, while at rest. The species is common.

A. helie *L. (Clerck)* seems not to have been found again or to be a very doubtful species, since it *helie* has no more been mentioned by any author for nearly 100 years; only **DRUCE** mentions that it may be the ♀ of *rypphea* or *phidile*.

A. erythema *Bat.* (118 c) is said to occur on the Upper Amazon. **HERBERT DRUCE** considers *erythema* to be synonymous with *phidile*, **O. STAUDINGER** takes it to be an insignificant local form. We have figured a Colombian specimen which corresponds well with the description of *erythema*, but we are unable to decide whether *erythema* is a proper species or a local or aberrative form of *phidile*. — **BATES** says about the ♀: shape like that of the ♂, but hindwings with a long, spatulate tail being outwardly obliquely expanded. The colouring is the same, but the upper surface has no purple gloss and the irregular scaling on the under surface is much coarser.

A. euryphile *Fldr.* (118 c), distributed from Mexico to Brazil, differs from *phidile* by the short tails *euryphile* of the hindwings. The upper surface of the hindwings is mostly lighter than in *phidile*, but it may be just as dark as in the latter. The under surface also shows hardly any constant differences. Whether it is a proper species?

A. sosippus *Hpffr.* (118 c) from Peru Chanchamayo) and Ecuador has a dull violet reflection. The *sosippus* under surface is brown with numerous, small white scale-spots and two parallel dark oblique bands on the hindwings. The ♀ seems to be still unknown.

A. cratais *Hew.* from Bolivia does not lie before us. This species is smaller than *glycerium* which *cratais* it resembles, though it has a band of white spots on the under surface of the hindwings.

A. glycerium *Dbl. and Hew.* (118 c) from Mexico, Guatemala, Nicaragua, Costa Rica, Chiriqui, *glycerium* Panama, Veragua, Colombia and Venezuela, is in some places very common, but the ♀ is very rarely captured. **DRUCE** states that the specimens from Mexico are the smallest and darkest, but that they agree the best with specimens from Colombia and Venezuela. — The form from Bolivia (Coroico, leg. A. H. FASSL) exhibits stronger colours, more and more coherent dark markings, often a considerable blue reflection and an under surface with much more pronounced dark markings, exhibiting also often a series of white glossy spots in the middle of the hindwings. We denominate this form **ornata** *subsp. nov.* *ornata*.

A. echemus *Dbl. and Hew.* (= *poeyi* *Lef.*) (118 d) is said to occur, according to **DOUBLEDAY** and *echemus* **HEWITSON** as well as **DRUCE**, in Honduras, which is, however, contradicted by **O. STAUDINGER**. The figured specimens originate from Cuba. The species is remarkable for its colour of the upper surface, the black distal part of which, on the forewing, gradually changes into the fiery red basal part, and for the marking of the under surface reproduced by our figure. It is the type of the genus *Cymatogramma* *Dbl. and Hew.*

A. verticordia *Hbn.* the habitat of which is stated by several authors to be Cuba, occurs in Hayti *verticordia* according to other authors. According to **GODMANN** and **SALVIN** it differs from **dominicana** *G. and S.* (118 d) *dominicana* from the Island of Dominica chiefly by the absence of the yellow spots near the inner angle of the forewings. Both are, therefore, presumably forms of one and the same species.

A. nobilis *Bat.* from the valleys of Central Guatemala has a somewhat curved costal margin and *nobilis* pointed forewings, the distal margin being somewhat sinuous before the inner angle, the inner margin straight, the distal margin of the hindwings slightly undulated, the tail long and somewhat widened at the tip. Forewing above of a prominent dark purple-red, 2 curved lines from the costal margin (behind the discocellular) towards the inner margin, all the veins blackish, hindwings blackish, at the base of a deep purple-red, near the tail a series of whitish spots being encircled by black. Under surface reddish, glossy, with a slight, irregular dark brown, hindwings with 2 dark and indistinct oblique stripes. ♀ of a shape and colouring similar to the ♂, but the forewings with 2 curved oblique series of brownish-white spots, distal margin of the hindwings lighter with a gloomy brown shine, the submarginal spots larger and more complete. Under surface like in the ♂, but much lighter. Seems to be very rare or to occur only in little frequented places; as for instance on the Salama Plateau, near San Geronimo.

A. nesusus *Latr.* (= *cleodice* *Fldr.*, *tempe* *Fldr.*) (118 d) occurs in Colombia, Peru, Ecuador, Bolivia *nesusus* and Venezuela. The ♂♂ are frequently captured, the ♀♀ rarely. The ♂ exhibits a blue reflection being very intense on the longitudinal band and near the inner margin of the forewings. The ♀, as is shown by the figures, differs extremely, exhibiting the broad white median band of the upper surface of the forewings also on the under surface, where it is, however, strewn with small brown spots. Otherwise the under surface resembles entirely that of the ♂.

- nesea*. **A. nesea** Godt. (= *centaurus* Fldr.) (118 d) has so far been known only from Colombia. The ♀ seems to be still unknown. In the ♂ the magnificent fiery bands of the forewings are absent, the latter, however, have often vitreous median spots.
- strymon*. **A. strymon** Weym. from Ecuador (900 to 1500 m) is smaller than *nesea*, it has quite similarly shaped forewings, but the hindwings are not tailed. The upper surface is violet with broad dark margins and the same median spots of the forewings. The under surface is greyish-yellow with 3, partly shortened brown bands of the forewings and 2 brown bands of the hindwings running parallel to the distal margin. The forewings have a broad brown distal border of which, however, the apex of the wing and the inner angle remain free.
- titan*. **A. titan** Fldr. (118 e) has been described according to Colombian specimens, but according to HERBERT DRUCE it occurs also in Costa Rica. The Costa Rica form is much darker than the Colombian. The figured ♀ has been discovered by Mr. A. H. FASSL in East Colombia (Upper Rio Negro, 800 m); it has, like the ♂♂ of *nesea* and *tyrianthina*, 2 half-diaphanous spots in the middle of the forewings.
- rutilans*. The typical form of **A. rutilans** Btlr. from East Peru has no tails of the hindwings, whereas in the figured form of **A. caudata** subsp. nov. (118 e) from the Chanchamayo, they are relatively just as long as in *titan*. The under surface is quite similar to that of *titan*, but it lacks the white submarginal spots on all the wings. *titan* and *rutilans* are presumably forms of one and the same species.
- tyrianthina*. **A. tyrianthina** S. and G. (118 e) from Bolivia and Peru is the largest and most beautiful species of this group. It resembles *nesea* pretty much, but it has no tails of the hindwings. The ♀ of this rare species seems to be still unknown.
- onophis*. **A. onophis** Fldr. (118 e) is distributed from Guatemala to Colombia, Ecuador and Peru, and has recently been found also in Bolivia (Coroico, Rio Songo). The ♀ has a more compact shape, paler colours and a larger yellowish spot at the costal margin of the hindwings. Beneath the species is similarly decorated with dark and silky bands as *pithyusa* (118 f), but the dark inner half is distally more irregularly defined and projects in thick obtuse teeth behind the cellule of the forewing.
- eubaena*. **A. eubaena** Bsd. (118 f) from Central America has more pointed forewings, being more sinuated at the distal margin; the ground-colouring is, compared with *onophis*, more brownish than black and the forewings seem always to exhibit only 4 blue submarginal spots. The under surface is lighter than in *onophis*, but scarcely different in the scheme of markings.
- arginussa*. **A. arginussa** Hbn. (120 B a) occurs, according to O. STAUDINGER from Peru to South Brazil (Rio de Janeiro). DRUCE denotes it as rare in Minas Geraes; in Peru it is common. It greatly resembles *onophis* above, but the white submarginal dots of the hindwings are also beneath very prominent. — **onophides** Stgr. from the Chiriqui has only 4 blue submarginal spots of the forewings. — **concolor** we denominate the South Brazilian form (Santa Catharina, São Paulo) in which on the upper surface all the wings are hardly differently coloured on the basal area, as on the outer part of the wings, whereas typical *arginussa* exhibit a bright blue reflection at the base.
- amenophis*. **A. amenophis** Fldr. from Bahia, according to DRUCE also occurring in Guatemala, Colombia, East Peru and on the Lower Amazon, has been described as follows: „♀ above like *laërtes* (= *morvus*-♀, 119 a), but everything coloured in steel-blue, a large basal area and a regular subapical band steel-blue, as well as on the hindwings a large discal area, without dots. Under surface like in *iphis*. We doubt whether this species is here at the right place.
- perenna*. **A. perenna** S. and G. (= *amenophis* Druce nec Fldr.) (118 f) from Colombia, Guatemala, Peru and, as stated, also from the Lower Amazon, differs from all the species of this group by the blue marginal marking of the hindwings.
- pithyusa*. **A. pithyusa** Fldr. (118 f) from South Mexico, Guatemala, Veragua and Costa Rica, is the smallest form of this group. It differs from the similar species chiefly by the shape; distal margin and proximal margin of the forewings are much less deeply sinuous, so that the inner angle does not project so much; the apex of the forewings likewise decreases in intensity thereby. The ♀ is, according to DRUCE, much larger than the ♂, the base of the wings is bluer and the spots on the forewings are larger and mostly white. In many places common.
- lemnos*. **A. lemnos** Druce (120 B a) from Peru (Chanchamayo) differs from the species having above similar markings by the deviating under surface which is much more variegated with reddish and white embeddings in the middle especially of the hindwings. The ground of the wings is beneath also lighter, so that the dark bands are more sharply contrasting. Above the whole proximal half of the wings is of a bright blue lustre, the blue distal spots are very large. The inner-marginal excision at the forewing very slight.
- appias*. **A. appias** Hbn. (118 f) from South Brazil (Espírito Santo, São Paulo, Rio Grande do Sul), discovered by Mr. A. H. FASSL also in Colombia (Upper Rio Negro and Muzo), seems to be a species of little variability.

It has a characteristic marking of the under surface of the forewings. — **appiades** *subsp. nov.* (120 B a, b) *appiades*, of which there are lying before us from the collection of Mr. A. H. FASSL: 2 ♂♂ from West Colombia (Aguaca-Valley, 2000 m), 1 ♀ from Colombia (Muzo, 400 to 800 m), 3 ♀♀ from East Colombia (Upper Rio Negro, 800 m) and 2 ♀♀ from Bolivia (Rio Songo, 750 m). The ♂♂ are intensely blue or green on the basal half of all the wings, and the light spots are all of a pure blue (not partly white). The ♀♀ have likewise a much more distinctly blue basal part of the wings and are on the distal half darker than in *appiades*.

A. artacaena *Hew.* (120 B a) is distributed all over Central America as far as Colombia, but everywhere *artacaena*, very rare. Both sexes possess a white band of the forewing being pierced behind the cellule, whereby the species is at once recognizable. It is also beneath distinguished by a light tinge which strongly contrasts with the dark proximal part of the forewing.

A. eribotes *F.* occurs on the Lower Amazon and in Guiana. In the ♂, a bright rust-brown distal *eribotes*, part of all the wings sharply contrasts with the black basal third exhibiting a blue gloss; the apex of the forewing is black. The ♀ is of a dull slate-grey, the base of the forewings broad light blue, near the apex of the wing a short, undulate, dirty-white shine. Distal margin of the forewings slightly sinuate, the under surface with distinct black spots. — The larva has the usual shape of the *Anaea*-larvae, it is black and has single white, small bristles standing on small white warts, two rows of which are on each side of the dorsum and one row below the stigmata; the small, short, black horns on the head have in the middle a white streak, another similar one at each side of the face and 2 more intersecting ones in the middle of the face. The pupa is relatively slender with black and red markings.

A. porphyrio *Bates* (119 a) from the Amazon is characterized by its peculiar colouring of the upper *porphyrio*, surface. It is very common in the forests of Peru.

A. testacea *spec. nov.* (119 a) from Peru (Coll. A. H. FASSL) has on the basal part of all the wings *testacea*, the same violet reflection as *porphyrio*, from which, however, it differs greatly beneath: the under surface is buff with small brownish and blackish spots; the centre of the hindwings is traversed by a very hazy brownish band; the distal margin is brownish, hazy, from the inner angle to the tail there stand black small spots bordered by a broad whitish one.

A. leonida *Cr.* from Surinam is a dubious species; DRUCE takes it to be the ♀ of *eribotes* which *leonida*, supposition however, is erroneous according to O. STAUDINGER. It has brown distal margins of all the wings. CRAMER figures specimens as ♂ and ♀ which are presumably both ♂♂ and belong to different species; they are said to originate from Surinam. We do not possess any material of it.

A. xenocles *Westw.* (= *xenoclea* *Stgr.*) (119 a) is distributed from Guatemala to Bolivia and Rio de *xenocles*, Janeiro and seems to be very common. Here the basal parts of the wings are of an intense metal-blue gloss; the submarginal row of spots on the forewings, however, is irregular, approaches the distal margin at the inner angle and is continued on the hindwings in the shape of obsolete internerval, diffuse spots before the border. Under surface finely, though brightly silvery irrorated. The ♀ has a lighter blue base of the wings and only two white subapical spots of the forewings. — **subbrunnescens** *Stgr. i. l.* from Bolivia seems to be only *subbrunnescens*, an aberrative form being beneath, especially on the hindwings, scaled more in brown.

A. octavius *F.* the patria of which has been reported by the author to be India by mistake, has *octavius*, not been seen in nature by any of the modern authors. The description, being entirely insufficient, runs as follows: wings tailed, black, a shortened green band; beneath grey, a red-brown stripe.

A. morvus *F.* (= *laertes* *F.*) (119 a) is a widely spread and greatly variable species. The figured *morvus*, specimens originate from the Amazon. Here the submarginal spots are entirely absent, the basal half of the forewings, however, is of a very bright metallic gloss. — **mortua** *Stgr.* (not *Druce*) is the Central American and *mortua*, Colombian form with obsolete spots. — By far larger Colombian specimens, distinguished also by a far more greenish gloss at the distal margin of the forewings, were denominated **pseudiphis** by O. STAUDINGER. — It *pseudiphis*, is still undecided which form has to be considered as **iphis** *Latr.* (119 a, b). We have figured a Colombian speci- *iphis*, men of that form, which is generally thought to be *iphis*. It is a large butterfly with long tails and a very much falciformly protracted inner angle of the forewings, the apical part of which exhibits bright blue spots being, however, not continued along the distal margin. Beneath the light small scales are arranged to a narrow marginal band and an oblique line cutting off the part of the inner angle. — **morpheus** *Stgr.* (119 b) from the *morpheus*, Upper Amazon, Bolivia and Peru, is generally larger than *morvus* and has blue spots at the distal margin of the forewings. The under surface is darker (brownier).

A. arachne *Cr.* from Surinam, which was united with *morvus* as being synonymous by several authors, *arachne*, is certainly another species. Shape about like that of *morvus*, though we cannot ascertain from CRAMER's figure whether the inner margin of the forewings is sinuate; nothing is said about this in the description. The hindwings, except the narrow black border, are entirely green, the forewings green on the basal half, all the wings, however, are traversed by a moderately broad black subbasal band; a large green spot is in the apex of the forewing. The under surface is brown with whitish markings near the base of the hindwings, and all the wings are traversed by a rather broad bluish submarginal band; the under surface is, therefore, rather variegated.

- oenomais*. **A. oenomais** Bsd. (119 c) from Mexico, Costa Rica and Chiriqui makes the impression of a small, little marked *iphis* to which the under surface is also quite similar. — **lina** *form. nov.* from Panama (Lino, 800 m) may be a temporal form of *oenomais*. The basal colouring of the upper surface is not blue, but green (glossy), occupying also a larger part of the wings. The under surface is brown and less irrorated in white.
- cicla*. **A. cicla** Mschr. from Surinam, of which apparently only 1 specimen has become known so far, according to which the species has been described, seems to be allied to *oenomais*. It has the same shape of the wings, but the inner margin of the forewings is straight. The larger inner half of the wings is above of a light blue silver with a greenish shine; in the dark border there is a small blue, subapical spot; before the small tail of the hindwing there stands a black spot with a blue pupil. The under surface seems likewise to agree well with *oenomais*.
- herbacea*. **A. herbacea** Btlr. from Costa Rica is presumably a form of *glauce* (119 c). The basal part of all the wings is green and less extensive; except a green subapical spot and 3 white dots at the distal margin of the hindwings, the upper surface has no marking. The under surface essentially corresponds with *glauce*.
- acaudata*. **A. acaudata** *spec. nov.* (119 d) from Bolivia at first sight makes the impression of a *felderi* (119 d) without tails. The shape of the wings, however, is still quite different: the apex of the forewings is more rounded, the distal margin is almost straight, there is no trace whatever of the small tail and the inner angle of the hindwing is rounded. The marking of the forewings is almost the same as in *felderi*, but the greenish-blue colouring of the hindwings expands further distally. The under surface is generally lighter than in *felderi*, through the wings, from the middle of the costal margin of the forewings towards the middle of the inner margin of the hindwings, runs a blurred dark band; in a basal direction from this band the wings are darker than on the distal part; from below the apex of the wings to the first median vein of the forewings runs a greyish-brownish band and the hindwings have a blurred greenish-blackish submarginal band in the reddish-grey distal part; between the second and third median veins there is a small black, submarginal dot.
- hedemanni*. **A. hedemanni** Fldr. from Mexico (Potrero, January) has been described as follows: smaller than *glauce* (119 c), apex of the forewing greatly protracted, pointed sickle-shaped, hindwings without tails, but distinctly angled at the third median vein. All the wings above steel-bluish black with 5 steel-blue submarginal spots, beneath of a glossy greyish white reddish brown, striated in white, with a median band being angled at the third median vein and fading away proximally, on the forewings with a submarginal, greyish green stripe, on the hindwings with almost disappearing black dots being interiorly marked in blue.
- moeris*. **A. moeris** Fldr. (119 c) from Colombia is conspicuously marked in intense green. The hindwings have very long tails, and the inner angle of the forewings forms a pointed sickle. Whether it is a proper species or a form of *morvus*, we cannot decide.
- alberta*. **A. alberta** Druce (119 d) from Peru has a glossy brown under surface with thick dark and light brown spots. Not known to us in nature. According to the figure, the forewings exhibit more distinctly the blue spots of the forewings which are in *moeris* continued from the apical district along the distal margin; the sickle of the inner angle is just as pronounced as in *moeris*, but the hindwings have only a short tooth instead of the long spatulate tails.
- glauce*. **A. glauce** Fldr. (119 c) from the Upper Amazon and Colombia varies in the colouring of the markings above between green and blue. The ♀ is, as is shown by the figure, considerably different from the ♂, by having long spatulate tails, with a strongly falcated tornus of the forewing and a more abundant metallic covering. — **glaucome** Fldr. are according to O. STAUDINGER little marked specimens of *glauce*. — In **felderi** *subsp. nov.* (119 d) from Ecuador the greenish-blue basal area is reduced, whereas the submarginal marking of the same colour is more developed. The under surface is lighter, though more contrasting, on the outer part of the hindwings greenish. — **glaucina** Stgr. (119 d) from Colombia is perhaps a proper species. The upper surface is shown on the figure; the under surface is rather monotonous. — As **centralis** *subsp. nov.* (120 B b) we describe, according to two specimens from Panama (Lino, 800 m, Coll. A. H. FASSEL), a form being smaller and more slender and having a greatly reduced, green basal colouring, particularly of the hindwings; the under surface is much lighter (grey with a slight reddish shine) and has less dark markings.
- florita*. **A. florita** Druce (120 B b) from Peru (Chanchamayo) is a neat little animal with pronounced blue markings. The under surface is light brown, irregularly scaled in brown and white; from the apex of the forewing to the middle of the inner margin runs an indistinct white line. The hindwings are the darkest at the base and behind the middle, at the distal margin there are 6 indistinct white spots.
- praxias*. **A. praxias** Hpffr. from Peru is somewhat larger than *glauce* (119 c) with the same colouring, but only one plain little apical spot of the forewings below which there is sometimes another small blue spot parted by a vein, before the middle of the distal margin. Hindwing without tail or tooth.
- vicinia*. **A. vicinia** Stgr. (119 d) from the Upper Amazon has sometimes another pair of blue spots at the distal margin. The under surface resembles that of *anassa* (120 A e), though it is browner. The hindwing has no tailed continuation, but its anal angle is extended to an obtuse point by which it is distinguished from all the similarly coloured species. — **iphimedes** Stgr. i. l. from Bolivia has more and greenish blue markings of the upper surface and a paler brown under surface.

A. beatrix Druce (120 C b) from Chiriqui is an imposing species. The ♀ is beneath much greyer than the ♂. Seems not to be rare.

A. cleomestra Hew. (120 C a) from Nicaragua and Veragua is a very rare species. The hindwings are tailed and the inner margin of the forewings deeply sinuate. On the blackish-brown ground there is across the forewing and hindwing a broad blue band before which there are also two blue subapical spots. The under surface is very plain, yellowish-grey with yellowish and blackish, small strokes.

A. ates Druce (119 d, e) from Bolivia, Peru and Ecuador, reported also from Rio. ♂♂ are often captured, whereas the ♀♀ seem to be very rare. Above greatly resembling *jelderi*, whereas the under surface is marked like in *iphis* (119 b); it differs from *iphis*, however, by the purer tinge of the under surface and the much smaller size. The Bolivian specimens have also greenish-blue submarginal spots near the inner angle of the forewings.

A. drucei Stgr. (119 e) from the Upper Amazon has only short teeth instead of the tails of the hindwings and a considerably different under surface, but above all the margin of the forewing of the ♂ is conspicuous for its broad blue gloss.

A. cerealia Druce (119 e) from Peru (Chanchamayo) seems to be a rare species. Instead of green the marking of the upper surface seems to be just as often dark blue. Resembles extremely *ates* Druce.

A. phila Druce (120 A a) from Colombia and Honduras seems to vary greatly, for a specimen from Honduras before us exhibits a very obsolete subapical and submarginal marking. The distal part of the upper surface of the wings is of a deep velvety black and delimitates straightly, not marginally convex towards the metal-glossy basal part of the forewings.

A. boliviana Druce (120 B b, c) from Bolivia is of very dim colours. The ♂ is above deep bluish black, the lightest is the basal area of the forewings, near the apex of the forewing starts a band consisting of 3 spots and running towards the inner margin. The ♀ is beneath lighter brown than the ♂ and has 3 grey spots between the tail and the anal angle. The metal gloss of the upper surface has not the bright shine of the preceding species, but it remains considerably duller, particularly in the ♂.

A. psammis Fldr. from Colombia agrees with *morvus* (119 a) in the habitus. ♂ above blackish-brown, steel-blue, basal third of the forewings greenish leaden grey, 4 to 6 light steel-blue submarginal spots, distal margin light steel-blue, discal area of the hindwings dusted in greenish leaden grey, anal margin light steel-blue, leaden grey submarginal spots gradually decreasing in size.

A. stheno Prittw. (119 e) from South Brazil (Santa Catharina where it flies at the end of April, Rio Grande do Sul, Sao Paulo) and Paraguay. O. STAUDINGER takes it to be the Brazilian representative of *morvus*, whereas DRUCE considers *stheno* to be a proper species. In the ♂ of *stheno* the whole upper surface is almost uniformly tinged with a dull violet-blue, without any real metallic spotting, the violet hue in the basal third of the hindwing hardly growing somewhat more intense. — According to W. MUELLER, the larvae live on different Laurineae: *Nectandra vaga* Meissn., *Goeppertia hirsuta* Nees and *Camphoromoea litsaeifolia* Meissn.; it has the same shape as that of *phidile*; ground-colouring dirty orange, in the last stage the dark lateral stripe grows so faded that it is hardly discernible. The habits of the larvae are the same as of *phidile*, except that the animal always severs the piece of the leaf out of which it forms its funnel, altogether from the living leaf and fastens it again by web-threads so that the piece of the leaf dries up. By this demeanour the animal deviates from the 3 other *Anaea*-larvae observed by W. MUELLER and from the larva of *Protopogonius drurii*. Pupa in the shape similar to *phidile*, being purely green diaphanous with white and dark green spots.

A. otrere Hbn. (120 A a) from South Brazil (Rio de Janeiro, São Paulo, Rio Grande do Sul) is beneath like the preceding species, but somewhat more marked. Except in front of the apex there are blue reflecting spots also before the middle of the border of the forewing; but they are much further away from the border than in similar species.

A. uzita Druce (120 B b) from Cayenne is a neat species. It is known to us only from the description and figure, according to which the blue subapical spots on the upper surface of the forewings are extant, though reduced, and on the under surface of the hindwings the centre is traversed by a series of punctiform spots of the shape of ocelli.

A. pleione Godt. from the Antilles (?) has not been in the hands of any modern author. The translated description runs as follows: expansion of wings between 5.4 to 8.6 cm. Upper surface of the wings deep yellowish brown, border of the forewings blackish brown marked, with two yellowish brown spots, which are more or less distinct. Inner margin of the hindwings bordered by a blackish line, being curved and double opposite the distal angle. Under surface of the 4 wings yellowish, with reddish brown meshy markings and in the middle traversed by a brown stripe along the inside of which a faint mother of pearl colouring is noticeable, which colouring is also seen at the beginning of the costal margin of the forewings. Body above yellowish brown, beneath yellowish, with 4 white dots on the head. Antennae rust-coloured. — The statement that the butterfly has white dots on its head, is very strange. Such a marking does not occur in any of the *Anaea* known to us, probably in none whatever, and we may, therefore, assume that *pleione* does not belong into this genus.

A. philumena Dbl. and Hew. (= *hauxwelli* Drc.) (120 A a) from the Upper Amazon and from Co-

lombia is in the male sex but little marked on the upper surface. The under surface of the ♂ resembles entirely that of *ates* (119 e), in the ♀ it is much greyer.

lorna. **A. lorna** Druce (120 A a) from Bolivia and Ecuador seems to be known only in the male sex. The Ecuador form figured by us has on the fore- and hindwings a somewhat broader green marking than the Bolivian specimen figured by DRUCE. Characteristic is the broad light blue margin of the hindwing being sparsely dusted in dark. — Of **A. placida** Druce (120 B c) from Bolivia we reproduce the original figure. The author himself admits the possibility that *placida* may be not a proper species, but an (aberrative) form of *lorna*. If, however, the figure of the under surface is correct, *placida* may be also a special species, all the more since the shape of the wings is neither like that of *lorna*. The coloristic difference consists above all in the reduction of the light blue wing-margin and of the subapical spots on the forewing of *placida*.

grandis. **A. grandis** Druce (120 B e), habitat unknown, has been described and figured according to a ♀. According to the original figure we reproduce the under surface. Large, upper surface almost exactly as in *proserpina*, broad and obtuse wings, with a short broad spatulate tail of the hindwing, the blue of the basal half of the hindwing light and bright. The dirty sand-coloured, yellowish-brown under surface is irregularly irrorated in a sooty colour.

offa. Of **A. offa** Druce (120 A a, b), described and figured according to a ♀ from Ecuador, we have furnished figures of both sexes according to specimens taken by Mr. A. H. FASSL in East Colombia (Upper Rio Negro, 800 m). Very much like the preceding genus, but the distal spot before the apex is double and there is mostly also a diffuse spot before the middle of the border of the forewing.

cluvia. **A. cluvia** Hpffr. from Bolivia resembles very much *chaeronea* (120 A b, c) above, from which, however, it deviates greatly beneath; the forewings have only one band running into the apex of the wings, which parts the wing into two, quite differently coloured halves, the inner half being dark brown, the outer half, however, whitish with brown marbling.

catinka. **A. catinka** was described and figured by DRUCE (120 B c) according to a ♀ of unknown habitat. Easily recognizable by the very light blue of the upper surface being brightened to white in the disk of the forewing.

morta. **A. morta** Druce (120 A b) from Honduras has been described as follows: Upper surface brownish-black, the basal half of all the wings of a glossy blue, above extremely similar to *offa*, but without the submarginal spots on the hindwings. The under surface is very different; it is pale greenish-brown, near the base of the forewing irregular with white scales, both wings in the middle from the apex to the inner margin with an undulate, pale ochre-yellow band. The figured specimens originate from East Colombia (Aguaca-Valley, 2000 m, A. H. FASSL). — A. H. FASSL says about the egg: I observed the ♀ depositing the eggs, in the midday-sun, on a bush in the primeval forest with large, rough leaves (like our burdock). The egg greatly resembles that of *pasibula*, but is somewhat smaller and more whitish.

victoria. Of **A. victoria** Druce (120 B c, d) from Rio de Janeiro we can only reproduce the original figures. The base of the forewing is of a very bright blue in the ♂ as far as to the middle, in the ♀ beyond the middle. Under surface dirty greyish-brown with very sparse, irregular irroration. Before the apex the usual spots.

chaeronea. **A. chaeronea** Fldr. (120 A b, c) does certainly not differ specifically from **indigotica** Salv. (♀ = *zelica* *indigotica* Salv. (120 A c, 120 C b). The former occurs in Colombia, the latter in Chiriqui, but from Colombia there come also specimens hardly distinguishable from the Chiriqui-form. On the under surface *indigotica* seems to be somewhat more scaled in white, on the posterior part of the hindwing. — **peruviana** Strand from South East

peruviana. Peru having been described only according to one ♀, differs from the ♀ of *indigotica* by the yellow band of the forewing being separated from the costal margin only by a line of hair's breadth and reaching also to the inner angle by a millimetre's breadth. The marginal band of the hindwing of the same colour is continued, though *corita* obsolete, as far as to the inner angle. Beneath the dark stripes are more developed. — **corita** Fruhst. from Brazil (Espiritu Santo) is known only in the female sex. The yellow longitudinal band of the forewings is nearly as broad again and lighter. The hindwings exhibit a red-yellow marginal band which does not discontinue before the tails as in *indigotica*, but extends as far as to the submedian. — A. H. FASSL says about the egg of *chaeronea*: „From a ♀ captured on the 19th of April 1910 on the Upper Rio Negro at an elevation of 1200 m I got a deposit of eggs. The egg, as probably in all the *Anaea*, is of a globular shape, wax-coloured; somewhat iridescent, and of about the same size as that of *Papilio machaon*.“ The same author reports about the pupa: „The pupa has the typical compact shape of the other pupae of *Anaea* known to me and is best to be compared with a pupa of *Theclida*, except that the abdominal rings are still more drawn in and the point of the cremaster, on being seen from above, lies about in the middle of the fourth segment. The large hollow space formed beneath by the bend is anteriorly connected by the wing-case. The pupa is of an ivory white with an enamel gloss, the eyes yellowish, the leg-cases behind each other with two pair of dark dots. The ribs stand out as if watery. In the forewing there are three dark concentric curved lines visible of half a mm breadth each, which do not correspond to the future marking of the butterfly. The dorsal line seems to be coloured just as watery as the veins of the wings; the first 4 segments, however, exhibit besides three pair of greyish-brown streaks of about half a mm breadth being posteriorly divergent. The pupa is 17 mm long and at the greatest breadth (above the third abdominal ring) 10 mm in diameter. I found it on the 13th of July 1911 with its head down

spun on to the under surface of a large hard leaf belonging to the lowest branch of an enormous tree of the primeval forest. The said pupa yielded, on the 26th of July, the ♀ butterfly differing greatly from the ♂, with the broad, red-brown bands." — Seems to be not rare.

Of *A. xenica* Bat. (= *xelica* Stgr.) (120 B e) from Guatemala only the ♀ was known for a long time, *xenica*. In all probability it is a local form of *chaeronea*.

A. promenaea G. and S. from Mexico (Cordova) is said to be closely allied to *xenica* (120 B e), but *promenaea*. the base of the wings is more blue in the ♂, more purple in the ♀. Differing from the ♂ of *indigotica* by the absence of the slate-blue bands on the upper surface.

A. proserpina Salv. (= *pedile* Druce) (120 B e) from Guatemala and Costa Rica lies before us in a ♀ *proserpina*. from Costa Rica (Orosi, 1200 m, Coll. A. H. FASSL). We reproduce the figures from the „Biologia centrali-americana“. Here the spots before the apex of the wing converge to a preapical oblique band, and the hindwings are margined in dull lightblue.

A. basilia Cr. from the Upper Amazon River is a rare species which seems to have been captured *basilia*. last by BATES in the fifties of the last century. According to DRUCE it greatly resembles the following species and has only somewhat more and lighter blue colouring. — *phantes* Hpffr. (120 A c), only a local form of *basilia*, *phantes*. from Peru and Bolivia, is in both sexes rather variable above, because there may be abundant as well as little submarginal marking; the under surface, however, is rather constant. The ♂♂ also vary greatly in size. If the ♀♀ connected by us with this species belong here indeed, we have to state yet Panama (Lino, 800 m, Coll. A. H. FASSL) as habitat. ♂♂ from Panama are not lying before us.

A. memphis Fldr. from Colombia and the Amazon is known only in the male sex. According to the *memphis*. author, this species is the most closely allied to *iphis*, but its size, shape of the forewings and marking of the upper surface greatly resemble *basilia*. — *montana* subsp. nov. from Central Peru (Hunamobamba, 1500 m, *montana*. A. H. FASSL) is the larger alpine form with much more subapical and submarginal marking of the upper surface. The under surface is lighter blue and less irrorated in white.

A. mora Druce from Colombia and Guatemala has been described as follows: Upper surface greenish- *mora*. black, basal half of the forewing of a dim green, a green spot near the apex of the forewing and an indistinct spot near the anterior angle of the hindwings, being slightly tinged in greenish. Hindwing without a tail, basal half and distal margin green, a row of 4 small whitish spots from the anal angle to the apex. Under surface dark brown, all the wings spotted in chestnut brown, with greyish scales along the costal margin of the forewing, all the wings with a submarginal row of indistinct white spots.

A. orthesia G. and S. (= *mora* Druce p. p.). ♂ forewing purple-black, dusted in blue at the base, the *orthesia*. margin of the forewing indistinctly blue. Under surface chestnut-brown, everywhere irrorated in rust-reddish and white. Forewing very pointed, hindwing without a tail. ♀ brownish-black, at the base blue, forewing with a blue spot near the apex, under surface brown, with a reddish tinge, irrorated in brown and white; hindwings with tails. The ♀ resembles greatly *A. oenomatis* (119 c) but the wings are more pointed and their basal area of a more intense blue colour. Deviating from *mora* by a more purple hue of the wings, the blue of the basal area being less tinged greenish etc. Mexico, Guatemala.

A. cambyses Druce from Peru (Chanchamayo) is above deep black, the basal third of the forewing *cambyses*. green, two small green apical spots standing closely together; the basal third of the hindwing bluish-green, a submarginal row of 5 indistinct green spots, the anal angle and inner margin red-brown. Under surface dark brown, at the base, at the costal margin and at the apex of the forewing thickly covered with greenish-white scales, base and inner margin of the hindwing irregularly spotted in white, a submarginal row of small white spots.

A. lyceus Druce (120 B d) lies before us in several ♂♂ from West Colombia (Cauca-Valley, and 1 *lyceus*. pair from the Aguaca-Valley, 2000 m) and 3 ♀♀ from Bolivia (Rio Songo, 750 m, A. H. FASSL), according to DRUCE this species occurs also in Ecuador. While in the Colombian ♀ the violet-blue basal part occupies only scarcely the half and the subapical marking is very insignificant and blurred, the Bolivian ♀♀ have a larger and greenish-blue basal part and greatly developed subapical and also some submarginal marking. Beneath these ♀♀ are browner and have a much more silky gloss. We denote this form as *lynceus* subsp. nov. *lynceus*. (120 A d).

A. schausiana G. and S. (120 C a b) from Coatepek in Mexico is a peculiar species because both sexes *schausiana*. are above almost the same. It is known to us only from the figures in the „Biologia centrali-americana“ which are depicted according to specimens of W. SCHAU. Approximates *beatrice* (120 C b).

A. odilia Cr. (= *polycarnes* F.) (120 A d, 120 B d) is a rare species from the Upper Amazon. The *odilia*. upper surface is lighter or darker, but always unmarked. The under surface exhibits more or less white scaling. The ♀ is above greyish-brown with glossy blue scaling, except dull margins; several indistinct bluish subapical spots. Under surface light greyish-brown with a slight cloudy marking on the hindwings and small white spots at the distal margin of the hindwings. — The statements made by older authors about the larvae are incorrect.

nenia. **A. nenia** Druce (120 C a) from the Upper Amazon (São Paulo) has another shape of the wings (a less sinuous inner margin of the forewings), and the under surface differs considerably from that of *odilia*, being dull dusty-grey, irrorated in white, with a darker median band and marginal band the latter of which exhibits on the hindwing light clouded spots.

laura. Of **A. laura** Druce (120 A d, 120 B d) from Veragua and Colombia (Muzo, 400 to 800 m, A. H. FASSL), only ♂♂ seem to be known. They are above intensely black with an indistinct, dull greenish tinge growing somewhat more prominent at the base of the forewing. The under surface is also chestnut-brown with silvery white scaling; before the apex of the hindwing there is a large silvery white costal spot, in front of it a light undulate band composed of silvery interspersed, small scales.

rosae. **A. rosae** Fassl (120 C d) from West Colombia (Rio Aguaca Valley, 2000 m) is one of the best discoveries made by the author during his investigating and compiling work of many years in tropical South America. The ♂ is extremely distinguished from its allies of this genus especially by the sight the under surface affords being not nearly attained by any other species of *Anaea*; nevertheless the ♀ carries off the palm, since it is besides fitted out with a beautiful upper surface. Mr. A. H. FASSL also captured a ♂ in which the greyish-blue marking of the upper surface of the forewings is especially well developed, whereby an intermediate stage has been created between the appearances of the upper surface of both sexes. — ♀♀ with an almost doubly

laticincta. broad band on the upper surface of the forewings are denominated ab. **laticincta** Fassl. — This species has hitherto been found (by Mr. A. H. FASSL) only in the western valley of the Aguaca Valley at an altitude of 1800 to 2200 m. The stay in this part of Colombia is especially injurious to health. — The discoverer gives the following statements about the early stages of this species: The egg of this prominent new species is about as large as an egg of *Pergesa elpenor*, light-green, diaphanous in yellowish, with fine longitudinal ribs. The larva, about the size of a grown-up larva of *Phalera bucephala*, is jet-black, naked, between the rings where the interior of the body shines through, dark carmine; head black, glossy; on each ring stands a girdle of about 6 snow-white pretended pointed, but not thorny spines. The larva lives on a poorly-leaved tree with hard, lanceolated foliage which it rolls up from outside towards inside and fastens it together loosely; only in the evening it comes out from this case and visits the nearest leaves for its meal. The pupa rests on the upper surface of a leaf being slightly drawn in in the shape of a boat and is spun on with the cremaster. Having the size of a pupa of *Limenitis populi*, it is of the well-known compact shape of the *Anaea*-pupae (lycaenid-like), but of an extremely conspicuous and singular colour and marking. On an ivory, white-shining ground it is symmetrically covered on the whole surface with jet-black dots and streaks, the detailed description of which would be too circumstantial; the wing-cases bear 5 long black wedge-shaped streaks based at the distal margin of the forewing. The pupa was apparently motionless and dead; after 6 weeks it yielded a ♂ of *A. rosae*. The size of the female larva and pupa may be about again as large as that of the male, according to the proportion of the size of the butterflies.

anassa. **A. anassa** Fldr. (= *ada* Btlr.) (120 A e) from Veragua and Colombia is known to us only in the male sex. This form seems to be very constant. It is not rare. — **aulica** *subsp. nov.* from Chiriqui is smaller, has broader and more coherent blue marking on the forewings; the margin of the hindwings is more greenish and proximally more sharply defined. The under surface is darker without any rust-brown marking at the inner angle, it is more profusely scaled in whitish and the brown bands on the hindwings are absent.

elara. **A. elara** G. and S. (120 C b, c) from Costa Rica is allied to the *anassa*, but still it shows such differences that it has to be considered a proper species; it resembles beneath *proserpina* (120 B e), whereas the upper surface resembles that of *ambrosia* (120 D a). On the under surface, however, *ambrosia* is less irrorated in white, of a more monotonous brown, especially on the hindwing. The ♀ of *elara* has tails like most of the following species; the species seems to be rather rare or very local.

lineata. **A. lineata** Salv. (= *vestina* Hew., *betillina* Hpffr.) (120 A e) from Bolivia, Peru and Ecuador is a species of very different sexes. The upper surface of the ♀ resembles that of a *schausiana* (120 C a), but it has a fainter blue decoration, especially on the hindwing and the apical part of the forewing is without spots. The under surface is marked like in *indigotica* (120 C b), of which it has also the faint hue of violet-pink which is spread across the under surface and is of an especially magnificent lustre in the sun.

vicinalis. **A. vicinalis** *spec. nov.* (120 A e) from South Brazil (Rio de Janeiro, Espiritu Santo, Santa Catharina) greatly resembles *lineata*, but those parts of the wings which are above green in *lineata*, are blue in *vicinalis*. Also the ♀♀ of the two species greatly resemble each other, but the under surface shows differences in both sexes. It is not impossible that *lineata* and *vicinalis* are subspecies of one and the same species.

magdalena. **A. magdalena** Weym. i. l. (120 b c) from East Colombia (Upper Rio Negro, 800 m) and Bolivia (Coroico, 1200 m, A. H. FASSL) is somewhat larger, but it has, with the exception of a small tooth at the third median vein of the hindwing which is hardly noticeable with the naked eye, the same shape of the wings and above almost the same marking as *drucei* (119 c), from which it is, however, as shown by the under surface, entirely different. The ♀ has lustrous light-blue basal halves of all the wings, bluish-white subapical spots

of the forewings and minute blue submarginal spots of the hindwings. The under surface is yellowish grey with the same markings as in the ♂, but without a lustre. — *elegans* *form. nov.* from East Colombia (Upper Rio Negro, 800 m, A. H. FASSL) is either a temporal form of *magdalena* or a proper species. It is much more imposing, the colour of the basal part of the forewing and of the greatest part of the hindwing is verdigris, of which colour all the larger subapical and submarginal spots are, too. The under surface is paler and the sub-basal band of the forewing is absent.

A. vestina *Hew.* from Ecuador not lying before us, according to the description of *magdalena* (120 C c), *vestina*, greatly resembles *magdalena* (120 C c) beneath, but the under surface is apparently browner. The upper surface of the forewings has a brown distal margin and the hindwings are red-brown with a broad bent green longitudinal band. Otherwise the upper surface agrees with *magdalena*.

A. forreri *G. and S.* (120 D e). Wings bluish-black; forewing at the basal area of a bright blue and with a blue subapical band from the costal margin as far as nearly to the border, as well as two confluent blue spots near the anal angle. Forewings very pointed, hindwings without tails. Beneath of a pale brown, irrorated with brown and grey, and especially in the anal angle of the forewings thus marbled, the forewings with a rusty-reddish hue in the discal area. ♀ like the ♂, but the hindwing with a spatulate tail. Mexico; Guatemala.

A. ambrosia *Druce* (120 D a) from Chiriqui seems to be very constant above and beneath, since the 4 ♂♂ lying before us do not exhibit any differences. The ♀ is unknown to us. It has on the hindwings bright metallic marginal spots standing between the chief veins, on the so-called intermediate veins.

Of *A. phoebe* *Druce* (120 C c) from Bolivia we reproduce a copy of the original figure. It seems to be the Bolivian representative of *ambrosia*. Above the blue margin of the forewings is broader and more uniformly connected with the subapical band and the internerval diffuse spots of the margin of the hindwing are united to an uninterrupted marginal band; the under surface is more chequered by being more traversed by light cloudy bands. It is, furthermore, of a quite different shape of the forewings and hindwings.

A. chorophila *spec. nov.* (120 D a) from East Colombia (Upper Rio Negro, 800 m) and Bolivia (Rio Songo, 750 m, A. H. FASSL). We cannot decide for certain whether the figured ♀ (from Bolivia) belongs to this species. It is beneath rather pale; brownish-grey with a faint greenish shine, on the forewings there runs from the apex towards the middle of the inner margin a series of obsolete blackish spots, a larger spot of the same colour at the end of the discocellular, somewhat brightened at the distal margin. The hindwings exhibit 2 obsolete broad dark oblique bands in the outer half of the wings, and between the tail and the inner angle some obsolete whitish-reddish spots.

A. polyxo *Druce* (120 D a, b) from the Upper Amazon, from Colombia, Peru, Bolivia, and according to DRUCE also from Rio is a very attractive species with a pretty and most characteristic under surface. The specimen before us from Bolivia (Coroico, 1200 m, A. H. FASSL) is beneath much lighter. The ♀ is unknown to us.

A. dia *S. and G.* ♂ wings greenish-black; the forewings at the base of a hardly stronger green colour, with a lustrous light-green curved subapical band of 3 to 5 mm breadth, being parted by the veins, reaching the anal angle, touching the margin in the posterior half of the border and being continued on the hindwings as the same marginal band and reaching their anal angle. Fringes white; hindwings without tails. The under surface is without markings, dark silky brown, the apex of the forewing and the margin of the hindwing grey, the dorsal area of the hindwing somewhat lighter. — The most closely allied with the Brazilian *polyxo*, differing, however, by the colouring of the upper surface of both wings, which are more green than blue. Panama. On the whole, the upper surface greatly resembles that of *A. florita* (120 B b), but instead of the spots before the apex there is a small oblique band with a more intense blue lustre than the blue basal part. — *A. divina* *Stgr.* i. l. (120 D b) from Bolivia (Coroico, 1200 m, A. H. FASSL) and the Upper Amazon resembles the preceding species above and beneath, though it is much more imposing. The magnificent upper surface is equalled by the entirely different under surface. The ♀ is unfortunately not known to us. It is very rare.

A. aureola *Bates* (120 D b) from Guatemala, Panama (Lino, 800 m) and Colombia (Muzo 400 to 800 m, A. H. FASSL) vies with *rosae* in the beauty of the under surface. In the ♀ being extraordinarily different, the broad white band of the upper surface of the forewing is noticed also beneath where it is distally broadened and blurred, on the whole yellowish and with single brown small spots; the hindwings exhibit 2 large and 3 small golden spots in the shape of a row being geniculated in the middle and turned towards the inner margin.

A. pasibula *Dbl. and Hew.* (120 D c ♀) occurs in two subspecies, the figured *fassli* *subsp. nov.* (120 D c) from East Colombia (Upper Rio Negro, 800 m) and Central Colombia (Cañon del Tolima, 1700 m, A. H. FASSL) with a bluish-black upper surface and reduced, more bluish marking and a somewhat darker under surface, and *pasibula* from West Colombia (Rio Aguaca Valley, 2000 m, A. H. FASSL, and Cauca Valley) with a greenish-

black upper surface and broader greenish markings, being more coherent on the forewings. The ♀ of *pasibula*, one of the most remarkable discoveries of Mr. A. H. FASSL, differs entirely from the ♂ in the marking of the upper surface, resembling much rather the ♂ of *falcata* in a conspicuous way. On the under surface it is considerably lighter than the ♂, reddish grey with the same markings as the ♂. — The ♂♂ are very common at their habitat, the ♀♀, however, just as rare. — The egg is, according to FASSL, but slightly larger than the egg of *Papilio machaon*, globular, greenish yellow and glossy.

falcata. **A. falcata** *Hpfjr.* (120 D c) from Peru (Chanchamayo) and recently also found in Ecuador, is the sole species of *Anaea* with a blue median band of the ♂♂. Most of the specimens have on the under surface of the hindwings a short straight band not like the figured specimen in which there is a distal continuation of this band. — The species is very rare.

xenocrates. **A. xenocrates** *Westw.* (120 D d) from Peru is a very rare species. The marking of the upper surface varies from green to bluish-grey and has a metallic lustre. The ♀ seems not yet to be known. According to STAUDINGER, the spots of the forewings are sometimes confluent and the metallic lustre may also be seen at the distal margin of the forewings.

elina. **A. elina** *Stgr.* (120 D d) from the Rio Dagua (West Colombia) is a very rare species of which but few specimens are known so far. — A specimen captured by Mr. A. H. FASSL in Muzo (400 to 800 m) is probably to be included in *miranda* *Warr.* (120 D d). This specimen has a very short small tooth—hardly noticeable with the naked eye — of the hindwings; the orange-yellow band of the forewings is distally rounded regularly, proximally and posteriorly rectilinear and anteriorly conspicuously narrower than posteriorly; the blue spot of the hindwings begins already before the posterior radial and reaches almost as far as to the submedian, being also broader and, therefore, much larger than in *elina*. The under surface is in the interior part of the wings much more scaled in black, in the median area of the forewings more yellow with some black scale-spots, and at the distal margin of the hindwings broad band-shaped dark greenish-grey with some black marginal spots of which the one at the small marginal tooth stands in a reddish halo.

anna. **A. anna** *Stgr.* (120 C d) is nearly allied to the preceding species, as is shown by the figures. It comes from the Upper Amazon and is known only in few specimens. The orange-yellow spot of the forewing of *elina* is in *anna* scarlet and the hindwing does not exhibit a circumscribed lustrous spot, but is covered in the disk with a duller blue reflection.

panariste. **A. panariste** *Hew.* (♀ = *bertha* *Druce*) (120 D d) from Colombia (Muzo, 400 to 800 m, A. H. FASSL) forms, together with the following 3 species, a special group owing to the shape of the wings and the more tender structure of the body. — *ludmilla* *Fassl* (103 f) from the Upper Rio Negro (800 m) forms a local form distinguished in the male sex by a broad rust-brown cover of the inner margin and of the neighbouring parts of the hindwings. The differences of the ♀ are to be seen from the figure. — The species is rare, particularly the ♀♀ belong to the greatest rarities.

jansoni. Whether **A. jansoni** *Salv.* (110 A d) from Nicaragua and from the Volcano Chiriqui has to be regarded as a proper species or as a subspecies of *panariste*, we cannot decide. The under surface is in both sexes somewhat darker than in *panariste*, but it does not exhibit a different marking. The ♂ shows the whole inner-marginal area of the hindwings light yellow, like in the ♂ of *panariste*.

excellens. **A. excellens** *Bates* (110 A d) from Guatemala is an extremely rare species. It resembles the following species *electra*, but it is pale brownish-yellow, on the veins striated in black. The apex of the forewing is slightly prolonged and the tail of the hindwing broad, but scarcely spatulate.

electra. **A. electra** *Westw.* (103 f) is distributed from Mexico to the Volcano of Chiriqui (2000 m). The ♂ is somewhat smaller, has more prolonged apices of the forewings and a darker distal margin, the under surface being darker than in the ♀. Rare.

callidryas. **A. callidryas** *Fldr.* (116 a) from Guatemala has a dull-green upper surface turning distally yellowish on the hindwings. Extremely rare; maybe because it is very difficult to distinguish the animal from among the pale yellow *Catopsilia* flying in great numbers in its patria.

opalina. **A. opalina** *Salv. and Godm.* (= *clara* *Stgr.*) (116 b) from the Volcano of Chiriqui is a rare species. The ♀ seems not yet to be known. — Presumably *callidryas* and *opalina* form only subspecies of one and the same species.

splendida. Note. This seems to us to be the place where the species *splendida* *Rothsch.* belongs, for which the author has founded a proper genus, *Anaeomorpha*. In my opinion the marks stated are insufficient for establishing a special genus. FRUHSTORFER likewise finds fault with this claim, but he inserts *splendida* in the *Prepona*. See further details on p. 553 and the figure table 103 e.

Additions

to the American Nymphalidae.

The American Nymphalidae s. s. are the most favourably classified into 4 subfamilies: 1. Acraeinae, 2. Heliconiinae, 3. Clothildinae, and 4. Nymphalinae. Thus they would have to be enumerated:

P. 358 Acraeinae (1. subfamily). P. 402 Clothildinae (3. subfamily).

P. 375 Heliconiinae (2. subfamily). P. 403 Nymphalinae (4. subfamily).

Heliconinae.

Mr. H. NEUSTETTER (Vienna) has subsequently denominated some additional Heliconies and, besides, most kindly sent me some corrections to the Chapter of *Heliconius*:

To *H. narcaeus* (p. 378) we must remark that the extreme specimens of *narcaeus* are all ♂♂, whereas the specimens denoted as ab. *connexa* with a broad black oblique band, distal to the yellow band of the forewing, are always ♀♀. The name ab. *connexa* is, therefore, to be eliminated. — The specimens exhibiting the band of *connexa* tempered or narrowly interrupted, may be ♂♂ as well as ♀♀. — ab. *phystia* occurs particularly in the ♂, but not exclusively, so that the name may remain. — ab. **brunnescens** Neust. from Rio de Janeiro *brunnescens*. exhibits the oblique band of the forewing and the median band of the hindwing dusted with red-brown.

To *H. ismenius* we must add: ab. **albofasciatus** Neust. differs by the confluency of the discal white spots of the forewings forming a broader median band; presumably from „Bogotá“, which is undoubtedly *albofasciatus*. a mistake.

To *numata* (p. 379) we must remark that RIFFARTH describes the ♀ of the form *guiensis* with such a broad median band of the hindwing that it is in the middle confluent with the costal margin, whereas in the ♂♂ of *numatus* it does not touch the costal margin. Guiana. — RIFFARTH denominates as **sincerus** a form like *sincerus*. *superioris* Btlr. in which the small yellow apical spots of the upper surface of the forewings are altogether absent, thus creating a resemblance with *hippola* Hew. (72 c) in which, however, the median oblique band of the hindwing is not yellow, but rusty brown like the ground-colour. Venezuela.

silvana: According to NEUSTETTER (i. l.), his *hopfferi* is not identical with *ethra* Hbn.; it corresponds, however, to our figure of *ethra* (72 c), but not to HUEBNER's figure which is identical with our figure of *silvana* (72 c). NEUSTETTER (i. l.) confines the name *silvana* to those specimens in which the yellowish spots in the distal part of the forewing are larger than in our figure of *silvana*, so that they almost touch each other; in typical *silvana* the hindwings are also more blackened before the middle of the border.

— **brasiliensis** Neust. is a form of *ethra* from Espiritu Santo in which the median band of the hindwings is brown, instead of light yellow, about the same difference as between *satis* and *narcaea*. *brasiliensis*.

As a synonym add to the form *silvana-diffusa*: (= *divisus* Kaye). Insert behind *mentor* (p. 380), before *numismaticus*:

— **orchamus** Weym. Similar to *mentor*, larger with entirely black unspotted apical part of the forewing; the basal half darker, more red-brown; on the hindwing the red-brown bands of the under surface extend only from the inner margin to the middle of the wings. Villavicencio. *orchamus*.

To *novatus* (p. 381) we have to add **artemis** Riff. which stands between typical *novatus* (72 f) and *lenaeus* *artemis*. (78 e). The darker dots of the row beyond the middle of the hindwings are enlarged to small spots, but scarcely half as large as those in *novatus*; the cone extended proximally between the median veins by the black distal margin, does not cohere with the apical black in *artemis*; the sulphur-yellow oblique band is yellower than in *novatus*, but not so extensively yellow as in *lenaeus*. Bolivia.

To the 18 forms enumerated of *aristiona* (p. 381) we have to add yet:

ab. **lepidus** Riff. from Ecuador which, however, flies also in Colombia with other forms of *aristiona*, *lepidus*. greatly resembles *euphrasius* (73 b); the forewings are almost exactly as in the latter, though lighter, brighter,

more like in *tarapotensis*, the yellow band of the forewing, at the costal margin broader than in *euphrasius*, the hindwings at the base and in the part of the median veins not so abundantly overshadowed. Ecuador. — *gracilis*. ab. **gracilis** Riff. from Peru, taken by FASSL also in Colombia, denotes specimens in which the median band of the hindwing is as narrow as in *tarapotensis*, though coherent; the marginal band only half as broad as in *lepidus*, coherent and rather sharply defined; from Peru.

confluens. *euphone*. *nephele*. *idalion* with entirely confluent bands are ab. **confluens** Neust., and in **euphone** a denomination (*confluxus* Neust. i. l.) is suggested for specimens in which the median and marginal bands of the hindwings are confluent; we denote them as ab. **nephele**, ab. nov.; the type in the Coll. NEUSTETTER originates from Medina in East Colombia.

hero. P. 283. — *H. ithaca hero* Weym. Here the apical row of white spots on the hindwings is continued as far as to the inner margin by a red-yellow submarginal band of about 3 mm width being traversed by the black veins; discovered by FASSL in Villavicencio. — ab. **cajetani** Neust. is distinguished by the bifurcation of the upper black median spot of the forewing and being united in cellule 4 with the black of the distal margin. From Colombia. — (In **vittatus** Neust., likewise from Colombia, there are no yellow spots in the apical part.)

Of *clara* (73 f), being closely allied to *anderida*, there exists a deviation in which the yellow oblique band of the forewing is torn up into 4 or 5 yellow, single spots by means of black embeddings (resp. enlargement of the spots round the cell-end); this is **zygia** Riff. from Colombia. — In **euchoius** Weym. the small, (in typical *clara*) light yellow spot before the inner angle (which is sometimes absent) is red-yellow, above the inner margin there is often a black stripe, the black marginal band of the hindwing is but half as broad as in *clara*, and the hindwing is traversed by a median band, like in typical *anderida*. Colombia. — **rebeli** Neust. resembles *H. holcophorus* (74 b), but the lemon-coloured spot in cellule 3, which in the ♂ is cut off from the sulphur-yellow median band (and which is altogether absent in the ♀ of *holcophorus*) is much larger, the black submedian band of the forewing is still broader, towards the base not so much pointed. On the hindwing the black median band, especially in the ♀, is much broader, on the under surface the white marginal spots are large. „Bogotá“ (?). — From *zuleika*, the form **dentata** Neust. was branched off, in which the black marginal band of the hindwing bends in between the veins into the hindwing in large dark arcs, so that the brown ground-colour extends towards the margin in long points on the veins. Panama.

Of *cydno hermogenes* (74 d) a ♀ has been discovered now, with only yellow spots of the forewings (NEUSTETTER). Whether this is the sole or typical ♀ of HEWITSON's *hermogenes*, or whether there are also ♂-like ♀♀ (i. e. with yellow and white spots of the forewings) is still uncertain. Further *cydno*-forms are: — *cydno cordula* Neust. and **mediocydno** Neust. The latter has the forewings like *cydno*, the hindwings of *epicydnides*. Colombia. Furthermore *punctata* Neust. — From *galanthus* (74 d) the form **exornata** Riff. is branched off, in which the forewings are like in *galanthus* itself, also with a just as broad white spot, whereas the white marginal spots of the hindwings are augmented. But at the same place with them fly all the transitions from our figure of *galanthus* (74 d) to such forms that have scarcely 1 small spot in the apex of the hindwing. — Of *alitheia* there occur specimens in which the band of the forewing is greatly reduced and dissolved into spots; all of these spots are situated behind or beneath the cell. Above, this reduction has made more progress than beneath where the band remains better preserved. This is **egregia** Riff. It occurs in typical *alitheia* with a yellow band of the forewing as well as in the form *haenschii* with a white band of the forewing. Both are found in Ecuador (Balzapamba) and were captured by RICH. HAENSCH. — **neustetteri** Riff. (= minor Neust.). Pygmean specimens, the forewings being only 30 mm long (instead of 70 as in *alitheia*). Black with a faint blue lustre, band of the forewing quite narrow, the marginal band of the hindwing only half as broad (3½ instead of 7 mm as in *alitheia*). Ecuador. — In an aberrative form of *gustavi*, ab. **flavomaculata** Weym. i. l., from the Rio Acuaca Valley in Colombia, there are yet remainders of the yellow *cydno*-band before the inner angle of the forewing.

Regarding *H. rubellias* Hew., Mr. NEUSTETTER writes:

„Here I beg to remark that the animal figured on t. 74 f as *rubellius* S. and K. is certainly no *rubellius* (I refer to the original figure); I also possess a typical *rubellius*. The forewings are like in *heurippa*, the hindwings exhibit a somewhat obsolete macular band right across the middle. The figured specimen agrees completely on the upper surface with *melpomene-karschi* Riff. I occasionally showed Mr. FASSL this form which entirely agrees with the figure. Mr. FASSL, however, told me that the said figured specimen has brown transverse bands on the under surface of the hindwings, as is the case in all the *cydno*-forms as well as in *rubellius*, it can, therefore, neither be *karschi* Riff., for the latter has no brown transverse bands, but is beneath exactly like *melpomene*. We have, consequently, a new form before us, which belongs to the group of *rubellius-wernickei* and for which I should like to propose the name of **seitzi** m. My *rubellius* originates from Venezuela.“

The following forms are to be added yet to *melpomene* (p. 385—6):

- *junbris* ab. **obscurata** Riff. differs from *cybele* Cr. (75 c) only by the sulphurous spots round the cell-end *obscurata*, being more prominently dusted in dark; especially the spot in the cell. From Berg en Dal in Surinam.

— *aglaope* ab. **cognata** Riff. from Pozzuzo in Peru is like *aglaope*, but the yellow band of the forewing is narrow- *cognata*, er, more irregular, sometimes the spots forming it separated. The red basal band on the hindwing broader, the rays more in the shape of a wedge than of a nail. Transitions to typical *aglaope* are not rare.

The form **timareta** Hew. quoted on p. 385 and 386, has in its typical form only a large irregular, sul- *timareta*, phurous cell-end-spot greatly varying in the shape, so that its outward appearance reminds us of a yellow, instead of white spotted *hecale* (73 a) without submarginal maculae; it comes from Ecuador; we may form an idea of its appearance by imagining all the red in its side-form *richardi* (76 b) being replaced by black, or by the absence of the red tornus-spot in the forewing and of the small yellow basal band in the hindwing, in *pluto* (76 a); it is approximated the most closely by *contigua* (p. 386) and *virgata* exhibiting only narrow radiate rays of the hindwings. — ab. **insolita** Riff. approximates *timareta* (p. 386), especially its form *contigua* from *insolita*, which it differs by the yellow spot of the forewing lying outside the cell and being at most accompanied by few small scales of yellow within the cell. HAENSCH brought it along from Ecuador.

— *vulcanus* (p. 387). The form **sticheli** Riff. is to be added yet. Resembles *cythera* Hew. According *sticheli*, to the figure by RIFFARTH in Deutsch. Ent. Zschr. 1907, t. 5 fig. 10, it is larger than *cythera*, the red band of the forewing is twice as broad, its inner margin only with traces of white, the costal marginal area of the hindwing broad whitish-grey in the ♂. It is described from Ecuador where it was collected in February (in the dry period).

xenoclea-microclea. Mr. NEUSTETTER writes about these species being only exteriorly similar, that the former may be taken to the *melpomene*-group. Of the other side-forms of *xenoclea* the very fine *iris* Riff. *iris*, is to be mentioned yet. It greatly approximates *aglaope*, but the yellow spot of the forewing is placed nearer to the apex and is of the same shape as the red-yellow spot at the same place in *plesseni*; it is also margined in red at its distal border, whereby a transition is formed between the *plesseni*-(*microclea*) forms and the group of *melpomene-aglaope*. From Ecuador.

In *niepelti* Riff. (see p. 385) which was in the meantime figured in the „Lepidoptera Niepeltiana“, the red spots of *xenoclea* are white, but the whole inner area of the forewing, from the inner spot to the base, is fiery-red, and in the cell of the hindwing there are the beginnings of short, small rays. — In *adonides* Niep. these red rays of the hindwing are continued beyond the lower cell-margin, and the distal spot of the forewing is bordered rosy on the outside; from Jibara in Ecuador. — **adonis** Riff., a form of *plesseni*, comes *adonis*, from Ecuador (Pastaza) and resembles *unimaculata* (75 f), but the spot of the forewing is white, and the cell of the forewing is, before its end, traversed by another white band-like spot. — In **rubicunda** Niep. the two *rubicunda*, spots are similarly placed, but they are red instead of white; **pura** Niep., on the contrary, exhibits them all *pura*, white, without a reddish margin or an interspersation of small yellow scales. All these aberrations occur in the same district (Pastaza). — *isolda* Niep., likewise from Jibara, stands between *niepelti* and *aglaope*, being difficult to explain, according to NEUSTETTER (i. l.). „The small dark spot in the cell of the forewing in *niepelti* is more prominent in *isolda* (especially the ♂) at the proximal border of the *plesseni*-spot, whereby the latter is more isolated . . . The white apical band-like spot in both sexes slightly margined in crimson within its proximal contour.“ (Niepelt). — *rubripicta* Niep. is an *isolda*-form in which the remaining white of the discal spot outside the cell, as well as the apical band-like spot being white in *isolda* are greatly strewn with red scales, like in *plesseni-rubicunda* Niep.; Canelos, Ecuador; based upon 1 ♂. — *gisela* Niep. approximates *adonides* and represents, according to Niepelt, a transitional form from *aglaope* to *plesseni-pura*. „The *plesseni*-spots of the forewings are here white on top, the discal spot at its proximal border strewn with black scales and bordered by a strong black spot. Hindwings like in *adonides*, as well as the under surface, the *plesseni*-spots of a pure white“ (NIEPELT). Based upon 1 ♀. From Jibara.

On the whole, *microclea* and *xenoclea* (76 c) are probably composed of a great number of transitional forms running parallel to each other like the forms described first, belonging, however, as already mentioned, to different groups. NEUSTETTER enumerates (i. l.) the following forms of *xenoclea*: *niepelti*, *plesseni*, *adonides*, *adonis*, *isolda*, *rubripicta*, *gisela*. All of these probably belong, like *xenoclea* itself, to the *melpomene*-type and are closely allied to its *aglaope*. — *microclea* belongs to quite a different type, and we quote yet the following forms of it: **feyeri** Niep. resembling *niepelti* by the fiery-red basal area of the forewing and the red rays of the hindwing, but the proximal spots situate before the cell-end of the forewing are already prominently tinged in red, and the half -band behind the cell-end exhibits a pinkish inner margin. According to a ♂ from Canelos in Ecuador. — **beata** Riff. resembles *aoede* (76 f) by the red-yellow tinge in the forewing and in the rays of *beata*, the hindwing; but instead of the yellow conglomeration round the cell-end we find here 2 reddish-white spots

rosacea. like in *notabilis*, i. e. the anterior spot is distally carmine. Ecuador. — *rosacea* Riff. stands between *notabiles* and *ochracea*, the discal spots being more confluent; no basal red on the forewing and no rays on the upper *ilia*. surface of the hindwing. Ecuador. — *ilia* Niep. forms a transition from *notabilis* to *estrelle* Bates (= *vestalis* Stgr.) and was, therefore, commented upon by us together with *feyeri*, *ochracea* and *rosacea* (p. 393). From the forms of the groups of *xenoclea* and *microclea* we might undoubtedly be able to form a similar series as the one collected by OBERTHUER for the *vesta*-group; but if we would denominate all these intermediate forms, *fraterna*. we would get to an immense amount. — On p. 385 a form *fraterna* Niep. was yet mentioned which we were unable to explain according to the description. In the meantime, a figure of it has been published in the fine small work „Lepidoptera Niepeltiana“, which we reproduce on table 110 A e.

H. hecuba. NEUSTETTER (i. l.) remarks to this species having been dealt with on p. 388, that the specimen *intermedia*. figured as *cassandra* on t. 76 e is not the typical *cassandra* itself, but its form *intermedia* Riff. representing already a transition to *hecuba*. Genuine *cassandra* are smaller, and the yellow macular band of the hindwing is narrower. This last mentioned form was taken in Ecuador together with *choarina*. —

H. aoede. The specimen figured t. 76 f. is not typical, but it belongs to the form *aoede faleria* Fruhst. In the typical *aoede* the lemon-coloured spots of the forewings are smaller, farther remote from each other so that the black space encompassed by them appears larger. (NEUSTETTER).

H. xanthoclea. The form newly discovered by FASSL was described by NEUSTETTER already before *fassli*. our number appeared and denominated *fassli*. This name, therefore, has the precedence.

H. xanthocles (p. 389). The second form quoted here is called *vala* (as it says also in the figure), not *vola*.

H. burneyi. According to NEUSTETTER (i. l.), the specimen of *huebneri* figured on t. 77 a is not typical, since the lemon-coloured oblique spot in the middle of the forewing is too large, the red rays of the hindwings, however, too narrow. This form represents a side-form from Mato Grosso which might be denominated specially.

petiverana and *hydara*. On p. 392 we have expressed our opinion that both forms are connected with each other by the close affinity of the *hydara*-form *colombina* with the *petiverana*-form *demophoon*; for completeness' sake we state here that, while STICHEL and RIFFARTH do not even mention the great resemblance of the two adjoining forms, Mr. NEUSTETTER writes „he cannot find any essential difference at all between *demophoon* and *colombina*“, although hundreds of specimens went through his hands. Thus, *colombina* would have to be eliminated as a synonym of *demophoon*, and the latter would have to be placed as a connecting link between *petiverana* and *hydara*.

ochracea. Exactly between *feyeri* and *lativitta* stands *ochracea* Riff. forming a connection between the *erato*- (*delila*)-group and the *microclea*-forms (NEUSTETTER i. l.). *ochracea* exhibits quite uniformly ochreous spotting. *fuliginosa*. Hereto belongs also *fuliginosa* Riff., differing from the typical *vesta* Cr. by the yellow macular group of the forewings being prominently dusted in black; Guiana.

helena. In the *phyllis*-like forms we must also mention the *cybelinus*-form *helena* Riff. being closely allied to *amalfreda* (p. 393), but the distal yellow spots of the forewings are sometimes altogether absent. From Bergendal in Surinam and from Obidos on the Amazon.

We must add to *cyrbia* (p. 392) that specimens with an extremely narrow red band of the forewing *bela*. were denominated *bela* Riff.

In *phyllis* the following forms are to be mentioned yet:

anaëtis. P. 394 the *anacreon*-form *anaëtis* Riff. forming the transition from the typical *anacreon* (78 e) to *artifex* Stichel, from the former of which it differs by the absence of the glaring-red basal area of the forewing and the thinner rays of the hindwing. South Bolivia.

differens. — ab. *differens* Riff. is a *phyllis* in which the red band of the forewing extends far into the cell; there is mostly also red noticeable between the lower median vein and the submedian. Peru and Bolivia.

sperata. — ab. *sperata* Riff. approximates *amata* Stgr., but the red spot of the forewing is inside tinged with an intense yellow. Hindwings with traces of the yellow anterior band. Bolivia, South Peru.

athene. — *athene* Neust. approximates *amata* Stgr. (p. 394) from Bolivia, but all the yellow is absent here, so that the hindwings are unicolorously blackish-brown with a red transverse band of the forewing; similar to *hydara* (p. 392), but the band is light red, not scarlet. Bolivia.

To *H. hortense* (p. 395) we must add yet Mexico as habitat.

flavopunctatus. *H. clysonimus*. Of this butterfly FASSL has published two more forms: *flavopunctatus* and *fischeri*; *fischeri*. both from Colombia.

H. telesiphe. Mr. NEUSTETTER says about it:

„Here a new form lies before me from the Coll. TOSSIZZA which I denominate **cretacea**. In this interesting *cretacea* form, the bands of the forewings as well as the band of the hindwings are of a pure white. In *telesiphe* and *sotericus* they are red on the forewings, in *telesiphe* white, in *sotericus* yellow on the hindwings. One specimen from French Guiana.“

In *Eueides lampeto* (p. 396) we must add to the form *fuliginosa*: ab. **pallida** Riff. from Pastaza (Ecuador). *pallida*. Forewing similar to *carbo*, but the ground-colour intensely brightened, outside almost whitish. Described according to 1 ♀.

To *Eueides isabella hübnéri* Mr. NEUSTETTER kindly sent us the following description of a new form: „*E. isab. hübn. var. olga* subsp. nov. differs from *hübneri* by a sulphurous transverse band being noticed on *olga*. the hindwing between the costal margin and the median band. The veins in it red-brown like the ground-colour. The subapical band consists of somewhat smaller spots than in *hübneri* Mén. Otherwise there are no differences. One ♂ from Chanchamayo (Peru).“

Nymphalinae.

1. Genus: *Euptoieta* (p. 404).

P. 101 for *bogolana poaria* read *poasina*; the same correction is to be made on table 86 f (last figure).

3. Genus: *Melitaea* (p. 431—434).

By the kindness of Mr. DYAR and Mr. SKINNER in America, and the investigations of Mr. BARNES and Mr. SYNDER who were kind enough to control the models, I subsequently came into the possession of a number of authentic specimens figured on t. 103 b and c.

M. quino Behr. The ♂ is easier to distinguish than the ♀ greatly resembling *chalcedon*; its upper surface is darker, with smaller spots and with red-brown macular chains between the yellow ones. — We figure t. 103 b both surfaces of the ♂ according to a specimen kindly sent by Mr. DYAR.

M. beani Skinn. The figure on t. 103 has been procured from Mr. DYAR according to a specimen of *beani*. his collection. It distinctly exhibits the differences, especially regarding the position of the yellow macular bands. The form is, especially by the reduction of the red-brown, considerably darker than *anicia*. — **brucei** *brucei*. Edw. from Colorado, is a still darker form in which the upper and under surfaces are overshadowed by a sooty black. Seems to be very rare. The figure was done according to a specimen which Mr. BARNES kindly controlled.

M. bollii Edw. (103) from Arizona and **definita** Aaron (103) from Texas we figure according to kindly *bollii*. sent specimens of which that of *bollii* was controlled by Mr. N. BEYER, of *definita* by Mr. W. BARNES. Both *definita*. approximate more *leanira* than *thekla*, but they distinctly differ from the former: In *bollii* the lighter median band of the hindwing is very regular, towards the inner margin hardly narrowed, not acuminate; *definita* resembling a darkened *wrighti* (88 f) above, has a greatly shifting under surface of the hindwings which is traversed very much by black.

M. maria Skinn. which we only briefly mentioned p. 434, probably most closely approximates *brucei*, *maria*. but the macular chains above are somewhat differently arranged, and on the under surface of the hindwings we are at once struck by the difference of the submarginal, light-yellow helmet-spots being more than twice as broad in *maria*. Mr. A. J. SNYDER had the kindness to control a specimen we figure on t. 103.

Of **M. gillei** Barnes we figure t. 103 both surfaces of the type which Mr. BARNES had painted for us. *gillei*. The animal originates from the Yellowstone Park and is immediately recognizable by a strange obliteration and the uniformity of the dull red-brown distal band. Mr. DYAR places it between *quino* and *nubigena*.

M. neumogeni Skinn., reproduced on t. 103 according to a specimen in the Coll. A. KOEBELE original- *neumogeni*. ting from the Argus Mountains in California, has, therefore, a wider distribution and reminds us in the colouring of the upper surface of *palla* (88). (A. SEITZ.)

4. Genus: *Phyciodes*.

P. 443 *Ph. archesilca*: *c. archesilca*.

P. 448, line 23 from above, for *Ph. philyra* read *P. phillyra*.

Phyciodes ildica heliconiformis Strand from Ecuador (Macas) differs from *fassli* by the entire absence *heliconiformis*. of the red-yellow colouring of the hindwings. (J. RÖBER.)

Phyciodes callonia callonioides Strand from South East Peru differs by the reduction of the black mar- *callonioides*. king being dissolved on the hindwings into spots except the costal marginal stripe. (J. RÖBER.)

5. Genus: *Chlosyne* (p. 451).

eumeda. In *Chlos. eumeda* G. and S. from Mexico the yellow band is still broader than in *marina* and *fasciata*,
dryope. and the red spots of the hindwings are joined to a broad scarlet band. — **dryope**, likewise from Mexico, forms the transition to it.

endeis. P. 452, *Chlos. marina*: **endeis** G. and S. are *marina*-♂♂ in which the spots of the forewings flow together
hylaeus. to a broad yellowish-white band. — In the similar form **hylaeus** G. and S. the whitish-yellow band is likewise rather broad and besides strongly curved, especially on the forewing. From Durango City (Mexico).

9. Genus: *Polygonia*.

P. 456 *P. gracilis*: the name of the Asiatic *P. agnicula* is misprinted into *agricula*.

10. Genus: *Vanessa* F.

P. 451, line 21 from below, for *cyonomelas* read: *V. cyanomelas*.

11. Genus: *Pyrameis* F.

P. 451, line 21 from above, for *fulva* read: *fulvia*.

12. Genus: *Hypanartia* (p. 460).

lindigii. As **lindigii** Fldr. a somewhat aberrative ♀ of *kefersteini* was figured on t. 44 c. We figure on t. 103 d the genuine *lindigii* according to a couple captured by Mr. A. H. FÄSSL. We notice immediately the characteristic difference in the wing-contour, especially of the hindwing. Another difference is conspicuous, though not distinctly noticeable, on the figure: the spots of the forewings are in *kefersteini* scaled in white, but in *lindigii* glassy, without any scales at all, and transparent. Consequently, *lindigii* approximates greatly *kefersteini*, though it is no form of it.

14. Genus: *Napeocles* (p. 462).

dumnorix. The large form figured by us as *jucunda* has been separated by FRUHSTORFER as **N. dumnorix**, confining the name *jucunda* to the more northern specimens occurring for instance in Colombia. They are smaller and beneath of a lighter grey, the blue median band has a more distinct white centre.

18. Genus: *Vila* (p. 466).

For *caecilia* Cr. read: *caecilia* Fldr.

20 Genus: *Megalura* (p. 468).

For *merops* Bsd. read: *merops* Bch.

For *harmonia* Dbl. and Hew. read: *harmonia* Klug.

26. Genus: *Megistanis* (p. 472).

New material sent to me by Mr. A. H. FÄSSL shows that we are wrong in the supposition that the normal ♀ of *baeotus* has a yellow band of the upper surface. It has, however, a blue band and almost exactly the same colouring and marking as the ♂, only it is larger. Nor is *deucalion* different in the sexes, ♂ as well as ♀ with yellow bands. Both are, therefore, probably good species.

41. Genus: *Eunica* (p. 484).

Line 19 from below for *caerulea* read: *caerulea* G. and S.

43. Genus: *Catagramma* (p. 593—6).

aerias. *Catagramma aerias* S. and G. is the Panama-representative of *salamis*, above the same, but beneath the yellow band does not reach to the base of the forewing. Differing from *lyca* by a larger blue gloss of the hindwings. Not rare.

rutila. **C. rutila** S. and G.; the ♀ exhibits a larger red area of the forewing than typical *patelina*. — Mexico.

casta. **C. casta** Salv. from Oaxaca. Described according to 1 specimen from an altitude of 3000 ft.; probably a form of *patelina* with which it agrees in the under surface of the hindwings, though the lines are more delicate there. (A. SEITZ.)

zyxina. *C. texa* **zyxina** Fruhst. from Venezuela differs from the Colombian form by a twice as broad red-yellow preapical spot of the forewing and a narrower red zone of the hindwing. Under surface considerably more different by a narrowed subapical band of the forewings which exhibit besides a considerably expanded black median area. The yellowish antemarginal band of the hindwings is scarcely half as broad as in *texa*, the black

heroica. submarginal band more extensive and bordered in a darker blue. — **heroica** Fruhst. from South Mexico is in the male recognizable by larger black spots and smaller yellow bands and stripes. — **maximilla** Fruhst. from Espiritu Santo differs from *texa* and *zyxina* by a smaller shape, as well as by darker and above extraordinarily reduced red areas. The under surface might easily be mistaken with that of *titania*, but the black basal spot of the forewing extends farther into the cellule.

C. codomannus **otheres** *Fruhst.* from Colombia (presumably Muzo) deviates in the male by a shorter *otheres*, red area of the hindwings. Under surface extremely different: the hindwings preponderantly yellow with very narrow black spots and bands prominently adorned with light blue. The marking of the hindwings with its isolated eye-spots resembles much more *cynosura*. The yellow subapical spot of the forewings is more extensive than in *codomannus* from Obidos and Brazil.

C. eunomia **triteia** *Fruhst.* from Ecuador (Hacienda Anna-Maria, Quevido) differs from *eunomia triteia*, by the narrowed red area of the forewings being confined to a vertical band of a finger's breadth, because a black basal zone extends as far as to the middle of the cellule.

C. cynosura **neocles** *Fruhst.* from Ecuador differs by reduced red spotting at the wing-base of the *neocles*, hindwings. The preapical spots of the forewings smaller. Under surface easily recognizable by extremely reduced black bands and spots of the hindwings.

C. sorana **menesa** *Fruhst.* from Bahia is in the male considerably smaller than specimens from Para- *menesa*, guay and Southern Brazil. All the red bands and spots are narrowed. The under surface of the hindwings is duller greyish-black with almost white zigzag-lines. The eye-spots are separated from each other by uncommonly broad yellow bands. Seems to be the product of a dry region.

C. pygas **ophis** *Fruhst.* from Bahia is in the male larger than specimens from Espiritu Santo and *ophis*, Rio Grande do Sul. The blue submarginal spotting of the hindwings is almost entirely extinct, but the red area of the forewings especially beyond the cell is considerably larger. The under surface has a narrower black apical zone of the forewings and a considerably larger blue spot of the forewings. — **agrianes** *Fruhst.* from Rio *agrianes*, Grande do Sul differs in the male by the almost entire effacement of the light-blue marking on the upper surface of the forewings and the reduced white dotting of the forewings. Beneath, the deviation is still more conspicuous by the entire discoloration of the hindwings. They appear almost sulphurous with extremely blurred black stripes and reduced eye-spots which, however, are, considering their small size, extraordinarily ornamented in light-blue. — **paragrias** *Fruhst.* from Bahia deviates from all the *pygas*-races by an extensive though dull *paragrias*, dark bluish-violet reflection on the upper surface of the hindwings, so that a resemblance has been created with *cyllene*, as depicted on t. 102 A a. By the distribution of colours of the upper surface, a certain agreement in the colours has been attained with *Agrias claudianus* *Stgr.* The under surface forms an intermediary between *pygas* and *pygas agriades*, but the upper surface of the hindwings is of a more intense yellow and the blue spots are more prominent and lighter than even in *pygas ophis*. The specimens are remarkably large, whereby they approximate *ophis*. — **C. cyllene** (p. 495) *forma oberthüri* *Niep.* from Ecuador is an aberrative form differ- *cyllene*, *oberthüri*, ring only by the under surface where all the blue is darker and more expanded, the white pupils being absent, the yellow subapical band narrower, the blue apical band, however, broader, the yellow distal margin of the hindwings broader, the black submarginal band without blue lunae, but at the proximal border there are seven closely adjoining spots being encircled by black arcs and reaching as far as to the black-framed median markings, the inner angle exhibits a blue, black-shaded spot.

C. claudinides *Fruhst.* from Paraguay greatly resembles above *cyllene* (102 A a). The red area of *claudinides*, the forewings is considerably more reduced than in *cyllene*. The under surface of the hindwings is more faded grey, the two submarginal bands are likewise faded and without blue spots. — **eucale** *Fruhst.* from Santa Catha- *eucale*, rina (Blumenau) differs from the forms of more northern patriae by the expansion of the black inner margin of the forewings, which sometimes fills up the whole basal third of the cellule. The under surface is much lighter than in *agrianes*, particularly the light yellow preapical band of the forewings is nearly always twice as broad as in *agrianes* and *pygas*. The black submarginal lines of the hindwings effaced. The eyespot-markings of the hindwings are often surrounded only by a very narrow black ring.

C. hydaspes **delmas** *Fruhst.* from Paraguay is distinguished from the form from Espiritu Santo and *delmas*, Bahia by a narrowed band of the forewings and the considerably reduced blue-iridescent area of the hindwings. The preapical band of the under surface of the forewings is nearly twice as broad.

C. peristera **delna** *Fruhst.* from Peru (Chanchamayo) is in the male above just as extensively carmine *delna*, as the ♀ of *peristera*. The under surface also approximates that of the ♀ of *peristera*.

C. atacama **manova** *Fruhst.* from Colombia differs from the Ecuador-specimens by the much narrower *manova*, yellow zone of the forewings and the blue spot of the hindwings reaching only to the cell-apex. The under surface is characterized by a very extensive black submarginal area of the forewings and the widened black longitudinal bands of the forewings. — **carnania** *Fruhst.* from Peru has a but slightly narrower orange median *carnania*, area than *atacama*. The magnificent spot of the hindwings, however, is still less expanded than in *manova*. The under surface of the hindwings exhibits more extensive black longitudinal stripes than the Colombian race, so that the yellow bands are still more strangulated than in *atacama* from Ecuador and Colombia. — **ronata** *Fruhst.* from Venezuela exhibits the orange band of the forewings still more incised and narrower than *ronata*.

in *manova*. The blue spot of the hindwings is shorter, broader and darker. The yellow preapical band of the under surface of the forewings is more undulate, narrower than in Colombian specimens, the two antemarginal bands of the hindwings, however, are broader. J. RÖBER.

45. Genus: *Callicore* (p. 501).

doris. As ***Callitaenia doris*** a *Callicore* was described by FELDER in 1861, which was considered by the author to be a proper genus and formed KIRBY's genus *Mesotaenia*. Appearance and size agree with *Callicore*, but the under surface of the hindwings exhibits dots instead of the cipher. Wings above black, the forewings with a blue basal stripe and a blue oblique discal band, on the hindwings a blue submarginal band. Beneath, all the stripes (2 before the margin and one at it) are black, the forewings in the basal half hemochrome, then a narrow blue band and the apical border silvery white, hindwings silvery white with a red costal margin, with 2 black stripes and 6 black dots. Ecuador. — The animal does not lie before me, so that I cannot give any further details about it.

asteria. ***C. asteria*** G. and S. as above *astala*, but the blue spot in the forewing is absent, but the small white apical spot is much larger; beneath, the forewing is much less red, the hindwing towards the base lighter; only 1 ♂ from Mexico (aberration?).

P. 509: Place the number I. before the heading **Limenitidi**.

49. Genus: *Adelpha* (p. 510).

To *A. melunthe* (p. 512) must be added that the form *melanippe* G. and S. is figured t. 109 d.

A. ximene Fldr. is figured t. 109 a.

A. justina Fldr.: cf. t. 109 a.

In numbering the genera place:

P. 545: 55. Genus *Chlorippe* (instead of 53).

„ 549: 56. „ *Asterocampa* (instead of 54).

„ 550: 57. „ *Prepona* (instead of 55).

„ 566: 58. „ *Agrias* (instead of 56).

A. SEITZ.

62. Genus: *Zaretas* (p. 578).

pseuditys. P. 578, 579. — H. FRUHSTORFER distinguishes yet the following *zaretas*-forms: *zaretas isidora* ***pseuditys*** Fruhst. from Espiritu Santo. ♂ forewings nearly rectilinear, apex scarcely prominent. Ground-colour darker than in any other *Zaretas* known hitherto, peculiarly dull and deep red-brown with a somewhat darker tinge at the apex of all the wings. Beneath about as in *cacica* Stgr., but much more intensely red-brown and more densely speckled in black. On the under surface of the hindwings the transverse lines are absent, which in the other *Zaretas* start from the median stripes and bear a striking resemblance to the lateral ribs of a dry leaf.

anzuletta. ♀ somewhat larger than the ♀ of *itys*, the distal border of the hindwings more extensively black. — ***anzuletta*** Fruhst. from Mexico is the least marked local form known hitherto. Habitus larger than of *ellops*, forewings almost without any spotting, hindwings only with a thin submarginal band. ♀ light yellow with a double, red-brown submarginal band of the hindwings and a red-brown, though single and strongly angled band of the forewings. — *russeus* ♀-fa. ***bisaltina*** Fruhst. Like *isidora*, but the cellular spot is merged into the distal border by a band-like continuation. Resembles *Doleschallia bisaltide* Cr. from Java. — *russeus* ♀-fa. ***foliaca*** Fruhst. probably belongs to a dry period form. Forewings of a monotonous yellowish-brown, without a transcellular brightening. Hindwings strongly undulated, all the markings obsolete reddish instead of black. Surinam, Obidos, Lower Amazon. — ***vulpecula*** Fruhst. from Bahia. Smaller than the preceding ones, agreeing in the wing-contour with *vulpina*. Colouring of the wings considerably lighter, only quite blurred reddish apical tinge and entirely reduced red spots and markings. Beneath faded light yellowish-brown, hardly speckled in black. ♀ pale yellow, forewings with some isolated spots at the cell-end and a thin median band being scarcely noticeably continued on the hindwing. Dry period form. — ***vulpina*** Fruhst. from Paraguay has come to Europe in great numbers some years ago. ♂ somewhat lighter than *itys* Cr. from Surinam, apical border of all the wings, however, brownish-violet instead of jet-black and thereby resembling the Brazilian races. The other markings are very much faded. Under surface lighter than in the ♂♂ of *itys* and in *isidora* Cr., darker than in the Brazilian forms. The ♀ exhibits the marks of a dry period; almost light yellow with a broad reddish-violet apical cover and fine red-brown bands on all the wings. Beneath but slightly speckled in red-brown. Margin of the wings strongly undulated like in other forms of the dry period. J. RÖBER.

Alphabetical List

with reference to the original descriptions of the forms of the American *Nymphalidae*.

* signifies that the form is also figured at the place cited.

- abana Act. *Hew. Exot. Butt.* 4 (Acr. 6).*
- abas Phyc. *Hew. Exot. Butt.* 3 (Eresia 5).*
- aberrans Phyc. *Röb. Seitz, Macrolep. V.* p. 418.*
- abia Ad. *Hew. Ann. Mag. Nat. Hist.* (2) 6, p. 436.*
- abnormis Mel. *W. R. Butt. West-Coast.**
- abrupta Phyc. *Röb., Seitz, Macrolep. V.* p. 439.*
- abulonia Prep. *Fruhst., Seitz, Macrolep. V.* p. 562.
- abyla Ad. *Hew. Ann. Mag. Nat. Hist.* (2) 6, p. 437.*
- abylina Ad. *Fruhst., Seitz, Macrolep. V.* p. 521.
- acacafes Eu. *Hew. Equat. Lep.*, p. 22.
- acastus Mel. *Edw. Trans. Am. Ent. Soc.*, 5, p. 16.
- acaudata An. *Röb., Seitz, Macrolep. V.* p. 586.*
- acea Chlor. *Fldr. Reise Novara, Lep.*, p. 435.*
- acesas Phyc. *Hew. Exot. Butt.* 3 (Eresia A.).*
- acesta Calliz. *L. Mus. Ulric.*, p. 298.
- aceta Phyc. *Hew. Exot. Butt.* 3 (Eresia A.).*
- acheronta Coea *F. System. Entom.*, p. 501.
- acipha Act. *Hew. Exot. Butt.* 2 (Acr. 2)*.
- aeontius Caton. *L. Mant.*, p. 537.
- acraeina Phyc. *Hew. Exot. Butt.* 3 (Eresia 3.).*
- actinotina Phyc. *Röb., Seitz, Macrolep. V.* p. 449.*
- adamsi Callithea *Lathy, Entomolog.* 36, p. 105.*
- adelina Chlos. *Stgr. Verh. Zool.-Bot. Ges. Wien* 1875, p. 102.
- adiante Arg. *Boisd. Lep. Calif.*, p. 61.
- adiaste Arg. *Edw. Butt. North Amer.* 3.*
- adjutrix Chlos. *Seudd. Bull. Buffalo Soc.* 2, p. 269.
- adonis Hel. *Riff. Deutsche Ent. Ztschr.* 1907, S. 507.*
- adoxia Act. *Jord. Novit. Zool.* 17, p. 465.
- adrasta Ep. *Hew. Exot. Butt.* (Epiph. 2).*
- adriana Act. *Hpf. Stett. Zg.* 35, S. 345.
- adstrieta Ad. *Fruhst., Seitz, Macrolep. V.* p. 518.
- adusta Eu. *Stich. Berl. Ent. Ztschr.* 48, p. 11.
- aea Ad. *Fldr. Reise Novara, Lep.* p. 416.
- aecelus Megist. *F. Syst. Ent.* p. 522.
- aedon Agr. *Hew. Proc. Zool. Soc. Lond.* 1848, p. 46.
- aegina Ag. *Fruhst., Seitz, Macrolep. V.* p. 544.
- aegina Cat. *Fldr. Wien. Ent. Mon.* 5, p. 107.
- aegon Phyc. *F. Spec. Ins.* 2, p. 130.
- aelia Prep. *Godm. & Salv. Ann. Mag. Nat. Hist.* (6), p. 355.
- aenaria Pyrr. *Fruhst. Stett. Zg.* 1908, p. 37.
- aenea Per. *Röb., Seitz, Macrolep. V.* p. 497.
- aeolia Ad. *Fldr. Reise Novara, Lep.*, 3, p. 419.
- aequatorialis Phyc. *Röb., Seitz, Macrolep. V.* p. 442.*
- aequatorialis Prot. *Bltr. Proc. Zool. Soc. Lond.* 1875, p. 35.*
- aequatorialis Pyrr. *Wgm. Sitz.-Ber. Acad. Münch.* 1870, p. 171.
- aereta Act. *Jord. Entomologist* 1913, Nr. 2.
- aërotome Hel. *Fldr. Wien. Ent. Mon.* 6, p. 79.
- aeschlion Eun. *Fruhst. Soc. Entom.* 22, p. 33.
- aethalia Ad. *Fldr. Reise Novara, Lep.* 3, p. 419.
- agaeles Dyn. *Dalm. Anal. Entom.*, p. 47.
- aganisa Did. *Bsd. Spec. Gén.* 1, pl. 9.*
- agatha Tem. *F. Mant. Ins.* 2, p. 51.
- agathina Chlor. *Cr. Pap. Exot.* 2, pl. 167.*
- agathis Chlor. *Godt. Encycl. Méthod.* 9, p. 377.
- agathus Prep. *Fruhst., Seitz, Macrolep. V.* p. 560.
- agele Eun. *Seitz, Macrolep. V.* p. 487.*
- agilla Ad. *Fruhst. Ent. Ztschr.* 21, p. 172.
- aglaope Hel. *Fldr. Wien. Ent. Mon.* 6, p. 79.
- aglaopeia Hel. *Stgr. Iris* 9, p. 305.
- aglaura Ness. *Dbl. & Hew. Gen. Diurn. Lep.*, pl. 29.*
- agnata Hel. *Stich. Gen. Ins. Nymph. Hel.* p. 46.
- agnes Dyn. *Röb., Seitz, Macrolep. V.* p. 506.*
- aidea An. *Guer. Ic. Règne Anim. Ins.*, p. 478.
- aides Eu. *Stich. Berl. Ent. Ztschr.* 48, p. 30.
- alala Ad. *Hew. Ann. Mag. Nat. Hist.* 1847 (20), p. 261.*
- alalia Act. *Fldr. Wien. Ent. Mon.* 4, p. 105.
- alaskensis Arg. *Holl. Entomol. News* 11, p. 383.
- alaskensis Arg. *Lehm., Seitz, Macrolep. V.* p. 424.*
- alba Hel. *Riff. Berl. Ent. Ztschr.* 45, p. 208.
- alberta An. *Drc. Proc. Zool. Soc. Lond.* 1876, p. 234.*
- alberta Arg. *Edw. Canad. Ent.* 12, p. 113.
- albescens Phyc. *Röb., Seitz, Macrolep. V.* p. 444.*
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8. Family: Erycinidae.

As many other lepidopterologists have done before, we likewise comprise here all those day-butterflies the ♂♂ of which have 4 fully-developed gressorial feet, the ♀♀ 6. On the other hand we might divide the species collected here into several families according to the habitus, veins, larval shape etc.; especially the *Libytheins* might be regarded as a proper species (cf. Vol. I, p. 251). But since the families of the day-butterflies are, moreover, not equivalent to each other, the *Nymphalidae* s. s. for instance differing among each other much more than e. g. the Pierids or Satyrids, our method of dealing with them is probably justified.

Indeed, the neoarctic *Erycinidae* exhibit the very greatest difference in their shape, colours, the structure of their body, their wing-contour and so on, and only a small part of them can be explained as mimetic suggestions of co-inhabitants of the same country. Beside species with entirely normal contours such as some *Emesis* and *Nymphidium*, there occur the most peculiar distortions such as uncommonly long tails of the hindwings (in *Zeonia Diorina*) deviating in *Syrmatia* even to such an extent that almost the whole hindwing turns into a stripe-like tail-appendage of the forewing; in *Helicopsis* and *Sarota* there are tail-appendages at almost all the ends of the veins of the hindwings, and in *Methonella* we notice in the ♀ the beginnings of such appendages in the shape of long teeth. Angulations and bends may be found almost at all places of the margin of the wings; thus *Symmachia* exhibits a geniculate curve in the middle of the costal margin of the forewings; *Euselasia angulata* such a bend below the middle of the distal margin; *Eusel. eugeon* and *Thucydides* have a point at the anal angle of the hindwings. The distal margin of the wings may describe a semi-circle, as for instance in *Zelotaea peltex*, but it may be also cut straight as if with scissors, as in *Euselasia lysias*. Sometimes the wing-contour of a species varies according to the season and locality to such an extent that one imagines to see specimens of different species. Sickie-shapes may occur in the fore- and hindwings and be the peculiarity of a genus or species, or even be individual (in its graduation). Like the wings, also the legs may be changed by appendages, and many species of the genus *Anteros*, when settling down on leaves, seem to rest on stuffed knobs, on account of the enormous growth of hair on their legs.

Almost all the *Erycinidae* are rather small butterflies, mostly of the size of *hycaena*, many being very small, such as some *Charis* and *Mesene*; the strongest development of the body (though not of the wings) is noticed in the ♀ of the rare *Mimocastnia rothschildi* where the stout body, similar as in night-butterflies, may be due to the endeavour of nature to make it appear like a stout *Castnia*; really large species with an expanse of wings of more than 6 to 7 cm do not occur among the *Erycinidae* in America.

By their colouring and gloss they are superior to any other group of day-butterflies, and by their metal gloss which in some species is unparalleled, the *Erycinidae* form a parallel to the humming-bird among the birds and the Syntomids among the night-butterflies. The mere blue lustre of some *Euselasia* and *Mesosemia* excels that of the other blue day-butterflies with the sole exception of certain *Morpho*; but quite unequalled is the gold and bronze lustre of some *Euselasia*. Thus, for instance, *Eusel. praeclara* which on being looked at in the shade or in front of the origin of the light is a moderately fine butterfly resembling the ♂ of *Chrysophanus virgaureae*, changes its colour altogether if the eye is brought between the sun and if the butterfly is held in its glare and is turned round the longitudinal axis of the pin. At first one sector of the forewing, from the costa to the median, shines golden green. Then the forewing turns dark blue-violet between the median and the inner margin, while on turning further round the forewing assumes a golden yellow tint like polished up bronze and the veins are covered with a radiant, hemochrome reflection, hereafter the surface of both wings turns golden, while the distal margin exhibits a verdigris gleam. On turning still further, both wings, except the costal and proximal margins of the hindwings assume a golden-green lustre, the forewings exhibiting a reddish-golden sector. The only analogous sight known to me in the animal kingdom, is the most closely allied species, *Euselasia opalescens*. This butterfly pretty much resembles the former in its habitus and its dull red-yellow colouring of the wings, but the metal lustre is, on the whole, brass-yellow being relieved by a hemochrome, silvery and bronze-golden lustre when one gradually turns the butterfly round. We must remark that this lustre of *Euselasia* has nothing in common with the colouring and the lustre of the Uraniids (*Chrysidia*, *Urania*), nor with the gloss of the *Morpho* being merely reflecting but not changing its colour, and that only a slight degree is found in some *Nymphalidae* (*Eunica*), changing between a dull blue and a green metal gloss. This form of reflection must, therefore, be added to the numerous characteristics by which the members of the family *Erycinidae* are distinguished from all the other butterflies known.

An analogous characteristic feature is found in the *Helicopsis* being nearly allied to the *Euselasia*, for they exhibit metal-drops on the under surface of the hindwings. On being turned towards the light, they appear more golden; but on bringing the eye between the origin of the light and the butterfly, they are silvery. These metal-spots are also most peculiar by protruding plastically from the surface of the wings, therefore in relieve, as if pressed out. The appearance of plastic markings on the wing of a butterfly (as a bas-relief) is extremely rare, and I only remember the case of the Australian gigantic Hepialid *Zelotypia stacyi* (Vol. X,

t. 78 a, b) in which the eye-spot of the forewing projects beyond the surface of the wing in order to be of a more deceptive effect in the snake's head as represented by the resting *Zelotypia*.

On regarding the colours we are at first struck by the number of extremely one-coloured species. Unicolorously hemochrome butterflies, like *Mesene simplex* are otherwise very rare among all butterflies known, just like the *Mesosemia croesus* being on both surfaces sky-blue, are scarcely equalled by any other butterflies. The chief type of colouring in the butterflies of Tropical America — glaringly coloured oblique bands on a jet-black ground —, however, is also predominant in the *Erycinidae* and particularly strongly developed in the genera with the most numerous species, such as *Euselasia*, *Lymnas*, *Siseme*, *Themone*, *Mesosemia*, furthermore, in *Panara*, *Barbicornis* etc.

Apart from the *Libytheinae*, the neartic *Erycinidae* are composed of 2 large groups, the *Eurygoninae* or *Euselasiinae*, and the real *Erycininae*, the latter group of which, however, contains so heterogeneous genera that a second subdivision might be possible which, however, we may leave out here. The number of forms of the single subfamilies is proportionately about so that the palaearctic *Erycinidae* which we will briefly call *Nemeobiinae* contain, just like the *Eurygoninae*, ten times as many as the *Libytheinae*, but only the tenth part of the *Erycininae*. The latter are divided into a very great number of genera which has recently increased beyond 100; of these, however, there are so many genera with but one species that many of them might prove dispensable, if one considers that heterogeneity even of nearly allied forms is a specialty of the family of *Erycinidae*.

Among the markings by which this family is particularly distinguished, there is beside the mentioned oblique bands often a central eye-spot of the forewing, as in more than one hundred *Mesosemia* and *Eurybia*. A characteristic mark very rarely found among the day-butterflies are glaringly coloured radiary rays denoting from the wing-base any kind of a sector in the fore- or hindwing, or running along the proximal or costal margin. *Euselasia sabina* Cr., which is probably nothing else but the hitherto unknown ♂ of *Eus. gelon*, exhibits this glaringly coloured ray of the costal margin on the hindwing, just like some *Symmachia*, *Xenandra*, *Calliona* etc.; in *Calliona latona*, *Charis ignipictus* and so on it runs along the inner margin, in certain *Euselasia*, such as *E. hieronymi*, *euphaes*, *sergia*, *violetta*, right across the hindwing, sometimes in red, sometimes in blue. A very strange under surface is to be noticed in the *Anteros*: small framed, metallic splashes on a sulphurous ground, and as another peculiarity a beard at the anal angle of the hindwings. The reason why the under surface is mostly not adapted to the surroundings, is that it is not visible when the animal is at rest. I shall revert yet to this peculiarity.

The geographical distribution of the American *Erycinidae* is almost exclusively tropical, so that but quite isolated species advance some degrees beyond the tropics. Very few *Lemonias* reach the south of the Union, and near Buenos Ayres I found but one *Erycinidae* occurring oftener: *Riodina lysippoides*. The principal range is the valley of the Amazon River and the neighbouring countries.

It is, however, entirely wrong to think that the habitats of Tropical America are crammed with *Erycinidae*, as we know it to be the case with the *Ithomiinae* being about analogously distributed. A great part of the *Erycinidae* belongs to the really rare butterflies, and although one sometimes succeeds, after the discovery of the mostly localized trysting-places, in capturing a large number of one or the other species, very many are, on the other hand, of such a rare occurrence that one may collect a district for many years without getting sight of all the species occurring there. In one of the best districts of *Erycinidae* — Rio de Janeiro — v. BÖNNINGHAUSEN collected only about 70 species within 33 years, and he got quite a number of them in only one specimen in spite of his innumerable excursions. I myself collected there for a whole year with the greatest diligence (mostly on the Corcovado) and still I found not even 20 of these 70 Rio-species, among them, however, there were two which v. BÖNNINGHAUSEN had not discovered in more than 30 years, a proof how rarely and accidentally certain species are met. I remember having collected persistently for several days in the finest weather, visiting woods, meadows, the slopes of mountains, and gardens full of blossoms, without seeing even but one *Erycinidae* — maybe except *Libythea carinenta* —, and even on my last excursion in Brazil I found on the spot where I collected most frequently, a specimen of *Echenais bolena* resting on the trunk of a tree, a species I had never come across before there.

Thus it is easily explained that even successful tropical collectors often brought home only few *Erycinidae*, and many descriptions have been given according to but one specimen or even according to a figure of it. Thus individual differences, or such based upon subordinate races, were often considered as the marks of a species or subspecies. In order to clear this up, very many specimens of each species had to be examined, and more than 100 000 American butterflies of this family were compared by me, most of them in the collections at Tring, in HEWITSON'S, GODMAN'S, ADAM'S Collections in London, as well as in a number of private collections. Of great value were large series from certain districts, being also exactly dated, such as many specimens of the Paris Museum, the Coll. LE-MOULT, FASSL etc., or being provided with the exact finding-places, as in the Coll. ESSIGER (Gotha).

The most remarkable result of these examinations was the fact that all the specimens of one species of *Erycinidae* originating from a certain habitat showed the minutest likeness to each other. In Europe one may easily capture on a meadow of only some fathoms in extent the most various specimens of for instance *Melitaea athalia*; lighter and darker brown ones, even reddish-yellow ones, then again such being begrimed in black, with thick or fine markings, large and small ones; specimens resembling one another exactly and

of the same finding-place can at any rate not be collected. Quite the reverse we experience in the American *Erycinidae*. In almost all their species I was able to ascertain that the specimens of the same finding-place exhibited the greatest likeness, like the coins of the same stamping. There scarcely occur aberrations in colouring or marking, and even larger or pygmean specimens are rarely found at the same place. The most striking contrast to this is offered by the observation that even in two quite neighbouring habitats the specimens nearly always show a constant difference from which one may precisely ascertain the place where they were found. Similar peculiarities are noticed in South America also in some other groups of butterflies, such as *Heliconius*, *Melinaea*, *Mechanitis*, and in dealing with the *Ithomiinae* it has been carefully avoided to assign new denominations to the innumerable *Mechanitis polymnia* varying according to their habitat, and to give names of a subspecies to those that are nothing but subordinate races. We must consequently also in the *Erycinidae* avoid giving many new denominations, else we should have been induced to distribute more than 5000. The *Ithomiinae* are very bad flyers, worse than any European day-butterflies, but still they are able to fly constantly in the same direction and, therefore, to wander, whereas the greatest part of the *Erycinidae* seems not to leave its birth-place at all *). Thus the single habitats, even when they are quite neighbouring, are without any connection to each other, whereby such constant, though insignificant differences are formed, about similar to the isolated *Parnassius* on the different mountain-peaks. If we consider that about 100 names have been assigned to the one species *Parn. apollo*, we may imagine to what it would lead, if we were to deal in a similar way with the 1000, often analogous *Erycinidae*; for about 50 names would have to be given to the constant local deviations of the one *Stalachtis calliope*, if we were to consider every constant spot or shade, for instance in a species of *Parnassius*, to be worth a denomination.

Therefore we can neither attribute the rank of a subspecies to all the numerous, already denominated forms of *Erycinidae*. If they are nevertheless registered here, it is done for completeness' sake. We shall precisely determine the very numerous subordinate races being hitherto not yet ascertained by briefly indicating the deviations of colours and markings, to which the single species or subspecies are subject. Within these bounds most of the intermediate forms yet to be discovered may be placed, the habitat of which is at present not yet ascertained.

As we shall see directly, this characteristic variability occurring in but quite few (exclusively American) groups of butterflies is to be explained by certain peculiarities of the habits, and we mention as one of the most important biological singularities of the *Erycinidae*, the aversion to flying we have indicated above. Many species, such as *Symmachia*, some very glaringly coloured *Mesene*, some *Mesosemia* seem to fly in the day-time, if at all, only when being chased up, but otherwise to keep hidden under the leaf, so that, for instance, BATES arrived at the conviction that they were able to make altogether only quite short flights. FASSL who, next to BATES, has probably observed most of the *Erycinidae* in nature, writes about it (i. l.):

„Many species of *Erycinidae*, especially also rare ones, seem to be bound to certain plants by some reason or other, apart from these plants being the food-plant. I often found certain species at intervals of several days in 1 specimen each at the very same spot at the end of a branch.“

FASSL also furnishes a proof of it in his „Tropische Reisen“ where he writes about the rare *Lymnas thyatira*: „I captured it at quite different seasons, but at one and the same shrub in 2 specimens.“ In the same way KAYE found 2 specimens of *Zeonia* on the same bush in two different months, as he writes „an evident proof of its most local occurrence“. The same habit I can prove for numerous Brazilian *Erycinidae*. As for instance I found single couples of *Isapis agyrtus* at a spot of the road only a few metres in extent at the most different seasons, always on the twigs of the very same tree, whereas I nowhere else came across this species on more than 100 excursions in Tropical America. Exactly the same habit I experienced in *Syrmatia*, and *Mesene sagaris* of which I took both sexes at most any season, but always at exactly the same spot of the road.

It stands to reason that this aversion to flying cannot be absolute; and if certain species have never been noticed swarming spontaneously, this may be due to their preferring a special hour for swarming. It seems that the early dawn is often chosen, and FASSL ascertained for many species the early hours of the day in which they go out in search of food or attend to their propagation. The *Mesosemia* which usually sit beneath the leaves, sometimes come up to their upper surface and search the bushes by — as FASSL says — „jumping rather than flying“ from one leaf to another, assuming a peculiar attitude of their wings (flattened down hind-wings and raised forewings). In other species the flights performed by them are extremely short, so that it very rarely happens that one chances to observe them just then. *Tharops pretus* sometimes appears whirling on top of a bush in the burning midday-sun, playing with its equals or small *Thecla*, right up into the air in order to come down again after a few seconds and to hide itself. Quite similar is the habit of *Ancylyuris*, the metallic under surface of which exhibits a glistening coruscation when flying in the sunshine. After having flown but a few seconds the animals drop down on the tip of the bush and most skillfully run round the rim of the leaf to its under surface to which they cling like the Geometrids. The *Eurybia* is seen almost only when it is chased

*) As was supposed, the animals keep to the food-plants growing very sporadically.

up from the huddled heap of leaves covering the soil of the woods. Sometimes, however, a ray of the sun piercing the dense foliage of the woods seems to rouse them and all at once several specimens appear at a clearing in the woods where they, not unlike our *Pararge egerides*, bustle about together for a short time in order to hide themselves again immediately hereafter. Only some species seem to fly about like other day-butterflies, such as *Lasaia* and *Stalactis* the latter of which are even seen at all hours of the day flying unwieldily straight onward along the skirts of the woods and roads. They also seem little imperiled thereby, for they obviously imitate other butterflies, such as certain *Ithomiinae* or *Heliconiinae*, and they complete their mimicry by not distinguishing themselves from their originals by deviating habits and modes of flying.

The mimicry itself cannot be regarded as very widely distributed among the *Erycininae*. Nevertheless there are very striking cases known. As for instance *Mesenopsis melanochlora* has exactly the most uncommon exterior of *Josia fulva*, and FASSL states that both fly at the same places. The *Chamaelinnas* are likewise easily mistaken for certain night-butterflies from the Arctiid- and Cylopidid-group; both sexes imitate here the same species of butterflies which have partially served the ♀♀ as models in the genus *Aricoris*. To discern the red *Mesene* from the quite similar *Endule*, even the experienced collectors must first learn, and others again, such as *Uraneis*, exhibit, though not exactly the same exterior as certain patented species of other families, still the approximate habitus of shunned genera. The preference for certain models depends rather exactly on the degree of their being patented. The Danaids, being shunned by almost all enemies for their repulsiveness, are most generally imitated, such as the hyaline-winged genera of the *Ithomiinae*, the *Heliconius*-like *Mechanitis*; furthermore, some Arctiids secreting oil. We must neither overlook that remarkable repetitions occur among the *Erycinidae* themselves, as for instance in the *Symmachia*. We find a double of *Symm. tricolor* in *Nymphidium regulus*; *Symm. xypete* resembles certain red *Mesene*; *Symm. triangularis* greatly resembles a *Mes. sagaris*-♀; *Symm. probetor*-♂ the *Eus. gelon*-♂ (= *Eus. sabina*) flying at the same place, and so on. — The genus *Barbicornis* likewise entirely conforms to similarly coloured and marked *Erycinidae* of the genus *Lymnas*, and we find the following conformities of:

<i>Barbicornis aterrima</i>	with	<i>Lymnas cephise</i>
„ <i>acroleuca</i>	„	„ <i>acroleuca</i>
„ <i>cuneifera</i>	„	„ <i>phereclus</i>
„ <i>fusus</i>	„	„ <i>epijarbas</i>
„ <i>basilis</i>	„	„ <i>barca</i>
• „ <i>mona</i>	„	„ <i>andania</i>
„ <i>marginata</i>	„	„ <i>alena</i> .

But we do not mean to say by this that one of the said species must have served as the model for the other; that is even very improbable, since we have no hint as to the *Erycinidae* being patented by repulsiveness or poisonousness of the foodplant *), and since these species resembling each other have different patriae. It appears much more probable that both species are imitators of a third, patented species (such as an Arctiid or the like), so that their resemblance among each other is secondary.

In contrast with these conformities having not yet been fully cleared up and which seem to be mostly confined to quite certain genera, we meet in hardly any other family of butterflies such an abundance of most uncommon, entirely original schemes of colouring as just in the *Erycinidae*. The glaringly, though uniformly coloured specimens mentioned at the beginning of this introduction are already an example of it, being joined by numerous others of very manifold nature. The *Meneris* with white dots and scarlet bands, the *Zeonia* with glaring anal spots on its hyaline wing, the *Baeotis* with a yellow and black zebra-design, the *Lyropteryx* with blue radiary rays, the *Siseme* with antemarginal radiate bands, many *Nymphidium*, such as *manthus*, *acherois*, *lamis*, the *Calliona*, and many others are quite isolated and make the family to which they belong appear entirely independent and uncommonly varied, exhibiting in but few genera relations to their surroundings.

The *Erycinidae* are still less adapted to animals than to plants or to the subsoil on which they rest. Mostly one surface is just as conspicuous as the other, even if both do in no way resemble each other. In *Ancy-lurus* the upper surface is black with scarlet, the under surface metal-blue; *Anteros* is above black with small whitish spots, beneath sulphurous with golden drops; many *Euselasia* are above golden red or velvety brown, beneath silvery white; the *Metacharis* is above mostly brown-red, beneath steel-blue etc. We know leaf-green *Erycinidae* just as little as rocky or sandy-coloured ones; and it is also quite comprehensible that neither of the surfaces is conformed to the surroundings, for their habit of hiding also in day-time brings about that neither of the surfaces becomes visible, so that the butterfly is not imperilled even by the most glaring colouring.

Consequently, neither the seasons have a great influence upon the *Erycinidae*; seasonal dimorphism is to be noticed at most by uncommon aridity producing somewhat smaller specimens; but the weather seems

*) Surely some larvae of *Erycinidae* live on poisonous plants, such as those of the bright red *Mesene phareus*.

not to influence the marking and colouring. In the greatest part of Tropical America the dry and rainy periods are on the whole not so decidedly contrasting each other as in India and Africa, and also in other American families of butterflies, the variation explained as seasonal dimorphism will probably prove to be the effect of other influences.

We know rather little of the particulars in the life of the *Erycinidae*. We are struck by a far greater conformity in biological respect than we ought to suppose owing to the manifold exterior of the single genera and species of the family. We have already mentioned the lassitude in flying, as well as the habit of settling down on the under surface of the leaves with their wings spread like the Geometrids. I was particularly struck by the pose of the antennae being often stretched parallel forward, not laterally divergent, as for instance in the *Nymphalidae*, *Papilio* etc.; they are mostly long, very thin and without a distinct club by what the said pose becomes particularly conspicuous. The species pretending to be dead on being seized (as for instance *Stalachtis*) press the parallel placed antennae beneath the abdomen and hold them together with the legs. The parallel position of the antennae seems to be usual not only in flying about, but also when they are at rest under the leaves. They then sometimes stand out beyond the rim of the leaf and seem in some way to serve the hidden animal for finding out what is going on above the leaf. FASSL has observed that the bait spread on the upper surface of the leaf was not only noticed by the butterfly, but was also sucked by the butterfly sitting under the leaf, by extending its antennae and sucker round the rim of the leaf.

Quite a number of species of *Erycinidae* come to the bait; others seem chiefly to absorb water, and numerous others go also on flowers. The *Lasaia*, *Tharops*, *Stalachtis*, *Emesis* even most frequently visit blossoms, and the small *Charis* are able to bring their predilection for the honey of blossoms very well in accord with their lassitude in flying by remaining continually sitting on the sucked flowers. *Ch. zama* and *theodora*, as well as *argyrodoines* which belong to the most common *Erycinidae*, sit fast like a dark centre in large, yellow compositae, so that one may sometimes take them away with the poison-glass, and they seem to inhabit permanently such large compositae, as some Cetoniids do with us. I sometimes found on roads almost all the blossoms occupied by small *Charis* of which, however, only one was sitting on each blossom. I was struck, however, by the fact that those *Erycinidae* visiting blossoms and swarming like the other day-butterflies from one flower to another mostly belonged to those, not numerous groups of *Erycinidae* which possess an exceptionally well developed flying-power, such as *Emesis mandane*, *Tharops menander*, *Lasaia meris*; they are also uncommonly far distributed and inhabit the greatest part of the South American Continent without being divided into the subordinate races distinguishable by colonies, which have been rather copiously denominated in more unwieldy species.

While in other groups the life-history has aided us in our judgment, we are pretty much in the dark with respect to the earlier stages of the *Erycinidae*. We know the larvae of little more than a dozen of species and we can state only the one fact from this insufficient knowledge that the *Erycininae* are indeed a natural group of butterflies, in spite of the divergent shapes of the butterflies belonging here. The reason for our ignorance of the larvae is that they are not only rare, but that they also seem to live hidden. As to the food-plant the group is apparently distributed over almost the whole vegetable kingdom, and we find the larvae on fruit-trees (sepotill-plums, America-apricots) as well as on parasitic plants (*Viscum*, *Loranthus*), on high-standing cultivated plants (*Cassia*, *Cocoa*) and on creeping plants. Only of the monocotyledons there is no species known yet. It seems that the larvae of some species keep hidden in leaf-cases at least during day-time; and if this be not the case, they surely sit, like the butterflies they produce, on the under surface of the leaves. Certainly they are most difficult to discover.

The eggs are semiglobular, something like a cake, with distinct punctiform impressions being especially deep in the vertical region.

The larvae are partly more cylindrical, partly more crookbacked like the wood-lice, always with fine soft hairs which are sometimes short, but very dense; the colour is sometimes green, but sometimes also very conspicuously miniate or bluish-green or also snow-white, in the latter case sometimes wrapped in a soft, white, easily separable pubescence.

Of the few cases in which the larvae are known to us there are hardly any general descriptions traceable, but in the *Eurygoninae* and *Erycininae* one finds a peculiar organ the functions of which have not yet been cleared up and which seems to be of almost the same structure in larvae of distantly separated genera. These are hornlike or cuneiform protuberances at the neck surrounding sometimes the head radiatiformly (*Stalachtis*), sometimes standing at the sides of it in the shape of tufts (*Theope*). As they are sometimes coloured in a glaring red and also pass over to the pupa (*Helicopis*), it is to be supposed that they are protecting organs. In *Euselaria* they stand out high at the sides of the head in the shape of spines, like the horns of a bull, while in *Nymphidium* they seclude the head from the body like a fence. Beside this formation, the larvae of *Erycinidae* exhibit yet an ant-organ by which they approximate the Lycaenids and which is also at the same spot at the back of the abdomen or in the anal region and has occasionally been the cause of strange alterations in the shape of the anal end of the larva.

According to recent observations, the Erycinid larvae indeed also possess a guard of ants consisting sometimes of larger troops of minute ants, sometimes of solitarily working large species. GUPPY has ascertained that the latter offer strong resistance if one wants to separate them from their protégé; they are, therefore, probably able to effectively defend their larvae against enemies.

The pupae offer a very great variety. Some are green, small, clinging closely to the leaf like the Lycaenids which the *Erycininae* also surely approximate *); but there are also known numerous variegated, spotted pupae, such as of the genera *Hades*, *Stalactis*, *Lymnas*. Others resemble a small piece of wood (*Nymphidium molpe*, *Metacharis erythromelas*) and are occasionally also provided with splinter-like protuberances (*Ancyluris*). The attachment is different, the *Libytheinae*, *Stalactis* and others appearing suspended freely by the cremaster, whereas others stand out horizontally and others again are held by a belt of spun silk. Bates had even once tried to systematize the ways in which the pupa is hung up, but he desisted from it on finding that evidently allied groups had different modes of suspension. We actually also know that for instance the green pupa of *Nymphidium caricae* is held by a belt, while the pupa of *Emesis mandana* which approximates it, is suspended freely. Most of the pupae are probably fixed singly and well hidden; but the pupa of *Hades noctula* is gregarious (on one leaf 15 specimens) which may signify the complement of a mimicry, since the doubles of *Hades noctula* (*Morpheis*, *Eucheira*) likewise live in clusters of nests. Though bright colours are on the whole rare in freely living pupae, yet they occur in the *Erycinidae*, as for instance in *Helicopsis* the pupa of which exhibits scarlet excrescences at the anterior and posterior ends.

The butterflies seem to become transformed chiefly in the early hours of the morning, it was at least early when I met single specimens with still soft wings on their first flight. FASSL saw several species flying to the water and to the bait quite early in the morning, but they did not appear anymore the whole day. We have already mentioned the short swarming flights performed by many species in the sunshine. The *Nymphidium* seem to wait until the evening-twilight before they come out from their hidingplace. The life of the butterflies seems to be short, though it is bound to a certain season only where — in Argentina and North America — a cold season interrupts the life of the insects altogether.

The division into genera, having been founded by WESTWOOD, was in the very beginning accompanied by a rather good result, since this author was anyhow uncommonly skillful in systematizing insects of all classes by the right appreciation of the rougher anatomical peculiarities and by the proper consideration of the habitus and even of the scheme of colouring. FELDER who founded different new genera has also worked with such an acuteness that the system created by these two systematizers can still be applied to-day with insignificant alterations. BATES who in 1865 established, as the first specialistic work on the *Erycinidae*, a catalogue of this family, after various other attempts, reverted to the veins of the wings as being the most serviceable principle of division. Later on, SALVIN and GODMAN undertook a careful examination of the genitals in the ♂♂ of most of the genera, of which detailed descriptions were published in the *Biologia Centr.-Americana*. They result, however, in a so complicated structure and in a so confused formation of the single organs that they can hardly offer any clue in certain special questions. A new list was brought by KIRBY's Catalogue in which the number of the known forms (630 with BATES) increased to more than 900. This was in 1877; then a greatly completed catalogue appeared by LEVI W. MENGEL editing a very much increased bibliography. He does not set up new genera nor — what is still more appreciable — any new forms, but he recommends a reduction, remarking quite right that there are evidently too many genera, quite an extraordinary number of them being based on only 1 or 2 species. Since that time parts of the family — being considered as special families — have been catalogized in WYTSMAN's „Genera Insectorum“, such as the „*Libytheidae*“ by A. PAGENstecher and the „*Riodinidae*“ by H. STICHEL.

A. Subfamily: *Libytheinae*.

We refer to what has been said in Vol. I, p. 251, Vol. IX, p. 772, and Vol. XII, p. 293, and only remark that there are only 1 or 2 American species at most, against 4 or 5 Indo-Australian and 4 Africa species.

1. Genus: *Libythea* F.

The African *Libythea* belonging to the group of *Dichora*, the American forms belonging to the subgenus of *Hypatus* Hbn. have been separated from the palaearctic and Indo-Australian forms. The *Hypatus* differ from the typical *Libythea* by the antennae being provided with a distinctly defined club, from the *Dichora* by the much longer palpi. All of the most variably coloured American forms have been regarded as belonging to one species. Its range extends almost over the whole continent from Canada to Argentina.

*) As a transition the Indian genus *Curetis* is considered exhibiting not only as a butterfly anatomical resemblances with the *Erycinidae*, but being comparable with this family also in the larval form, especially by the strange fan-organ at the posterior end, which it spreads out on being disturbed and puts in a quick whirling motion.

L. carinenta Cr. (= *carinata* Burm.) (120 D e). Typical specimens are above blackish brown with a black, whitespotted apex of the forewing; in the cell a brownish yellow wedge-shaped streak, and light patches in the median cells of the forewings as well as beyond the cell of the hindwing. The hindwings are beneath sometimes one-coloured rocky grey, sometimes designed and coloured like a leaf. This form varies a great deal, but is not bound to localities in its forms, and extends from Texas to Paraguay and Buenos Ayres. — **bachmani** Kirtl. (120 D e) is the form occurring from Texas to the north in the Union; here the yellowish-brown discal spots are very much broader, the subapical costal spot is connected with the next one to a small whitish band. — **motya** Bsd. and Lec. (120 D e) has much broader wings, beneath preponderantly of a dirty greyish yellow; from Cuba and Portorico. — **terena** Godt. from San Domingo approximates the latter form, though it is of a bright reddish tinge, thus a transition to the form of the northern continent, especially to **larvata** Streck. described from Texas which has above brighter red-brown spots and an under surface covered with violet and looking marbled in a certain exposure to light. — The grown-up larva is 3 cm long, cylindrical, dark green with pale, yellowish-green dorsal and lateral stripes, living on *Celtis occidentalis*. Pupa about of the shape of a Satyrid pupa, somewhat resembling that of *Epinephela jurtina* or *Pararge maera*, bright green, lighter on the sides and back. — The butterflies mostly fly about $1\frac{1}{2}$ to 2 m above the ground in a not rapid clapping flight, quite unlike that of the European *Lib. celtis*; they often gather in numbers round the food-trees and may, just like *L. celtis*, go travelling in migrations. Not rare.

B. Subfamily: **Euselasiinae**.

This group takes up the second place in America, if we eliminate the genus *Helicopsis* being considered by some to belong to the subfamily of the *Nemeobiinae*, and if we do not attribute any greater importance to the insignificant deviation of the veins. Then the subfamily of the *Nemeobiinae* is separated as being unrepresented in America and is confined to the forms dealt with in Vol. I, p. 252—5, and (as Tribus *Nemeobiidi*) in Vol. IX, p. 772—9, as well as in Vol. XIII, p. 294—6 (as *Lemoniinae*). We, therefore, connect the *Helicopsis* — which, by the way, are treated by renowned specialists as genuine *Erycininae* — with the *Euselasiinae* from which they form a transition both to the *Nemeobiinae* and the *Erycininae*, if the imago is taken into consideration; which, however, it joins spontaneously, if one looks at the larva being provided with a well developed organ at the neck. The *Euselasiinae* are easily discernible from the *Erycininae* by the subcostal of the forewing possessing one branch more than the latter, i. e. 4, or as many as the palaearctic *Nemeobiinae*. We must, however, remark that also some American species (though evidently exceptionally) correspond with the veins of the palaearctic genera. Apart from these few cases we, therefore, unite the *Euselasiinae* out of the genus *Euselasia* itself, the genera *Methonella* and *Helicopsis*. We moreover add to them yet the greatly deviating genus *Hades* about which but little is known, but which in many ways represents a connection with the Lycaenids by exhibiting a distinct alliance with the genus *Eumaeus* (cf. table 146 a).

1. Genus: **Euselasia** Hbn.

This genus of butterflies, which in many works is denominated as *Eurygona* Bsd. comprises more than 120 forms extending from Arizona to the south over the whole of Tropical America. The veins are inconstant in as much as some species have 2, others 3, and one species (*aurantiaca* G. and S.) even 4 subcostal branches. The genus is recognizable by the anterior radial vein either running directly in the elongation of the subcostal, or being connected with it by a very short anterior discocellular. The butterflies often have the appearance of small Satyrids or *Thecla*-species; as for instance *Eus. eutyclus* resembles (particularly beneath) exactly *Euptychia helle* (147 b) flying in the same locality, or *Thecla themathea* (147 c); or *Eus. clithra* resembles *Euptychia chloris* and so on. On the upper surface there is often a very bright reflection of a shining power otherwise not found in any lepidopteron and of a truly wonderful iridescence. The larvae are (as far as they are known) somewhat of the shape of a wood-louse, very brightly coloured, behind the head there are two points. The pupae are covered with fine, fluffy hairs like the larvae, green, held by a belt. The imagines are partly extraordinarily rare and belong to the few *Erycinidae* that fly to a considerable height. They also clap their wings together when being at rest like other day-butterflies, unlike most of the other *Erycinidae* which spread them out like the Geometrids. We must add that very many of the specimens lying before us and being partly also figured do not correspond with the original descriptions and the original figures in all the details, since they originate from other places where they were found; they belong, however, nevertheless undoubtedly to the species referred to.

E. zara Hew. (121 a). Above blackish brown, ♀ with a white spot on the forewing. Beneath an orange-stripe encircles the joint, earthy brown median area. In the ♂ the forewing reflects above in a dull violet as far as close before the distal margin, the hindwing has a broad blue-reflecting distal margin. Brazil; extremely rare.

E. uzita Hew. (121 a). Blackish brown, the ground of the wings without a reflection, but in the basal part of the forewing in the ♂ a blue spot reflecting in the sun so very brightly that the eye cannot bear the lustre which is by far superior to that of a *Morpho cypris*, without being dazzled. Hindwing in the anal

part of the margin orange. The ♀ has instead of the blue spot a white discal spot. Probably very widely distributed like the preceding species, though very rare; from Guiana along the Amazon to Pebas.

eucritus. **E. eucritus**. By this a number of butterflies are presumably combined varying in every habitat. Colombian ♂♂ have above a beautiful violet lustre covering the basal half of the forewings and the distal half of the hindwings. On the under surface, the proximal stripe at the anal fold of the hindwing bends round once more and runs towards the costal margin near the base, so that the hindwing receives one more transverse stripe. The describer himself already figured as ♂ and ♀ specimens from different habitats which do not belong together. Specimens from the Rio Negro in East Colombia exhibit next the base of the wings, instead of the inner stripe being bent back, a large round jet-black spot and above a magnificent blue reflection; we denominate this form **catapoecila form. nov.**, because it has quite a strange appearance thereby, being also larger than all the other forms. Beside the specimens from Colombia there are also such from Santarem (Amazon) before us. The other forms can remain nameless.

gelon. **E. gelon** Stoll (♂ = *sabinus* Stoll, tenage Hbn.) (121 b). ♂ of a deep blackish brown with a vermilion wedge-shaped streak at the inner margin of the hindwing. ♀ lighter with a yellowish-red anal part of the hindwing. Under surface greyish-brown (♂) or yellow (♀) with three yellow marginal stripes. Very variable; the red stripe in the ♂ may be broader or narrower, it may reach the base or the distal margin or not, it is mostly smaller than in our figured specimen (from Surinam). In ♂♂ from Cayenne the red apex of the hindwing is bordered in black. In the ♀ the red spot on the upper surface of the hindwing varies greatly and may in some places be covered with black. On the under surface the yolk-coloured spot before the middle of the distal margin of the hindwing may be bordered by black or not, the habitats of the different forms may be situated quite close to each other. Guiana, not common.

zena. **E. zena** Hew. (121 a). ♂ above with a large red spot of the forewing and a very small spot of the hindwing. Beneath blackish-grey, before the distal margin 2 white stripes. ♀ above lighter brown, the red spot of the forewing transverse-oval, the spot of the hindwing larger and reaching the distal margin. On the Amazon River, near Iquitos, less rare than the preceding species, though very local.

erythraea. **E. erythraea** Hew. (♀ = *coccinella* Bat.) (121 a). ♂ distinguishable from the ♂ of *zena* by the larger hemochrome-spot on the upper surface of the hindwing, and particularly by the under surface exhibiting 3 light (instead of 2 white) stripes before the margin. Moreover very variable, at the single habitats exactly equal. Forewing sometimes with a broad, sometimes with a narrow, black border; the spot of the hindwing sometimes proximally indented, sometimes also, in the ♂, reaching the border. ♀ similar to that of *zena*, forewing more intensely red, nearly as much as in the ♂. Colombia and Amazon, Iquitos, Tunantins. Rather rare.

eutaea. **E. eutaea** Hew. (121 b). The ♂ lying before me from the Paris Museum from Nouveau-Chantier (French Guiana) resembles entirely the figured ♀, but the red is more fiery and extends in the forewing as far as to the inner margin, in the hindwing almost to the base. Under surface of both sexes nearly exactly like in a small *gelon*, though the costa of the forewing is black. Certainly, like most of the allies, very widely distributed (Guiana and Amazon), but very rare. — *lindana* Mschl. is surely only a ♀ of *eutaea* from another habitat (Surinam), in which the black costal stripe on the under surface of the forewing is absent, so that the under surface resembles altogether that of the ♀ of *gelon* and *erythraea*.

euriteus. **E. euriteus** Cr. (= *euritaeus* Hew.) (121 b). Under surface alike in ♂ and ♀, whitish with a loam-yellow base of the wings and 3 brown parallel stripes. Above the ♂ is black, the forewing with a blue arcuate spot from the base to the anal angle, the hindwing with a blue distal spot. ♀ brown with a yellow distal spot in the anal part, being differently shaped at each finding-place, as well as the stripes of the under surface in the ♂ and ♀. — As **gration form. nov.** (121 c) we denominate a form from the Amazon with a broad blue oblique band of the forewing and an orange-yellow ground-colour of the under surface; in the ♀ the orange-yellow spot of the hindwing is above considerably narrower. — In **charilis** Bates, likewise from the Amazon, the latter is absent altogether, and in the ♂ the blue of the upper surface is spread more across the surface of the wings. — **calligramma** Bates. Here the ♂ has white-speckled fringes of the hindwing, the ♀ is above light-brown; both sexes are beneath more strongly and densely striped; one stripe runs along the costa of the forewing and the inner margin of the hindwing. From Ega; known to me only from BATES' description. Not rare.

eutychus. **E. eutychus** Hew. (= *orfitia* Cr. pt.) (121 c). ♂ above black with a faint violet lustre of the centre of the forewing and a marginal band of the hindwing with a bright violet reflection; ♀ earthy brown with diaphanous stripes of the under surface and a stout dot before the middle of the border of the hindwing. Beneath 3 or 4 parallel stripes across both wings and before the middle of the border of the hindwing a large black eye-spot with a blue reflection. Rather common and very variable, especially as regards the intensity and position of the blue reflection, and the thickness of the stripes on the under surface. More than 100 specimens are lying before me, 50 are in the Tring Museum. — **ferrugo** Bat. from Teffé (where, however, also typical *eutychus* fly) exhibits the two outer transverse stripes of the under surface flown together to a very thick band; — in **dyrrhachius form. nov.** (121 c, d) they are more divergent towards the inner margin of the hindwing. At the same time, this form exhibits a very bright hyacinth-blue reflection in the inner-marginal region on the under surface of the hindwing, which is likewise well developed in *eutychus* from Teffé, being paler and more purple-violet in Colombians and missing altogether in Bolivians. — **clithra** Bates (121 d) shows the brown stripes of the hindwings narrowed cuneiformly towards the inner margin, the space between there white with a magnificent hyacinth-blue reflection. Typical specimens are found on the Lower Amazon (Santarem, Para); specimens from the Upper Amazon approximate *dyrrhachius* from Guiana, and intermediate forms originate from Rio Jurna. Not rare.

E. rasonea Schs. Similar to *euoras* Hew. Wings dark brown, the distal margin of the forewings below vein 5 and the hindwings from below the apex as far as vein 2 covered with dark metal blue. Under surface light reddish brown. On the forewing a dark subterminal shade; a distal darker band, bordered by a duller brown, obliquely from the middle of the costa as far as below vein 2. Hindwing with a darker distal band than the forewing, running straight through from the costal margin to vein 4, then turning more distally, being undulated towards the proximal margin, followed by reddish brown internerval streaks. These streaks do not reach the distal margin and terminate into pointed dots being outside shaded by white; a pointed marginal band between veins 3 and 4, shaded outside by white, inside by red-brown; above this spot as far as to the apex the border is broad, darker. Cucuta, Venezuela. 30 mm.

E. phoedica Bsd. (= *phedica* Hew.) (121 d). Very similar to *eutyclus* with almost the very same under surface; but in the ♂ the whole anal part of the hindwings is above white with a magnificent hyacinth-blue reflection. ♀ quite similar to that of *eutyclus*, but more diaphanous and the brown ground-colour on both surfaces with a dull blue lustre. Guiana; rare. According to HEWITSON also from the Amazon.

E. orfita Cr. (121 d). Under surface with a purple median stripe being in front and behind shaded in an iridescent whitish blue; before the middle of the border an oval eye-spot; the proximal margin of the hindwing with a purple-violet reflection. Above the ♀ is earth-like brown with a faintly diaphanous marking of the under surface, the ♂ velvety black with a bluish brilliancy in the apical part of the forewings. Guiana, Amazon as far as Ecuador and Bolivia. In Bolivians from the Rio Songo, the apical brilliancy of the upper surface as well as the blue silvery gloss of the under surface may be absent. — **euodias** Hew. (121 d) has a dull violet reflection on the black upper surface and a long-stretched anal part of the hindwings exhibiting besides a bright purple inner margin; on the Amazon; rare. — **issoria** Hew. (121 d) from Ecuador stands between the two preceding forms with respect to the shape of the hindwings; the purple of the inner margin of the hindwing is covered here with a bright silvery blue reflection. — The species is common in Guiana. It varies wherever it is found; for instance, the red-brown median stripe of the under surface in specimens from Nouveau-Chantier is twice as broad as in those from St. Laurent du Maroni. Near St. Jean, in October, there fly small specimens that have hardly the size of an *E. effima*; the silvery lustre is much more expanded in Cayenne-specimens than in those from Surinam etc. We do not consider it advisable to denominate all these forms.

E. euryone. The butterflies belonging here are distributed over a very vast district. From the northern coast of South America they occur throughout the whole of Guiana, the Amazon district as far as Ecuador, Peru and Bolivia. **euryone** Hew. (121 d) was described according to a ♀ from Ecuador; both sexes are above dark brown, beneath with 3 or 4 parallel transverse stripes through both wings; the marking of the under surface resembles somewhat *E. eutyclus* and the analogous species of *Euptychia* (*Ocypete*-group). ♀ above somewhat lighter brown. Specimens from Guiana are only about half as large (probably only at certain habitats, such as St. Jean du Maroni in French Guiana). These specimens have beneath narrower stripes. FASSL brought a form from Bolivia (Rio Songo), the ♂♂ of which greatly approximate the typical Ecuador-specimens, the wings of which, however, exhibit a blue reflection in the basal part. In other districts of Bolivia, however, this reflection is missing altogether. Bolivian ♀♀ are mostly on both surfaces more earthy grey, considerably lighter than ♀♀ from Ecuador. Such a specimen is figured on t. 121 e, with the erroneous subscription of „*eurygona*-♀ U“. — On the Upper Amazon flies **effima** Hew. (121 e) with ♀♀ that are hardly different from the Ecuador-form; the ♂♂, however, have above a white anal area of the hindwings, like many equally coloured *Hesperids* flying together with them.

E. melaphaea Hbn. (121 e). Beneath (♀ also above) somewhat similar to *euryone*; but the ♂ exhibits above a dull red cuneiform spot of the forewing and a similar brightening in the hindwings. The red may be partly or totally very much darkened, but also very bright, more yellowish-red; the wedge of the forewing may be shortened (Nouveau-Chantier, Guiana), narrowed (Upper Amazon), widened (Peru) or provided with blurred edges (Bolivia); the spot of the hindwing is sometimes bright and sharply defined (Cayenne), sometimes shortened (Sosomoco, Colombia); sometimes also parts of the red area are covered by the black ground-colour breaking through (as for instance in one specimen from Peru and one from Guiana). All these forms are interseculant. The ♀ is always to be distinguished from the *euryone*-♀ by the dentated border of the hindwing; it is very much rarer than the ♂ (among 160 specimens only 4 ♀♀). Distributed all over the northern part of South America, from Guiana and Para to Bolivia and Peru, locally common.

E. ella Stgr. i. l. (142 b) from Bolivia has almost the same under surface as *melaphaea*, but the parallel shade between the median line and the border is absent and the hindwings are not dentated. But above all, the upper surface is one-coloured blackish brown.

E. eulione, with which the series begins of those *Euselasia* exhibiting beneath instead of the three transverse stripes only a median line and behind it, between this line and the border, a more or less distinct parallel shade. — In **eulione** Hew. (121 e) there is before the middle of the margin of the hindwings beneath a black oval eye-spot, above and below this there are some light transverse nooses. Above the ♂ is blackish brown, like *cafusa* from which it is also hardly distinguished in the shape of the wings; the ♀ is somewhat lighter coloured, larger and with rounder wings. The species is recognizable by the uniform median stripe near the anal angle on the under surface of the hindwing. From the Amazon; apparently very local; obviously very much like the following form. — **hygenius** Cr. which I only know from the figure, has beneath on the hindwing

in the anal part more intense black radiary rays, but it seems otherwise to be closely allied to *eulione*; from Surinam.

thusnelda. **E. thusnelda** *Mschlr.* is said to be above velvety blackish brown, beneath similar to *mys*, but the second transverse stripe of the forewing distally fringed; Surinam. Does not lie before me.

cafusa. **E. cafusa** *Bat.* (121 f). A transition from *eulione* to *eustachius*. The upper surface is blackish-brown as in *eulione*; the under surface resembles that of *eustachius*, but the black eye-spot on the under surface of the hindwing before the middle of the border is considerably larger, mostly also the ground of the wings darker, greyer. The ♀ is coloured and marked like the ♂, but the transverse stripes beneath are broader and brighter.

inconspicua. Guiana, Amazon and Ecuador, not rare. — **inconspicua** *G. and S.* from Central America is certainly only a ♀-form of a differently named ♂; maybe it belongs here, unless it be the ♀ of an *euryone*-form.

eustachius. **E. eustachius**. Very variable, above mostly with red, beneath marked very much like *licinia* (121 f). In our figure the marking of the under surface is unfortunately missing altogether, but it is almost exactly that of the form figured as *aurantia* (121 f). It varies by more or less developed submarginal spots on the under surface of the hindwings as well as by their ground-colour appearing sometimes more yellow, sometimes brown or grey. Unless *cafusa* being above entirely blackish brown be only a unicolorous form of *eustachius*, it has above

mys. always red which appears, for instance, in the smaller *mys* *H.-Schäff.* lighter, almost like in *aurantia*. The latter exhibits more miniate hindwings with a broad dark costal margin. — As the red occurs in almost any distribution and probably varies at every finding-place, we have denominated here only the more conspicuous forms:

rhodon. **rhodon** *form nov.* where it is confined to a sector in the hindwing, and **fervida** *Btlr.* where the forewings are
fervida. entirely black, the hindwings red with a dark ray from the base to the middle of the border; from Costa Rica and Surinam. Specimens from Colombia exhibit the centres of all wings brightened by brown-red, and from them there occur all the transitions to typical *eustachius*. The butterfly has a very vast range, from Central America

aurantia. to Peru. — **aurantia** *Btlr. and Drc.* (121 e) from Central America is presumably only an adaptation of the upper
procula. surface to *chrysippe* (121 f) flying there; — whereas **procula** *G. and S.* from Costa Rica with an almost entirely black upper surface being only tinged in red-brown at the base of the wings, forms the transition to *eulione*. —

sergia. **sergia** *G. and S.* (121 e) approximates *procula* by the forewings being coloured almost just the same; it exhibits however, also above on the hindwing the red sector of *rhodon*; likewise from Central America. — A most con-

licinia. spicuous form is **licinia** *Godm.* (121 f) flying in Guiana with *phoedica* and *effima* and exhibiting like them a
athena. large white spot at the distal margin of the hindwing. — In *athena* *Hew.* (122 a), from Guiana to Ecuador, the white area of the hindwing of *licinia* is yolk-coloured, whereby it resembles the upper surface of *gelon*-♀, but the under surface is quite different, like in *licinia*. The species is locally not rare and specimens from the same countries may have a very different upper surface, the under surface, however, is more constant.

mystica. **E. mystica** *Schs.* (142 c) resembles above an *eustachius*, being intensely tinged in yellowish-red, but the postmedian line of the under surface of the hindwings does not round into a hook, but it is sharply angled. Costa Rica.

chrysippe. **E. chrysippe** *Bat.* (= *labiena* *Hew.*) (121 f). ♂ above bright fiery red, ♀ yolk-coloured with black margins of the wings; at once recognizable by the unicolorous yellow under surface exhibiting only before the margin of the hindwing a series of black dots. Central America.

placidus. **E. placidus** *nom. nov.* (= *aurantia* *G. and S.*, nec *Btlr. and Drc.*) which has been figured on t. 121 f as „*aurantiaci*“, is hardly in any way connected with the *mys*-group. The forewings above are quite the same as in *eustachius*, but the hindwings have a broad black border. Immediately recognizable by the quite silvery, unmarked under surface of both sexes. The ♀ may be above entirely brown, but the disc of the forewing is mostly yellowish-brown and sometimes the middle of the hindwing is also brightened by yellowish. Costa Rica and Panama, on the Chiriqui locally not rare; it flies early in the morning. This species is peculiar for the course of the veins; it has on the forewing only two subcostal veins both of which branch off before the cell-end. — **leucophryna** *Schs.*, likewise from Costa Rica, is beneath one-coloured silvery like *placidus*,
leucophryna. but above more diffusely and darker brownish-red, the hindwings with a very narrow dark margin.

hieronymi. **E. hieronymi** *G. and S.* (122 h). Above blackish-brown with dark-red brightenings, beneath with colours and markings quite similar to *eulione* or *eustachius*. In the north of the range there occur two forms of the ♂; such with entirely blackish-brown forewings and such with a red flame in their basal part. We have figured the former. Both exhibit on the hindwing a red ray from the base towards the anal angle. Mexico and Central America. — From South Brazil I possess a ♂ forming an evident transition to the *mys*-form and being, therefore, probably better placed to *eustachius*. On the upper surface of the hindwing another fiery ray runs from the base under the apex, cutting off the costal part. — Apparently not common. The ♀ is always dingy dark brown, without any red, but recognizable by the under surface resembling the ♂ and not easily distinguishable from the allied ♀ of *eulione*.

violetta. **E. violetta** *Bat.* (121 i). The under surface of this species and the following one exhibits, on a brightly (mostly orange) coloured ground, the median line distinctly double, not at first straight and then bent into a hook before the inner margin of the hindwings, but slightly curved, often finely undulated and often with a knot in the middle of the hindwing. Before the middle of the border of the hindwing a larger eye-spot, above

and below it there are arcuate nooses. *violetta* exhibits on the forewing the distal marginal part and on the hindwing a sector in the ♂ of a wonderful steel-blue lustre; one may turn, however, the butterfly in the sun in such a way that the whole surface of the wings shines also violet. From the Upper Amazon (Tapajoz).

E. arbas *Cr.* (= *arbus Mengel*) (121 i). Beneath like the preceding species, but the median stripe in the middle of the hindwing ends into a knot. Above there is less blue, nearly only along the distal margin of both wings. Surinam, Amazon. — A very small, above more brown form with a dull purple-violet reflection, came recently in numbers from Bolivia; as the ♂♂ make a very deviating impression, I call the form **attrita** *attrita*. *form. nov.* Especially the under surface is of a duller colouring, greyish brown, not reddish-yellow. — Contrary to it is a form of enormous size captured by FASSL in Colombia (Medina); above jet black, the violet gloss across almost the whole distal half of the wings; the under surface brightly coloured and marked, the hindwings in the anal part more pointed: **proavia** *form. nov.* — The ♀♀ of all the forms are presumably one-coloured greyish-brown; the cell-end of the forewings is traversed by a dark arcuate shade; behind this there is a faint brightening. — **euoras** *Hew.* (121 i) lying before me from the Kouron River in French Guiana, shows in the ♂ a bluish iridescent stripe along the costa of the hindwing and beneath more earthy grey ground-colour. — **fabia** *Godm.* (122 b) has beneath in the middle of the hindwing only a small angulation of the median stripe, no knotty ends, and in **tarinta** *Schaus* (110 A f) from Colombia this median stripe runs through uniformly and in a straight line. This species is beneath very bright ochreous yellowish-red and the reflection of the upper surface at the distal margin very intense and extending almost as far as to the centre of the wings; it lies before me from Muzo; in some places the distal marginal eye-spot of the under surface likewise exhibits a bright blue reflection in others not. Some of these forms may be justly regarded as distinct species, but one must be very careful in this respect in the *Erycinidae*. Nearly all the *arbas*-forms are apparently rather common at their finding-places.

E. eurysthenes *Hew.* (142 c). This butterfly resembles above very much *E. euoras* (121 i) to which the under surface is also very similar. But the ♂ is at first sight distinguishable by the blue reflection being confined to the distal margins of the wings, and beneath between the brown median band of the forewing and its margin, the fringe of *euoras* is here replaced by another, distinct band. Ecuador.

E. eurymachus *Hew.* Probably only a form of the preceding forming the transition to *euoras*. Beneath the bands of the forewing are duller, more shadow-like, and above in the ♂ the blue reflection is confined to the region before the inner angle of the forewing and the apex of the hindwing. Likewise from Ecuador.

E. regipennis *Btlr.* and *Drc.* (122 b). The ♂ greatly resembles above *arbas*; but beneath the median stripe forms the proximal terminus of a white transverse band, appearing in the ♀ also above. Costa Rica; the specimens lying before me were taken in May near Esperanza. — **eupepla** *G.* and *S.* (122 g) from Panama and Colombia exhibits in the male no white band beneath, so that there remains as a difference from *arbas* only the straight running median line on the under surface of the hindwing. — The *regipennis*-forms are supposed to be very closely allied to the *arbas*-group, and both the forms would produce a very great number of forms, when distinguishing the extension and position of the blue reflection and the colouring of the under surface, since especially the ♀♀ vary almost at every finding-place being sometimes quite grey, or white banded or also nearly quite white.

E. anica *H. Schöff.* (121 i). This animal, not known to me in nature, is said to come from Surinam; it is described as a ♂, but still it is probably a ♀. Forewings with a white small oblique band, hindwings with a white distal dot. Under surface almost exactly as in the ♀ of *arbas*, but the forewing has a honey-coloured stripe at the base of the costa.

E. eubages *Hew.* (121 i). This form of which the ♂ is unknown, probably belongs as ♀ to one of the *arbas*-forms some of which have very light ♀♀ which, however, we know only from few finding-places. As its patria the „Amazon“ is only mentioned.

E. eunaes *Hew.* (122 a). Beneath marked like a very small *regipennis*, but without the white band, though with a very distinct marginal eye-spot. Forewing above with an orange oblique spot. From the Amazon. Only the figured specimen, a ♂ without its exact habitat being stated, is lying before me.

E. dolichos *Stgr.* (122 h). Quite peculiarly black and white, beneath with submarginal spots and a dark marginal eyespot before the middle of the border of the hindwing. From Pebas and Iquitos on the Upper Amazon.

E. lisias *Cr.* (= *salimba Godt.*) (121 h, as „*lysias*“). In the ♂♂ of the typical species the anal angle of the hindwing is extended into a round point. Above the wings exhibit a magnificent blue reflection with white fringes and a black apex of the forewing. The ♀ is much rarer and its blue reflection is duller, on its under surface a brown linear stripe runs parallel to the border. Guinea, Colombia, Amazon, to the south as far as Bahia, locally not rare. Varies considerably even at closely adjoining finding-places. The hindwings may end much more obtuse than in the figure (forma **lycaeus** *Stgr.*, 121 h) or still more pointed; in the latter case the small white dots of the under surface being typical for genuine *lisias* may be also absent; the latter form STAUDINGER denominates **lysimumachus** (= *lysiniacus Mengel*) (121 h, as „*lysimumachus*“). Besides, the line of the under surface of the ♀♀ may also occur in the ♂ and the ground-colour of the under surface may be brown (**euromus** *Hew.*, 121 g); the blue reflection may have a different extension; January-specimens from Ega (fa. *lycaeus*) exhibit on both surfaces an orange-red proximal margin of the hindwing and so on.

- dorina*. **E. dorina** Hew. (121 i). A very rare butterfly from Teffé on the Amazon. Only the ♂ lies before me. It is above marked like *opalina*, but also the hindwings have a broad black border and the colour is deep hemochrome instead of yellow. Beneath the hindwings have sometimes a hemochrome proximal margin, and the black punctiform spot before the middle of the border is shaded snow-white.
- euhemerus*. **E. euhemerus** Hew. (121 g). Only the ♀ is known, undoubtedly belonging to one of the ♂♂ known, maybe to *dorina* together with which it was taken. Above brown with an oblique-oval orange spot, beneath similar to *dorina*. Amazon.
- gelanor*. **E. gelanor** Cr. (121 h). Above blackish-brown, with a blue reflection, beneath ochre-yellow with a brown transverse line and brown dots before the border. Among the 22 specimens of my collection there are hardly 2 alike, so very great is the variability of the species. HEWITSON already was forced to demonstrate by two figures of the under surface that the transverse line on the forewing may be absent in the ♂. But he is wrong in correcting CRAMER for having figured the wings too round. *gelanor*, however, does not only vary in the marking and colouring, but also very much in the wing-contour, and there are such with a prolonged and with a round hindwing, with a dentate and smooth border, with a straight and bulged-out border of the forewing. The blue reflection is mostly placed in the distal-marginal region, but it may also be almost absent or extend all over the wing. In some specimens it is extremely bright, of a Prussian blue, in others again dull and violet. Greatly deviating from typical (Surinam)-specimens are those from Bolivia with a violet-brown, almost unmarked under surface and a convex distal margin of the forewings. In Guiana common; in deviating specimens distributed as far as Bolivia. — Near Pebas on the Upper Amazon there fly specimens with very long-stretched hindwings and an under surface exhibiting in the ♂ almost the same markings as in the ♀;
- uria*. this is **uria** Hew. They have only quite a faint violet reflection at the border of the wings. — The ♀♀ of *gelanor* are on both surfaces of a dull brownish-grey colour, without a reflection, the marking is like in the ♂: dots, a transverse stripe and the shade more dense. — **eubotes** Hew. (121 h) is if it is at all of a different species, very closely allied to *gelanor*; the upper surface is the same, the under surface more violettish brown and the transverse line running somewhat differently; Amazon. — **extensa** Bates is quite similar to *eubotes*, larger, the hindwings in the ♂ more prolonged, but not quite as pointed as in *uria*. Upper Amazon.
- crotopus*. **E. crotopus** Cr. (= *midas* Godt.) (121 g). Very variable; above the typical ♂ is blackish-brown with the disc of the forewing being quite slightly brightened. The under surface is earthy grey with a transverse stripe running similarly as in *gelanor* (121 h) and *dorina* (121 i), and with dots before the border which are partly outside bordered in white. Particularly the punctiform spot before the middle of the hindwing-border is intense, often angular, and above the anal angle of the forewing there is mostly a distinct shadow-like spot. ♀ dark greyish brown with dull brightenings in, below and beyond the cell, in the forewing, sometimes also on the hindwing. The following forms occur in the ♂ being, however, connected with each other by transitions and probably bound to certain finding-places (not countries): Above jet-black, beneath blackish-brown (**ater** form. *crotopina* nov.) — above blackish-brown, beneath red-brown (**crotopina** Stgr.). — Forewing with a dull, indistinct orange-spot, hindwing with a magnificent bluish-violet reflection: **mutator** form. nov. — Hindwing with a sharply defined oblique orange band, under surface violettish-brown: **rhodogyne** Godm. This form occurs more in the northern districts (Central America, Colombia) and the ♀ is above coloured just like the ♂. — All the 4 wings with a large orange-spot, the ground-colour of the under surface whitish-grey: **psammathe** form. nov. — **venezolana** form. nov. (121 g) from San Esteban. Venezuela, has a red-brown ground-colour. The species is distributed from Central America through the whole northern part of South America, to the south as far as Bolivia; it occurs singly, though it is not rare. — The larva is black with whitish stigmata and fluffy hairs; behind the head there is a hemochrome transverse spot out of which there rise two points; the pupa is green, the back and the sides with dark dots.
- micaela*. **E. micaela** Schs. Wings dark violettish-brown, on the forewing a large, yellowish-red spot behind the cell from vein 2 as far as above vein 4, not reaching the distal margin; under surface light brown; a reddish-brown median line near the costa of the forewing shaded by black, close at the inner margin of the hindwing curved; a large subterminal shade, on the forewing luniform, on the hindwing dissolved into spots, containing 2 black dots between the veins 3 and 4; a faint dark distal shade. 32 mm. Peru. The species is unknown to me, and from the description it is not to be seen, where it is allied to.
- eugeon*. **E. eugeon** Hew. (122 f). Above black, beneath very dark greyish-brown, recognizable by the anal part of the hindwing being prolonged like a point. The transverse line of the under surface runs irregularly, and in each of the specimens before me originating from different districts, differently, in northern specimens (Amazon) more straight, in southern (Argentina, Bolivia) almost semicircular. ♀ larger, lighter. Widely distributed, though singly.
- thucydides*. **E. thucydides** F. (= *nychia* Hbn., *arisbas* Dalm. (122 g). Hindwing in the anal part like the preceding species prolonged to a point, transverse line of the under surface also similarly running, but all the wings above with a large orange-spot and beneath of a brownish-white ground-colour. ♀ above yellowish-grey with dark distal margins and median spots. South Brazil, where it is not rare near Petropolis; according to STAUDINGER also on the Chiriqui in Costa Rica.
- eurypus*. **E. angulata**. We distinguish 3 subspecies: **eurypus** Hew. (122 e), above entirely one-coloured deep blackish-brown; beneath the transverse stripe is distally shaded in dark, behind it on the hindwing another

arcuate stripe, and behind this a series of small dark submarginal spots. The hindwing exhibits at the end of the upper median vein an angle, a small tooth or even a stronger tooth. Guiana, Colombia and Lower Amazon (Santarem), not common. — Tailed specimens from Muzo (Colombia) already form a transition to the very similar, likewise one-coloured dark-brown *angulata* Bates (122 c) from the Upper Amazon; here the tooth of the hindwing is protracted in the shape of a lobe and also the border of the forewing is drawn forth angularly. Rare. — *clesa* Hew. (122 c) is the largest form of the species; it lies before me in but one ♂ from Rio de Janeiro where it is apparently very rare. The hindwing is broken almost rectangularly, with a very strong canine tooth, on the under surface the shadowy transverse line is thinner, the one between it and the border of the hindwing is absent altogether, as well as the spots before the margin.

E. modesta Bates from the Rio Tapajoz is known to me only from the description; it is above darker, beneath lighter brown, the forewing clipped at the apex, behind the middle somewhat brighter; hindwing rounded at the anal angle. The transverse line beneath is somewhat darker than the ground-colour. Size of *angulata*.

E. amphidecta G. and S. (122 b). The upper surface has large red-brown, discal, diffuse spots the shape and distribution of which remind us of the yellowish-red of *labdacus*, but the under surface is marked almost like in *crotopus* or *angulata*, of a yellowish colour, with a transverse stripe running parallel to the border. The ♂ is no rarity in the southern parts of Central America (Veragua, Chiriqui) and Colombia (Muzo, Cundinamarca). The ♀ is not yet known, and it is, therefore, not unlikely that it is a ♂-form of the following species flying at the same places (for instance, on the Chiriqui).

E. euploea Hew. Size and shape like *amphidecta*, the under surface also similar, but the upper surface in the ♂ of a fiery red-yellow as in *labdacus* (122 b); on the border of the hindwing, between the veins, there rest the bases of black triangles the points of which show in the direction of the base. Amazon. Not before me.

E. cucuta Schs. Forewing dark brown; a large, dark red spot extending somewhat into the cell along the vein 3, but not reaching the distal margin; beneath the subcostal, at the base of the cell, a short red streak. Hindwings dark red, costal margin and inner margin brown. Under surface brownish grey, a reddish median line being bordered in black and curved near the inner margin of the hindwing; before the border a narrow brownish shade. Hindwing with a light-brown distal margin; between the veins 3 and 4 a black spot behind bordered in white; beneath the vein 2 two yellowish, black-speckled streaks ending in white, a similar one above the anal angle; the outermost border darker, beneath vein 2 ochreous. 22 mm. *Cucuta*, Venezuela.

E. cheles G. and S. (122 c) (as *aurantiaca*). Only the ♀ is known and most variable. Above yellowish red with blackish margins of the forewings, the ground-colour with light spots in and behind the cell. The under surface is pale ochre-yellow, the brownish transverse stripe runs almost quite straight. Before me from Venezuela. — *aurantiaca* G. and S., from Central America, with transitions from *cheles*, has much larger ♀♀ the under surface of which exhibits the very same colours and markings as *cheles*, but which are above more fiery red-yellow, with a blackish apex of all the wings; between this and the red-yellow basal part of the forewing there is a dark yellow oblique band. GODMAN and SALVIN include in this latter form lying before me from the Chiriqui, ♂♂ being above miniate, beneath earthy grey and looking almost like *gyda*-♂ (122 c), though they are redder and have a black apex of the hindwing. Rare.

E. leucon Schs. (142 c) from Costa Rica is somewhat smaller, the ♀ above dark brown with an orange-yellow disc of the forewing, the ♂ with a black forewing being only at the base red-brown and a red-brown hindwing with a black costal and distal margin. Under surface with an irregular dark median band and a thinner, duller line traversing the distal area; before the middle of the border of the hindwing a black small spot tinged with white.

E. julia Drc. Larger than *leucon*. Above the forewings are dark brown, shaded by red-brown from the base to the middle. Hindwing dark red-brown with a brown distal margin. Under surface dull white, the margins red-brown. Both wings are traversed by a coherent, curved, yellowish-red line which is slightly broken near the inner margin of the hindwing. The forewing is traversed by a delicate brown submarginal line. Hindwings with a submarginal row of 5 black spots being very small except the one next to the costal margin. Santarem on the Amazon.

E. labdacus Cr. (122 b). Wings above miniate with broad blackish-brown margins of variable shapes. Under surface yellowish- or silvery-white with several brownish-yellow or black transverse lines, the one of which, in the middle of the hindwing before the inner margin, forms a distinct W. Of the ♀ I only possess one very bad specimen which seems to have been sulphurous, otherwise like the ♂, but the under surface is duller, yellowish, the transverse lines pale. Larva of a bright brick-red with broad blackish-green subcostal stripes and white points behind the head; on *Mammea americana*. Pupa green, with brown markings. The butterfly has a range from the northern coast of South America (Colombia, Guiana) to the south as far as Bolivia; the ♂♂ are locally not rare.

E. argentea Hew. (122 g). Above blackish-brown with a red ray from the base of the hindwing as far as beyond the anal angle, almost exactly like in *hieronymi*, but beneath of quite a different appearance, since *argentea* is beneath silvery with numerous transverse stripes and a yellowish-red anal angle of the hindwing. The ♀ is beneath like the ♂, but above blackish-brown with a large orange-yellow spot of the forewing

a smaller spot in the middle of the hindwing, and a third one before the anal angle of the hindwing. Central America and Colombia.

hahneli. **E. hahneli** Stgr. (= *hahneli* Mengel) (122 f) from the Upper Amazon, to the south as far as Bolivia (Coll. FASSL) and South Brazil, has beneath almost exactly the same markings as *argentea*, but bone-yellow instead of silvery; above the base of the forewing and the whole hindwing of a bright red, except the costal margin and the upper distal margin. The ♀ is above more yellowish-red and at the hindwing only the costal margin is blackish-brown. Near Rio de Janeiro rare; maybe more common in the north.

corduenna. **E. corduenna** Hew. (122 f, g). Above black, the basal part of the forewings and the anal part of the hindwings of a magnificent blue reflection. Beneath silvery yellowish-grey with a dark border and 3 transverse stripes the proximal one of which runs differently, according to the finding-places, sometimes in a straight line, sometimes curved, forming a pointed or an obtuse hook on the hindwing. From Central America through Colombia, Ecuador and Peru as far as Bolivia and Central Brazil. Not rare.

alcmena. **E. alcmena** Drc. Forewing dark brown, the palest at the apex of the forewings. Under surface light tan-coloured, both wings in the middle traversed by a narrow orange band; between the latter and the border a faint, brown undulate line; hindwing with a submarginal row of small black spots the fifth of which is the largest. Smaller than the following species. Ecuador. Unknown to me in nature.

urites. **E. urites** Hew. (122 a). Above blackish-brown with a very faint blue gloss, beneath yellowish silvery-grey with only one transverse line being slightly curved. There is quite a number of equally coloured *Euselasia* being distinguished only by the course of this transverse line. The course of this line of the under surface has, already since HEWITSON, been considered a characteristic mark of the species, but in *corduenna*, *eugeon*, *thucydides* etc. being quite distinct species we may notice that this line itself does not even characterize the subspecies. The forms being above brown, beneath silvery may, therefore, belong to few species distinguished by the shape of the wings, the shading of the silvery area etc.

eusepus. **E. eusepus** Hew. (122 a) is like *urites*, but above without a blue gloss; the line of the under surface is on the hindwing farther away from the border, and before the anal angle, one part of this line (unfortunately missed in the figure) is pushed forward towards the border. I have specimens before me from Pozuzo (Peru), in which this projecting part of the line is yet connected with the other links of the line, thus forming an indentation being convex towards the border. This may be of a very different extent, the most in South Brazil and Bolivia, the least in Peru where we already notice transitions to *urites* from the Amazon, sometimes with quite a faint blue reflection; there the line of the under surface mostly runs continuous. *eusepus* always has a silvery-

eumenes. white forehead. — **eumenes** Hew. Here the under surface-line is not pushed forward before the anal-fold, but in typical specimens still somewhat interrupted before the anal fold. On the whole, *eumenes* has somewhat more pointed wings; from the Amazon. — Our figure shows a very similar form, somewhat larger, the under surface-line uninterrupted, the under surface itself of a purer silvery colour, without a yellowish tinge; numerous equal specimens from Monte Tolima, captured by FASSL, and in the Paris Museum. The ♀ is beneath exactly like the ♂, whereas the ♀ of *eusepus* is beneath lustreless greyish-brown; I call the form which may be a distinct species, **eupatra** subsp. nov. (122 a as *eumenes*). — In **cataleuca** Fldr. from Mexico the postmedian line is absent altogether and the under surface exhibits a very light silvery area without any markings.

matula. **E. matula** Schs. (142 c) described from Costa Rica, from where it is before me from Orosí, 1200 m. Above the black forewings have a yellowish-red, small discal spot, the hindwings a brownish-red lustre. Under surface silvery white with a straight dark postmedian line and some small black dots before the border of the hindwing.

bettina. **E. bettina** Hew. (122 a). Above dark brown with a scarcely noticeable light-bluish lustre; beneath yellowish grey, of a bronze gloss, before the middle of the border of the hindwing a small dark dot. From Central America to Ecuador. Locally common.

candaria. **E. candaria** Drc. (142 c). Like the preceding species, but beneath golden yellow, lustreless. The small dot before the middle of the border of the hindwing is larger and some more finer ones are before the border of the anal part. Colombia, not rare; often in the „Bogotá“-consignments.

phelina. **E. phelina** Drc. Larger than *eumenes*. Upper surface one-coloured light brown, under surface of a pure white. The forewing is, from the costal margin to the inner margin, traversed by 5 narrow, pale brown bands; the distal margin is brown. Hindwing traversed by 3 brown bands not reaching as far as below the cell; close at the distal margin, in the centre, there stands a large black spot and a small one nearer to the anal angle; the space between the two spots is yellow. A submarginal, undulate brown band traverses the wing from the apex to the anal angle. From Maracaibo (Venezuela).

eumedia. **E. eumedia** Hew. (= *ophias* H.-Schäff.) (122 d). Above quite blackish-brown, without any gloss and reflection. Beneath the transverse line is red, as well as the border of the hindwing, in which we notice black, white-edged dots. From Colombia to Peru, not common. Typical specimens from Colombia have a very dentate border of the hindwing; in the much smaller Peru-specimens the latter is rounded, the costa

of the forewing somewhat shorter, the under surface with a less deeply dentate median line and less red at the border, the forehead whitish, and so on. The ♀ like the ♂.

E. mirania Bates from Teffé entirely resembles *eumedia*, somewhat smaller; the transverse line *mirania* beneath, however, is orange, shaded inside in yellow, outside in dark.

E. artos H.-Schäff. (122 a) of which I only know the ♂ which has a silvery-white forehead and a *artos* large orange-yellow or red spot in the anal part of the hindwing; this spot sometimes (in Bolivia) extends much farther than in our figure depicted according to an Amazon-specimen. This red spot is probably of a different shape at every habitat, the colour being also sometimes miniate (Rio Songo, Bolivia), sometimes more orange (Surinam) or bright red (Amazon). Under surface more grey than in *eumedia*.

E. pelor Hew. (122 e). Beneath almost exactly like in *eumedia* and *artos*, above, however, with a *pelor* bright, steel-blue gloss. Variable; the gloss may incline to violet and to green, it may cover the whole forewing or also leave the apex black; the hindwings may be much deeper dentate, even long-stretched, in the latter case the forewings are also more pointed. Amazon; rare.

E. euboea Hew. (122 e). On both surfaces resembling *pelor*; the blue gloss is brighter, leaving the border *euboea* of the forewing broad black, from which it is sharply defined. The hindwings are sometimes more dentate (Bolivia, Amazon), sometimes more rounded. Guiana to Bolivia; common.

E. mazaca Hew. (122 d as *mazaea*). Under surface similar to those of the preceding species, but its *mazaca* colour more grey, the median line brown, not red; the white margins of the dots at the border almost coherent. Quite different is the upper surface showing on each wing a large red area of the extent and shape of the blue *euboea*. Before me only from Pebas.

E. pusilla Fldr. (122 d). Above the disc of the forewing exhibits a light-red spot being in the ♂ *pusilla* cuneiform, in the ♀ oval. In the ♂ the hindwing has another red wedge-ray similar to *E. hieronymi* flying at the same place. Under surface silvery white with a regular, yellow median line. Mexico, not common.

E. authe Godm. (= *emma* Sigr. i. l.) (121 g, h). Above dark brown, all the wings with red-brown *authe* or yellowish-brown patches covering sometimes only the middle of the disc, sometimes almost the whole wing. This auburn colour is bright in both sexes; at some places there occur specimens where it is replaced by light ochre-yellow (ab. *flava* ab. nov.). Easily recognizable by the under surface being greyish-brown, in the distal *flava* half of the hindwings and beyond the transverse line of the forewings white. It is said to come from „Brazil“; I only know it from Bolivia and Peru where the species is not rare and was collected especially by FASSL (Rio Songo) and by GARLEPP (Yungas). It may be only the southern form of the following species.

E. eubule Fldr. (= *hypophaea* G. and S.) (122 f). Dark brown; ♂ with, ♀ without red-brown *eubule* areas of the wings. Beneath marked like in *authe*, but without the whitish brightness behind the median line. Typical *eubule* exhibit in the disc of the forewing 3 light small spots placed in a triangle. There occurs, however, also a form which is twice as large in Mexico and lacking these small spots. Mexico to Costa Rica; rare.

E. onorata Hew. from Ecuador has the size and marking of a large *eubule*, but the upper surface has, *onorata* instead of a dull brown ground-colour, a fiery fox-coloured one passing over into light-orange before the apical part of the forewing. Beneath the forewings are brightened in the disc and the hindwings in the whole distal half by silvery grey, like in *authe*, but even stronger.

E. leucorrhoea G. and S. (= *leucorrhoea* Mengel) (122 b). Above exactly like the large form of *eubule*, *leucorrhoea* without the light dots; also beneath very similar to it, but the median line on the forewing straight, not broken nor curved, but slightly bent at most. Costa Rica, Colombia and Bolivia. The anal half of the hindwing is more or less brightened by a silvery hue. It differs from the very similar *eucrates* by the narrower, dark margin of the wings and the somewhat brighter red of the upper surface. The under surface is duller, and the tongue-shaped bow formed by the postmedian transverse line before the inner marginal fold, does not project so far.

E. eucrates Hew. (122 f). Replaces the *eubule* in Ecuador. On the upper surface sometimes brighter, *eucrates* sometimes duller red, from the middle of the border of the hindwing mostly a black wedge projects with its point to the middle of the wing. Beneath the transverse line above the anal angle is not so very sinuate, the marginal dots of the hindwing are uniformly developed, without a distinct eye-spot before the middle of the border, and their row is continued also on the forewing, where they are absent altogether in *leucorrhoea* and *eubule*.

E. eucerus Hew. resembles the preceding species, but the ♂ is above brighter red; the under surface *eucerus* is more irregularly marked, the postdiscal transverse line dissolved into minute spots and the colouring of the hindwings itself very much brightened. South Brazil, single but not rare.

E. gyda Hew. (♂ 122 c, ♀ 122 h as *chionea*). ♂ above dull orange. Forewing with a black costa, a *gyda* black distal margin and a small black cell-end-stripe. Beneath silvery, sometimes 1 to 3 transverse lines are

- quite faintly indicated. The ♀ seems to me to be an entirely white butterfly which was figured on the table as *chionea*, because SALVIN and GODMAN included a yellowish-red, broad black-bordered butterfly (*russata* G. and S.) (122 d as *gyda*-♀) as the ♀ to *gyda*. This latter one occurring with a red-brown, yellowish-red and pale yellow upper surface, belongs, however, according to the under surface into the group of *eucrates-leucorrhoea*, it may be the legitimate ♀ of one of them. *gyda* is a dubious species; the under surface is not figured in HEWITSON's work and the type is lost. The upper surface varies in the tinge being sometimes brownish-red (*tetra*, (ab. *tetra nov.*), sometimes more yellowish-orange; the ♀ may be faintly shaded in grey at the base and the border of the hindwing. The butterfly seems to be distributed over the whole tropical South America, though not common and very local; it occurs from Central America through Colombia and the Amazon as far as Bolivia. In the north of the range the ♀♀ exhibit the purest white, in the south they are slightly darkened in greyish, especially in the basal part of the wings (? = *chirone* Hew.).
- praeclara*. **E. praeclara** Hew. (122 d). ♂ above about like *gyda*-♂, but the wings are of a wonderful green, golden red and purple silky lustre, as we have described it in a detailed manner on p. 617. Under surface silvery white with some dispersed, small brown spots in the disc of the hindwing. The Upper Amazon District (Iquitos) and Ecuador. ♀ unknown.
- opalescens*. **E. opalescens** Hew. Almost like the preceding, also with a magnificent reflection in the colours of the rainbow, but the dark margin of the forewing is absent. Seems to be widely distributed like the preceding and following species (Amazon to South Brazil), but very rare. I don't know the ♀.
- opalina*. **E. opalina** Hew. (122 d). Coloured like *praeclara*, only the yellowish-brown more hazy; but the lustre is here more one-coloured brass-yellow and it mostly varies on the whole surface of the wings uniformly to golden red or yellowish green. On the silvery white under surface the small discal spots are arranged in the direction of the usual median transverse stripe. From Brazil, probably very widely distributed, but extremely rare. The ♀ is unknown to me.
- euphaes*. **E. euphaes** Hew. (122 d). In the ♂ the forewings are above dark red brown, the hindwings orange with a dark border and basal ray towards the middle of the border; the latter ray varies in distinctness and colouring. Beneath the darker marginal part is separated from the silvery white basal part by the irregularly indented median transverse line. It apparently flies in the whole Amazon District, since there are specimens before me from Para and from the Rio Napo.
- utica*. **E. utica** Hew. (122 c). Shape and under surface almost like in *euphaes*, but the indentations of the median transverse line are not so deep. Above, however, the forewings are also orange-red, with a broad black costal margin and distal margin. I do not know the ♀. From Brazil; very rare in the Organ Mountains. Neither V. BÖNNINGHAUSEN nor myself have found it.
- subargentea*. **E. subargentea** Lathy (122 c). One of the largest *Euselusia*, above blackish brown (♀ somewhat duller), beneath silvery grey; forehead above golden-yellow. Colombia, single.
- teleclus*. **E. teleclus** Stoll (= *gemellus* F.) (122 c). Above blackish brown, forewing with a reddish-tinged basal part and an orange-yellow discal spot (♂), or an ochre-yellow oblique spot (♀). Hindwing always with an ochre-yellow spot before the apical part. In typical specimens the under surface, similarly to that of *subargentea* (122 c), silvery grey and distally slightly shaded, but it may also be quite light silvery white (*cataleuce* Hbn.) (122 c), in which case the basal half of the upper surface is mostly of a brighter red-brown colouring, the orange spot of the forewing running in the shape of a stripe as far as to the base. The transverse line of the under surface is yellow and almost straight. — **archelaus** *subsp. nov.* (110 Ae) is a very large form discovered by FASSL on the Rio Songo in Bolivia, at an altitude of 750 m; here the basal part of the forewings is not red-brown and the postdiscal spot of the hindwing is covered by blackish. Also in this form the under surface may be, in its distal part, more shaded or of a purer silvery white. Guiana to Bolivia, not rare.
- tysoni*. **E. tysoni** Weeks and **howlandi** Weeks, both from Venezuela, have remained unknown to me.

2. Genus: **Methonella** Ww.

- A genus probably consisting of but one very variegated species being unmistakably characterized already by the conspicuous colouring and the deeply indented margin of the hindwing being continued in the ♀ at the ends of the veins into teeth-like small tails. On the forewing the subcostal is four-branched; the branches 1 and 2 rise before, 3 and 4 behind the cell. Hindwing without a basal vein. Palpi extremely short. The colouring resembles that of certain *Themone*, *Cartea*, *Monethe*, *Aricoris* etc., with which conjointly patented butterflies such as *Acraeini*, *Ithomi*, *Pericopini* etc. are imitated. The ♀♀ are very stout and clumsy which makes them still more similar to the unwieldy *Actinote*. They belong to the more common *Erycinidae*, but they are local and seem not to leave their birth-place. Life-history unknown.
- cecilia*. **M. cecilia** Cr. (122 i). The first form published by this name is a ♀, above bright orange-red with a broad black apical part of the forewing, containing a yellow crescentiform band, and a row of yellowish

spots in the margin of the hindwing. This form flies, almost without exhibiting any deviations, from Panama and Guiana to Ecuador. The ♂ of it is an animal with a small orange-red subapical spot as is seen from our figure (according to a Surinam-specimen). — In *magnarea* *form. nov.* (122 i) the subapical spot in both sexes is about three times as large, and in the ♀ the yellow spots in the margin of the hindwing flow together into a band; from the Amazon (Pebas, Humayta) to Bolivia. — *amithrata* *form. nov.* (122 i) has the forewings like the typical form, but the row of spots in the margin of the hindwing is absent or only indicated; Peru. — In *chrysomela* *Bltr.* (122 h, i) the ♂ has above no subapical spot at all, while the ♀ has in the distal part of the forewing instead of the yellow oval, a white macular band reaching down as far as the anal angle. Central America, Colombia as far as Ecuador. — *vitellia* *ab. nov.* (122 i) are ♂♂ with yellow instead of dark orange-red ground-colour; from Costa Rica. All these forms seem not to be bound to a certain country; at any rate, however, the single forms, as far as they are not individual aberrations, strictly separated according to the habitats. The butterflies are, wherever they occur, not rare and like to be near the water, like the following genus, too.

3. Genus: *Helicopis* F.

Whereas the *Methonella* had conic teeth at the ends of the veins of the hindwings, we find in the *Helicopis* sabre-shaped tails of a length of up to a centimetre. Another characteristic for the members of this genus are metallic drops on the under surface of the hindwings, which may be of a variable lustre, so that they appear in a certain light golden, in another silvery. As we have already mentioned in the preface to this family, these drop-like spots are plastic, like impressed gold-printing, convex towards the under surface, on the upper surface distinguishable as shallow excavations. There are only few species, mostly replacing each other. The larvae are white with a red neck-organ formed of many small cones; they are transformed into brown pupae held with a belt, being provided with fluffy hairs like the larvae and bearing likewise the scarlet organ in the neck. The butterflies mostly rest near the water on the under surface of leaves, are easily knocked off, fly, however, very lazily and soon settle down again, so that they are easily taken. The children of the natives are sometimes seen playing with them, and the Indians have given them a special name signifying as much as „small animals of love“, a peculiar correspondence of denomination with LINNÉ who named the first *Helicopis* known „cupido“. The butterflies are local, but common at their flying-places; only in the confines, as for instance South Brazil, they grow rare.

H. cupido L. (124 a). Black, forewings with a large light-yellow discal spot, hindwings with a dirty yellow basal part. In the ♀ the yellow colour is preponderant, only the distal margin of the forewing is black, that of the hindwing brown. Colombian ♀♀ often exhibit in the apical part of the hindwing more a nut-brown darkening; in ♀♀ from Sao Paulo de Olivença (Upper Amazon), the distal part of the hindwing is almost entirely black as in the ♂. Amazon-♀♀ (Para, Itaituba) often have an oblique stripe above the cell-end; in specimens from there, the cell of the forewing and the basal part below it are of a bright orange-yellow, and as they have hereby quite a different appearance, I denominate them *erotica* *form. nov.* (124 a). — *trinitatis* *form. nov.* (124 a) are specimens from the Island of Trinidad in which the border of the forewing is only narrow and of a dull dark tinge, but where the brown colouring is continued as far as below the cell and where a dull oblique shade, coming from the costa, confines the cell. In ♂♂ from Trinidad this marking is constant, while among the ♀♀ there occur beside the figured butterflies also such that are nearly quite bone-white and without markings, which were also found in other places in South America. There they may occur in superior numbers, so that one might be inclined to denote them as a subspecies (GROTE). Nearly quite white specimens have been denominated *ab. lindeni* *Gr.* (124 b as *lindeni*). — *divergens* *subsp. nov.* (124 b) is a very large race which almost entirely lacks the orange-yellow basal spot of the forewings beneath, whereas the ground of the hindwings is golden brown; from Humayta on the Rio Madeira. Most peculiar are specimens that are above without markings, like *lindeni*, beneath, however, on the forewing black and orange spotted. The figured specimen (in the Tring Museum without the habitat being mentioned) resembles beneath a typical *cupido* except the missing dark margin of the forewing, it is above purely bone-white and has only at the base of the forewing a slight ochreous tinge. I call the strange animal *ab. stupenda* *ab. nov.* (124 b). — The larva is white of a silky gloss, with delicately grey shadowy stripes on the sides of the back and above the stigmata. The hairs are also fine white, and behind the head as well as at the 12th segment there are red pads being undoubtedly warning-organs. The pupa, being of a light yellowish-brownish or greenish-brownish ground-colour, exhibits a white fluff and the bright scarlet at the end of the head. The range of the whole species comprises the eastern part of South America and extends from Trinidad and the northern coast of South America as far as South Brazil where, however, the butterfly grows extremely rare. In Espiritu Santo it is found yet now and then, in Santos I did not capture it, nor did v. BÖNNINGHAUSEN near Rio.

H. endymion Cr. (= *selene* *Fldr.*) (124 b, c). Forewings bone-white, with fine black margins, in the ♂ with a broad rust-brown base. Hindwings also bone-white, at the distal marginal part broad black. Beneath, the base of the wings is orange and terminates with 2, sometimes contiguous black transverse spots, another such a spot extends, behind the cell-end, from the costa into the wing. In the ♀ the basal brown above is

absent and the oblique transverse spots beneath in the forewing, and in the hindwing, as well as in many ♂♂, *elegans*. the black of the distal marginal part beneath is replaced by yellowish-brown. — *elegans* *Kaye* originates from *tatmicus*. Trinidad, though it also occurs in Guiana; it entirely resembles the figured *latmicus* *form. nov.* (124 c), but it has in the black margin of the forewing a white line, and before the distal margin of the hindwings there are no black dots which appear in *elegans* as diaphanous effects of the golden drops of the under surface. Guiana, locally not rare.

acis. **H. acis** *F.* (= *gnidus* *F.*) (124 c). One of the most beautiful butterflies of the neotropical district. In the ♂ the basal part of the forewing is velvety-brown, the distal part sulphurous, with a broad black margin; hindwing inside orange, outside black. In the ♀ also the basal part of the forewing is orange. The metallic spotting of the under surface of the hindwing is very copious. The species varies somewhat in the width of the black margins. The butterflies are local and mostly rather rare, but widely distributed over the northern part of South America, Guiana, the district of the Orinoco and of the Amazon. Larva white, with white hairs, a grey dorsal stripe and a scarlet neck-tuft; pupa brown, with black markings and with bunches of red cones at the anterior and posterior ends.

4. Genus: **Hades** *Ww.*

This genus exhibits relationships to the Lycaenid-genus *Eumæus* (cf. t. 146 a), in a mimetic respect it resembles the Nymphalid-genus *Morpheus*, together with which it flies in some countries. The antennae are quite gradually thickened, with 50 joints; 9 or 10 joints form the feeble club. The wings are large, broad, entire, the forewings in the ♂ with 4, in the ♀ with 3 subcostal veins. The first of these branches off before, the second at the cell-end, the median veins rise equally distant from each other. The larvae of *noctula* pupate in groups on certain leaves, for which reason also the butterflies appear in crowds. This is very curious, because also the Nymphalid *Morpheus ehrenbergii* *Hbn.* (93 a) serving as model lives gregariously and the original and the copy unite themselves at common flying-places. The pupa is placed horizontally across the leaf, all the pupae of the whole group in exactly the same direction and at a considerable distance from each other. The butterflies are local, but common.

noctula. **H. noctula** *Ww.* (= *paradoxa* *Fldr.*) (123 a). Black, hindwing beneath with a brick-red basal spot and bone-coloured internerval stripes. Immediately distinguishable from its original (*Morpheus ehrenbergii*) by the extremely short palpi. Mexico, Central America as far as to the Amazon, Colombia, Venezuela.

hecamede. **H. hecamede** *Hew.* (123 a). Above black, forewing with a large brick-red longitudinal spot, hindwing of the ♂ in the distal part silvery blue. According to the altitude and position of the habitat the spot of the forewing may be lighter or darker red, larger (*haematites* *Stich.*) or smaller (*avicula* *Stich.*); in the ♂ the greyish-blue of the hindwings may be increased or reduced, in the ♀ the brown ground-colour more intense or duller. Ecuador, not so common as the preceding species.

3. Subfamily: **Erycininae.**

This subfamily contains the immense multitude of real *Erycinidae*. It differs from the other families by the above-mentioned formation of the legs (♀ 6, ♂ 4 gressorial feet), from the other neoarctic subfamilies by the veins (constant subcostal veins etc.) which we have mentioned in the *Libytheinae* and *Euselasiinae*. Among each other, however, the genera differ extraordinarily. About 80 of these genera have been generally acknowledged, their grouping, however, is up to this day still based more on superficial marks than on phylogenetic alliances. Apart from the wings being mostly more secondary, we are immediately struck by the two different types of the body: the one series of genera exhibits a structure of the body little differing from that of the other most nearly allied families of day-butterflies (Lycaenids, Nymphalids), as for instance *Eurybia*, *Nymphidium*, *Siseme*, *Baeotis*, *Aricoris*, *Stalachtis* etc.; the other series has a broader head strangulated by a distinct neck, an almost globular, less oval thorax and a very short, clumsy abdomen with a thin waist at the thorax, being often also curved downwards and of an almost fly-like structure. To this group belong very many genera, such as *Syrmatia*, *Diorhina*, *Zeonia*, *Lymnas* etc. Let us only take in comparison how far for instance the abdomen of *Alesa*, especially of the ♂♂, projects beyond the posterior angle of the hindwings, how the head with its enormous eyes rests with a broad base on the thorax, and confront this with a *Lyropteryx*, *Ancyluris*, *Themone*, the knob-like heads of which rest on a thin stylus, the apex of the abdomen, even in the ♂, scarcely extending beyond the middle of the fold of the hindwing. An arrangement according to somewhat more advanced marks of distinction*), than the one resulting from the partial consideration of the veins of the wings, would create a very radical change within the subfamily, though it would also necessitate a circumstantial argumentation for which there is no space left here. As the butterflies belonging

*) SALVIN and GODMAN have closely examined especially the male sexual organs and given circumstantial descriptions of most of them; the structure of these organs, however, proved to be here so very variable, complicated and specialized, that they may be used at most in questions about the qualification as a species, but not for systematizing purposes.

here are mostly small, we were able to offer such a complete illustration that one will easily find one's way, as nearly all the chief forms have been depicted. We have already told in the preface to the family the little we know about the early stages and the habits.

5. Genus: **Eurybia** Hbn.

This genus contains 37 forms of butterflies partly belonging to the largest of the whole family. The body is very slender, the head small, the thorax long, the abdomen in both sexes bilaterally compressed, thin and pointed. The wings are entire, the hindwings with a round border, only in a somewhat deviating group the forewings are pointed falciformly at the apex. The ground-colour is above dark brown, the border of the hindwing often with a ruddle-red tinge. Only in one case the wing is traversed by a broad white band, i. e. in a species flying together with just the same banded species of other genera (*Mesosemia*). The forewings mostly exhibit at the cell-end an eye-spot or ring-spot.

Head broad, forehead broad and flat, eyes of medium size, naked, slightly convex, palpi bent up in front of the face, not projecting, but often brightly coloured; second joint more than twice as long as the first one, the third a minute knob. Antennae very long, reaching about two thirds of the costa-length, thin, at the ends scarcely thickened. Thorax slender, legs short, the legs on being stretched out scarcely reach the anus; abdomen long and slim, mostly extending considerably beyond the anal angle. Wings broad, in the forewing the subcostal is 5-branched, the submedian bifurcated at the base, the cell broad, cuneiform, of different shapes, at the end sometimes more straightly cut off, sometimes angled laciniiformly. The hindwings are sometimes slightly angled between the upper and middle radial-ends.

The *Eurybia* are distributed from Mexico to South Brazil and Bolivia. They are met singly in the woods where they dance about playing on broad roads, as I have already fully described in 1889 in the „Stettiner Zeitung“. Larva and food-plant are unknown. One nowhere finds more than 2 or 3 species at most of the genus, whereas the local subraces are often very limited in space. One sometimes needs only to walk some kilometres away from a flying-place, in order to discover already a difference in the species occurring there. Of course one cannot speak of subspecies then, nor can one denominate all these local races without getting beyond one's depth.

E. carolina Godt. (123 b). This species has a pointed falciform apex of the forewings and an angled border of the hindwings. One of the largest *Eurybia*; the discs of all the wings are traversed by a series of spots being partly vitreous, partly ochre-yellow. The size of the vitreous spots varies a great deal, but it is mostly constant in specimens of the same finding-place. South Brazil, especially Sa. Catharina, not common, resting beneath large leaves; its flight somewhat resembles that of *Emesis fastidiosa* (136 d) flying at the same place. *carolina*.

E. pergaea Hbn.-G. (123 b). This is the second species with a falciform apex. Smaller, unicolorous grey without the macular series of the former species, only behind the upper cellular angle a white small, dot-like vitreous spot and sometimes another smaller one behind it. Likewise known from South Brazil, where the species, however, is not common; but it is probably more widely spread in South America. *pergaea*.

E. nicaeus F. (123 b). As typical *nicæus* I consider the small form from the upper Amazon, as it flies quite similarly in Venezuela. The eye-spot at the cell-end is comparatively small, the hindwings are all over suffused with ruddle-red. — **salome** Cr. (123 b) from Guiana is somewhat larger, the distal part of the hindwing of a brighter red, both wings on both sides with somewhat brighter spots, the eye-spot of the forewing larger. — In **erythrinosa** Stich. from Ecuador and Colombia the red is reported to cover half the hindwing. — South Brazilian specimens have a dull, though most beautiful violet lustre on the hindwings. In Sa. Catharina the species has yet the size of *salome*, and the dark submarginal spots of the hindwings are in broad red rings, proximally with a broad red tinge and sometimes with black cuneiform spots (**molochina** Stich.), sometimes without them (**diffusa** Stich.). Still farther to the south the form is again of the size of typical *nicæus* and the violet reflection grows very intense, whereas the red of the distal half of the hindwing is darkened. But this varies, like in other *Erycinidae*, almost with every geographical mile. Specimens from the Monte Corcovado near Rio de Janeiro (= **hyacinthina** Stich.) (123 c) are always larger and redder than those from the forests to the south of that town (their forewings measuring not more than 24 mm, while the Corcovado-♂♂ have exactly 26 mm), whereas all the specimens found at one place exhibit the most exact likeness in size and colouring. We figure a ♂ from the Monte Corcovado and one which I took near Santos, and we can distinctly perceive the difference being absolutely constant (there are series of both the habitats before me); STICHEL'S *hyacinthina* is presumably based on one of these forms. *nicæus*.
salome.
erythrinosa.
molochina.
diffusa.
hyacinthina.

E. dardus F. (= *upis* Hbn.) (123 c). The name-type is nearly the smallest of the whole, very long series of forms. Differing from the former by a much larger, jet-black eye-spot of the forewing, with a light ring around it, and by the absence of the red at the border of the hindwing. Between the eye-spot and the submarginal series of ring-spots, another distinct whitish series of dots is inserted. Guiana and the Amazon *dardus*.

- misellivestis*. District. In the south of Brazil one sometimes finds almost unmarked specimens = *misellivestis* *Stich.*, in which the eye-spot of the forewing may also be absent *). — Considerably larger is the form from Ecuador and the western district of the Amazon; this is *jemima* *Hew.* (123 c). — In *sinnaces* *Druce*, which is besides *jemima*, certainly more closely allied to *lamia* and has a superficial likeness to *leucolopha* (123 e), the otherwise greyish-yellow ring-markings are red. — *franciscana* *Fldr.* is the Bahia-form with a moderately intense blue reflection and bright yellow rings of the hindwings, the ♀ having a round eye-spot like the ♂. *FELDER* includes with his *franciscana*-♂ a ♀ from the Rio Negro with a „differently shaped“ eye-spot of the forewing which of course does not belong to *franciscana*. — *STICHEL* denominates the forms from the north-western part of South America, being mostly without any reflection and with red rings of the hindwings, *annulata*, if the latter are narrow, *rubeolata*, if they are broader and diffuse; the latter form occurs more to the south. — *unxia* *Salv. ann. cit.* and *Godm.* (123 d) from Central America and the neighbouring Colombia has a deep blackish-brown ground-colour, and the eye-spot of the forewing encircled by a dull brownish-red is often blurred, small, not round, appearing four-cornered or somewhat diffuse; on the under surface we often notice 4 eye-spots, one on each wing, which are, however, mostly distorted, while in *dardus* and *jemima* the eye-spots of the forewings are beneath just as round as above. We cannot speak of subspecies, although the *unxia* of the different finding-places, even at quite little distances, are constant, and alone in the collection of the Tring Museum there are large series illustrating this behaviour. In Peru and Bolivia *unxia* grows very large; we figure a Peru-specimen from the under surface, in which we distinctly notice the 4 distorted eye-spots. — *FASSL* discovered, on the East Colombian mountains at an elevation of about 2000 m, a very small alpine form attaining scarcely half the size of a typical *unxia* and having been denominated in our figure (123 d) *fassli*. — *sannio* *Stich.* from the Rio Pachitea in East Peru I cannot separate from *fassli*. — All the *dardus*-forms are rather common in their range and, like in most of the *Erycinidae*, the specimens from the same finding-place resemble each other exactly.
- lamia*. **E. *lamia*** *Cr.* (= *dardus* *Ww.* nec *F.*) (123 d). About a dozen of very constant local races are distributed over the whole northern part of South America and over Central America. The typical form resembles pretty much *jemima* (123 c), though it is smaller and the marginal rings are smaller and more separated, being also generally farther away from the border. The typical *lamia* comes from Guiana. The model for our figure originates from Peru and belongs already to a larger subrace. — Still larger are Central Americans which wherever they fly together with *lycisca* of a very bright blue reflection, have likewise very bright hindwings of a metallic cyan-blue reflection. But in certain localities the reflection is absent altogether, while in others it is faint, sometimes hardly noticeable according to the locality. Where it is so intense that they might be mistaken for *lycisca*, both are easily distinguishable by the blue *lamia*-form having behind the cell-end 2 small white vitreous dots being always absent in *lycisca*. According to the intensity of the blue gloss, the forms have been denominated, as for instance *lauta* *Stich.* (without), *coerulescens* *Drc.* (123 d) (with a faint), *fulgens* *Stich.* (with an intense blue lustre). Proceeding thus, we should be forced to give innumerable names, since besides the blue varies in extent and is sometimes distinct only in the disc of the hindwing, sometimes covering the whole hindwing and in certain places even extending over the forewing. The size also varies constantly almost at every habitat, being characteristic for the locality, but not for the season.
- leucolopha*. **E. *leucolopha*** *Thieme* (123 e). Nearly allied to the large forms of the two preceding species, but more constant, not varying so much according to the locality and at any rate less distributed. The ♂ is deep blackish-brown, with fiery red eye-spot rings and marginal rings, easily recognizable by a bright silvery-white point of the antenna; the ♀ is larger, of darker and duller colours. A great number of specimens before me, from Ecuador, Peru (Pebas), and Bolivia. Apparently very common in its range.
- latifasciata*. **E. *latifasciata*** *Hew.* (123 c). Of the same size and structure as the preceding, but of a different appearance owing to a broad white band traversing both the wings, and therefore not recognized as *Eurybia* hitherto. From Peru and, in a form with a narrower band, also from Colombia (Villavicencio). Apparently rather rare. 3 specimens in the Tring Museum; also in *HEWITSON*'s Collection in London. The ♀ exactly like the ♂, beneath like above, only the eye-spot of the forewing less intense.
- halimede*. **E. *halimede*** *Hbn.* (123 e). Recognizable by a row of white dots extending in front of the submarginal row of rings, and by the nearly entire absence of the eye-spot of the forewing, being sometimes only indicated. The most distinct it is in North Brazilians; they also exhibit the row of white dots the most distinctly and completely. In about 100 specimens lying before me, beside the variation of the ground-colour varying from a dull earthy grey to a dark chocolate-brown and almost black, also the row of white dots is variable; specimens from Peru and Bolivia, for instance, always lack the two dots directly behind the cell-end (between the radial-veins) of the forewing, and those on the hindwing are quite faint; this is *stellifera* *Stich.* In specimens from certain localities of the northern part of South America the lowest dots of the row turn inward, so in *elvina* *Stich.*, and in *granulata* *Stich.* (123 e) from Ecuador, in either of which the same case takes place. Sometimes we notice, like in nearly all the *Eurybia*-species, the traces of a violet reflection (= *violaria* *Stich.*). — *passercula* *Stich.* with a faint indication of central shades of the forewings forms a transition to *elvina*. —

*) Such a specimen, with an absolutely extinct marking, is in the Tring Museum.

emidiata Stich. has a slight reflection (thus forming a transition to *violaria*) and in the hindwing larger marginal eye-spots. Teffé. — *tephrias* Stich. shows all the spots of the wings above reduced in size; Matto Grosso. — From Central America to the south as far as Central Brazil and Bolivia. In most of the districts common.

E. lycisca Ww. (123 f). This magnificent species is hitherto known only from Central America, Colombia, and Peru, but locally not rare. Forewings without any white vitreous dots at all, but with a large, sometimes metal-pupilled median eye-spot; hindwings with a bright blue lustre.

E. patrona Weym. Size and forewings almost exactly as in *lycisca*, but the hindwings not with a blue lustre, but with a reddish-yellow marginal marking; the eye-spot of the forewing with a bright metallic pupil, the point of the antenna whitish, but not so silvery white as in *leucolopha*. From Colombia and Ecuador. — *persona* Stgr. (123 f) is probably only a large form of it from Central America. — *promota* Stich. (123 f) seem to be specimens originating from Teffé on the Amazon River. They are somewhat smaller, darker, more unicolorous, and the eye-spot of the forewing is somewhat smaller.

E. cyclopia Stich. (123 f, g). I figure for this a species which I received from Chuchurras in Peru and to which STICHEL's description fits the best of all to the *Eurybia* lying before me. As there does not exist a figure of this insufficiently described species, we reproduce both the sexes and both the surfaces. Characteristic is the fiery-red marking on a deep dark-brown ground, and the 2 small white punctiform spots on the forewing. I remark, however, that I have not seen the type being in a private collection.

E. juturna Fldr. (123 g). Our figure has been compared with FELDER's type lying before me and corresponds exactly with it. The typical *juturna* originates from Surinam and has a light flesh-coloured distal part of the hindwing, in which there are black spots and from where rosy-red bows extend into the brown basal area. — *hari* Weeks is scarcely different, but in some places it occurs much larger; Bolivia and Peru. — *turna* Dogn. (123 g) is likewise larger and has more unicolorous forewings; from Loja in Ecuador. The red of the hindwings is extended almost as far as to the middle cell, but at its proximal margin it encloses 3 or 4 black wedge-shaped spots. In Colombian specimens the latter are absent, so that a resemblance is effected with the Colombian *donna* with which STAUDINGER confounded the species, from which, however, it is immediately distinguishable by the large eye-spot of the forewing, which is absent in *donna* above. STICHEL describes this insignificant form of *turna* as a distinct species and denominates it *helias*.

E. donna Fldr. nec Stgr. (123 g). Immediately recognizable by the unicolorous brown wings with a broad deep red border of the hindwing, in which there are 1 to 5, exceptionally also no black punctiform spots. Colombia, where it was taken at altitudes of up to 500 m (Muzo).

6. Genus: *Mesosemia* Hbn.

This genus rather closely approximates the preceding genus, though it is by no means so uniform. Also here there is in most of the species almost exactly above the middle of the forewing a large eye-spot which often exhibits 2 or 3 white pupils, and where it is absent, one mostly finds yet its traces in the shape of a small central shade or minute cloud. The *Mesosemia* differ from the *Eurybia* by their smaller heads, the shorter antennae, the borders of the forewings being generally slightly curved, the short abdomen mostly not reaching as far as the anal angle, the longer hindwings being often geniculate in the middle of the distal margin, or angularly protended. The row of distal marginal spots of the hindwing is always absent, the hindwings, however, show in the disk more or less parallel transverse stripes. The sexual dimorphism which is not noticed in *Eurybia* is here the rule and mostly very much pronounced. The *Mesosemia* are distributed over the whole of tropical South America and over Central America including Mexico, but they do not cross the frontier of the United States. The butterflies are often met with on blossoms, still oftener on leaves, but they seem to rest much on their under surface in order to come forth only for a short time for the sake of copulation and feeding. Then they perform jerky movements on the leaves, stretching the antennae straight forward, placing the hindwings flat on the leaf and slightly raising the forewings. In this manner they hasten from one leaf to another, from one branch to another, more jumping than flying, as FASSL expresses himself. The butterflies are partly extremely local and some of them are very rare.

I. Group. (*acuta*-Group).

Apex of the forewing extended into a sharp point.

M. acuta Hew. (124 c). This rare butterfly is known to me only from the Organ Mountains from where also the figured specimen originates. Neither v. BÖNNINGHAUSEN nor myself have observed it, however much we have been collecting there. A ♂ in the Coll. v. BÖNNINGHAUSEN is said to originate from Sa. Catharina. Above, the ♂ is velvety blackish-brown with a lighter margin of the wings. Characteristic is the sickle-shaped point of the forewings and the 4 slit eyes in the cells of the under surface.

II. Group. (*eumene*-Group).

Distal half of the wings with 3 parallel transverse stripes.

- nesti*. **M. nesti** Hew. Differing from *acuta* by the characteristic mark of the group and the forewing being in the ♂ only slightly stretched forward, but not ending into a curved point. Beneath exactly as in the following species, but in this the point of the wing is not anymore bent forward. Guiana. — **steli** (124 d). The central eye-spot is above distinct only on the forewing, oblong-triangular with 2 or 3 white pupils. Amazon and Orinoco. STICHEL calls large Amazonas-specimens of *steli* **gigantea**. Rare.
- putli*. **M. putli** *sp. nov.* (124 d). Border of the forewing round, the shadowy stripes parallel to the border are, therefore, in the distal part of the wings also curved, not straight like in *steli* and *nesti*; eye-spot of the forewing round, otherwise like the latter. From Huancabamba; type in the Tring Museum.
- macella*. **M. macella** Hew. (= *marcella* Meng.) (124 d). Very similar to *putli*, smaller, more distinctly striped, the 4 stripes at equal distances from each other, not unequal as in *putli*. The round eye-spot of the forewing is more distinctly prominent. From Teffé (Ega) on the Amazon; before me also from Guiana.
- eumene*. **M. eumene** Cr. (= *hiphia* Hbn.) (124 d, e). ♂ above blackish, ♀ greyish-brown, with a three-dotted central eye-spot, in the distal half of the wings 3 transverse bands the one of which at the border is mostly split in two by an enclosed light line. Beneath there is mostly under the central eye-spot on each wing another eye-spot showing sometimes through above as a shade. From Guiana the range extends over the Amazon District as far as Ecuador, Pera, and Bolivia, at some places not rare, often flying together with similar *Euptychia* (*coelestis*-, *herse*-group). In typical *eumene* (from Guiana) the very intense, steel-blue reflection of the forewing extends as far as the median vein; in **furia** Stich. (124 e) from the Amazon it extends behind the cell of the forewing almost as far as up to the costal margin, in **attalus** *form. nov.* flying in the same countries as the preceding, but at other places (Guiana: Nouveau Chantier; Amazon etc.), the blue reflection does not reach the median. — **erinnya** Stich. (124 e) from Peru and Bolivia is larger, paler, the distal bands more remote; the reflection like in the preceding; — in **eurythmia** Stich. it is absent nearly altogether, so that the ♂ of it looks above like *steli*; Amazon. The form *attalus* was denominated here only because also the other deviations in the extent of the blue reflection have been denominated, what we would otherwise have had to cancel.

III. Group. (*ulriciformes*, *mevaniiformes* Stich.).

♂ above blue, ♀ brown or blue, the latter always white-banded; beneath always brown.

- ulrica*. **M. ulrica** Cr. (= *renatus* F., *ulricella* Hbst., *ultio* Hbn., *tisis* Godt. *rosina* Cr. [♂], *lamprosa* Stich., *loruhama* Stgr. [♀]) (124 e). ♂ above black, with a blue reflection and a central eye-spot hardly noticeable in the dark ground. ♀ brown with a distinct eye-spot of the forewing and a white median band. The ♂ varies in size and blue lustre (in specimens from Villavicencio more steel-blue, in those from Cayenne more ultramarine), furthermore, the transverse stripes of the greyish-brown under surface may be closer together or farther away from each other, they may be more faded or more distinct. In the form **messala** Hew. (124 e) a whitish oblique band appears, being above sometimes more distinct, almost like in *loruhama*, sometimes scarcely in marks of whitish dispersed small scales, beneath, however, always distinct. In the ♀ the white band may be only half as broad as in the figured specimen (as for instance, in Cayenne), sometimes still broader (*lamprosa* Stich.). The butterfly inhabits the whole northern part of South America from Guiana and Colombia to Peru and Bolivia, but it occurs only sparsely and very locally.
- asa*. **M. asa** Hew. (124 e, f). ♂ black, above with a blue reflection, but the distal margin of the wings and the apical part of the forewings broad black. The ♀ (= *frequens* Btlr.) has only on the forewings a white oblique band. Nicaragua as far as Colombia. — **mycene** Hew. (124 f) is hardly separable from *asa*; according to its author, it is more greenish-blue and the eye-spot of the forewing stands more in the blue part of the wing, while in typical *asa* in the black part. On our figure, however, it is just the greenish-blue animal (from Cachabé in Colombia) which has the position of the eye-spot of *asa*, while the violetish-blue one has that of *mycene* which ought to be „green“ according to Hewitson. The differentiation is, therefore, untenable. STICHEL inserts yet between the two forms another one, *asopis*, from Panama, with a more copious black colour of the forewing, the hindwing with a discal transverse streak; ♀ larger, lighter than *asa* ♀. The butterflies fly in the dense forest and are in some districts common.
- messeis*. **M. messeis** Hew. (124 f). To the figured ♀ belongs a ♂ looking almost like *atroculis* of which we figure the ♂ (124 f); but here also the distal stripe of the forewing extends with a short part into the hindwing, like in the much larger *tosca*. — **atroculis** Btlr. is of course only an insignificant deviation, while **tosca** Stgr. (124 f) exhibiting besides stronger black markings, may quite well be specially denominated. Typical *messeis* originate from the Amazon, *tosca* from the Upper Amazon (Pebas and São Paulo do Ollivença). — **amona** Hew. has in the ♂ not the black dot below the eye-spot of the forewing, as *tosca* has, and *amona* comes from Bolivia, not from Pebas. — **junta** Stich. (124 g) forms the transition to the following species which might very well fit into

the species of *messeis*. In *junta*-♂ the hindwing is not traversed by a stripe, but there is only the beginning of a transverse stripe at the apex of the hindwing; the ♀ has a blue basal part of the wings and a broad white band. — *lapilla* *Stich.* exhibits also in the ♂ a faint white band on the upper surface of the forewings. — *battis* *Stich.* has the transverse stripe of the hindwing like *tosca* and *atroculis*, but on the forewing the exterior one of the two black transverse stripes is indistinct between the central eye-spot and the distal margin. The ♀ of all these forms are broad-banded. The whole range of these very closely allied forms extends from the Amazon to Ecuador, Bolivia and Peru, and the butterflies are not rare, wherever they occur. *lapilla.*
battis.

M. loruhama *Hew.* (124 g) greatly approximates the former species, but it differs in the ♂ by a white oblique band on the under surface of the forewing, occurring also above, though much narrower; the ♀ has only on the forewing a white band overlapping in typical specimens on the apex of the hindwing at most with a very small tip; only in the more strongly banded form *candara* *Drc.* it winds gradually disappearing, through the greater part of the hindwing (*aesthetica* *Stich.*), while in the forewing it exhibits double the width, as in our figure of *loruhama*-♀. If the ♂ lacks the white oblique band of the upper surface (= *syntrepha* *Stich.*), *candara* is nevertheless distinguishable from the white-banded ♂♂ of *junta* and their allies by the absence of a transverse shade between the central eye-spot ring and the marginal band, so that its appearance approximates *adelphina* *Stich.* (124 g) in which the ♂ has an entirely bluish-green upper surface without white or black transverse stripes; only the central eye-spot, an arcuate line around this, and the borders of the wings are black; Ecuador and Peru. Moreover, all the denominations of these sideforms are of no account, because there occur all the transitions from one form to another. From the same district (from the Pozuzo) there are quite blue ♂♂ before me, furthermore such where only few, hardly perceptible, white small scales indicate the oblique band in the forewing, and such possessing the latter in different widths (only as a streak or as a real band). Of a similar variability are the ♀♀; but even those with little or without any blue in the disc are always distinguishable from the white-banded species of the *thymetus*-, *ama*- or *marsidia*-group by the absence of a number of dark parallel lines before the white band of the hindwing. The habitat of the species is Peru, particularly the river-basins of the Ucayali and of the Huallaga, and Ecuador; the butterfly is locally common. *loruhama.*
candara.
adelphina.

M. mevania *Hew.* (= *meletia* *Fldr.*) (124 h) is, to a certain degree, an enlarged edition of *loruhama*, in which, however, the apex of the forewing and the distal margin are broader black. Like there, the white oblique band may be only a light shading (typical ♂♂, from Colombia), or a white streak (forma *munda* *Stich.*, 124 h), a curved band blackened towards the proximal margin (fa. *mimallonis* *Stich.* [124 h] from Ecuador), or a broad white band (fa. *magnesia* *Stich.* [124 h], from South Peru). — In *mamilia* *Hew.* (124 h) it has turned an oblique oval spot in the ♀, in the place of which the ♂ exhibits a narrow, curved, blue stripe (STICHEL); this form replaces *mevania* in some places of Ecuador and it is hardly to be considered a separate species, but only a subspecies, as there occur transitions to all the differences in the marking. — Probably also *mancia* *Hew.* (125 a) is nothing but a strongly deviating form of *mevania* from the Chimborasso. Here the band has turned a large white spot reaching even the eye-spot which it even sometimes distorts or flattens out. The width of the band increases also in the other *mevania*-forms with the altitude of the habitat, and the original of our *mancia*-figure was captured at an altitude of more than 3000 m at the bank of the Chimbo River. *mevania* are generally common in their range; they fly in the dark forest where the sun passes through open spaces (FASSEL). *mevania.*
munda.
mimallonis.
magnesia.
mamilia.
mancia.

IV. Group. (*Teratophthalma* *Stich.*).

Central eye-spot large, encircled by a red ring, often cornered; shape of wings similar to the preceding group, ♂ not blue.

M. axilla *Drc.* (125 a, as *albiflua*). Blackish-brown with a broad white band and a large, somewhat cornered eye-spot of the forewing with a yellowish-red ring around it. Beneath there is always an interrupted row of small white spots before the border, which may also appear above (= *vegeta* *Stich.*). Beneath there are also in the cell reddish-yellow markings, which may likewise as often show through above, as not. The band varies considerably in width, but it always traverses the middle in a bow. Bolivia and Peru; common. *axilla.*

M. marsidia *Hew.* replaces *axilla* in Ecuador and is easily distinguishable by the band of the forewing being narrow and stretched (as an oblique macular band) and the band of the hindwing traversing the wing as a narrow or entirely indistinct band (as a small blind band). — In *lactifusa* *Stich.* the band of the hindwing is absent beneath, while it is present above. — In *marigemina* *Stich.* it is only yet preserved above in the costal part, while it is extinct at the back. Ecuador. — Of all the *marsidia*-specimens before me there are not two that are quite alike, and none resembles exactly one of the two (likewise differing) figures of HEWITSON. *marsidia.*
lactifusa.
marigemina.

M. maenades *Hew.* (125 a) is also very nearly allied to the preceding; here the band of the forewing is placed more obliquely and more distinctly divided into oviform spots by the veins, mostly also more hyaline; from Colombia. — *bacche* *subsp. nov.* I call a gigantic form of this species, with broader wings, a very bright *maenades.*
bacche.

reddish yellow- and white-marked under surface and a band of the forewing being entirely dissolved into spots in an anal direction. FASSL discovered it in the valley of the Rio Aguaca (Western Cordilleras of Colombia). The hindwings are here without bands on both surfaces. — *monochroma* Stich. (125 a) from Peru has the ground-colour, size and shape of wings of *bacche*, but the white band of the forewing is absent altogether and beneath the white marking is reduced. — *coronata* Stich. has the macular band of the forewings more curved and also on the hindwing a macular band. Ecuador. — The large forms are rare.

marsena. **M. marsena** Hew. Size, shape and exterior like in *semivitrea* form. nov. (125 a), except that the hyaline brightening covers also the whole disc of the forewing and the hindwing as far as to the base. The typical *marpolyplusia*. *sena* comes from Ecuador, but it is not common; *semivitrea* originates from Huanaco in Peru. — *polyplusia* Stich. is an intermediate form in which only a chain of obsolete hyaline spots passes behind the central eye-spot; from South East Peru.

phelina. **M. phelina** Fldr. (125 a) has entirely the marking and colouring of the preceding and varies also equally, but the forewings are more stretched, the border more uniformly round, the hindwings in the middle of the border neither cornered nor protracted. In and behind the cell of the forewing, and between the veins of the hindwing, there are bright white patches, so that the type of an Ithomiid from the same region (*Leucothyris tigilla*) is produced. Except in the shape of the wings, there is a chief difference in the much smaller eye-spot of the forewing, as well as in the band of the forewing being less hyaline than white-scaled. Also of this species there exists a form exhibiting the marking of *polyplusia*, but being immediately distinguishable as a *phelina*-form by the small eye-spot, the hindwings being not angular and the white-coloured spots of the forewing; FASSL took it on the Upper Rio Negro (Colombia) at an altitude of 800 m; I denominate it *analoga*. *minima*. *subsp. nov.* — *minima* *subsp. nov.* is an only half as large form from Villavicencio, likewise discovered by FASSL. It is so small that it might be taken for a *Compsoteria* or *Ithomiola*; above almost exactly coloured like *analoga*, but beneath all the light places are more densely scaled in white.

V. Group. (*gaudioli-* and *telegoniiformes* Stich.).

♂ with a pointed forewing and an angular hindwing, above with blue markings or a metal-blue band.

gaudiolum. **M. gaudiolum** Bat. (125 b). ♂ above black, forewing with a broad blue oblique band, hindwing with an equal distal band. ♀♀ on both sides similarly marked as the ♂ beneath; with a double transverse streak in the middle of the wings, a distinct central eye-spot and a dull transverse shade; above the distal part of the wings has a more or less bluish tinge. Mexico to Costa Rica. Rare.

grandis. **M. grandis** Drc. (125 b) is very similar, larger, beneath there is another eye-spot below the middle; the ♂ has, besides, more sharply angled hindwings, and the blue band of the forewing is steeper. None of the ♀♀ examined exhibits a white band. The butterflies inhabit the southern part of Central America and are rare.

sibyllina. **M. sibyllina** Stgr. (125 b) probably scarcely belongs here. It lies before me in but one ♀ from Cachabé. It somewhat differs from STAUDINGER's figure, since the enclosures of the eye-spot in the cell and the eye-spot below the cell, which are noticeable only beneath in STAUDINGER's figure, are here distinctly seen also above. Undoubtedly rare; maybe the ♀ of a ♂ known long ago. The ♂ is said to be blue above, according to STICHEL.

telegone. **M. telegone** Bsd. (= *lamachus* Hew.) (125 f). Shape like *gaudiolum*, but the forewing with a central eye-spot and light bands. Hindwings violetish-blue. Honduras to Costa Rica; it occurs also yet beyond the Mexican frontier, where it is, however, soon replaced by a form with indigo-(not violetish-)blue hindwings; this is *tetrica* Stich. (= *methion* G. and S.), which lies before me in numerous specimens from Misantla, where it seems to be very common. FASSL sent from the Cauca Valley specimens the hindwings of which are more uniformly covered with lilac, without the indigo-blue costal part; this is *amiana* Fldr. (125 f) occurring from *paramba*. Venezuela to Panama, where it is replaced by the typical *telegone*. — *paramba* Drc. (125 f) from Peru has very dark forewings without bands above. In the hindwing the bands are incomplete, too. In the ♂ the blue of the hindwings extends on the inner marginal part of the forewing. — By the i. l.-name of *amanda* (125 g) there was in FELDER's collection a large form the bright, more lilac-blue colour of which covers both wings completely in the ♂ leaving only quite a fine costal stripe of the forewings brown. Still more deviating is the ♀ which has a very much more metallic, almost silvery-blue distal part of the hindwing. In FELDER's specimens there was no patria stated, but there lie before me numerous similar specimens from Muzo and Guadalupe in Cundinamarca (Colombia) so that I presume here an alpine form. Interspersed like an island, from Nicaragua to Panama, seems the occurrence of *carissima* Bates (125 g). It shows rounded hindwings with a black margin, the disc of which is of an extremely bright metallic cyanous-blue lustre and without any markings and black stripes at all. *telegone* occurs very locally and always deviating according to the flying-places, in which, however, it is rather common.

VI. Group. (*odice*-Group.)

Shape of the forewings as in *telegone*, pointed with a curved margin. Hindwing only slightly angled in the middle of the margin or quite round. Without blue reflection, but with transverse lines.

M. odice Godt. (125 e, f). An insignificant, earthy brown butterfly varying uncommonly, especially *odice*, in the course of the double transverse lines, as seen from our figure. ♀ only somewhat larger and with broader wings than the ♂. These lines run differently at every flying-place, similar to the size and shape of the eye-spot of the forewing. Specimens before me from Espiritu Santo and Rio de Janeiro have quite straight lines of the hindwings; those from Rio de Janeiro and Argentina (Misiones) exhibit them serrated. Specimens from Petropolis, where I found the animal singly, hold the balance between these two; a subspecies (*cymatodis* Stich.) can, therefore, not be founded on the serrated course of these lines. — **cymotaxis** Stich. is unknown to me; *cymotaxis*, it is said to be from „Brazil“ and to differ also by the course of the discal lines which run together posteriorly inclosing a reniform spot. I believe that they are only slightly varying *odice*, the lines of which, as mentioned above, run differently at every habitat.

M. rhodia Godt. (125 f). ♂ much darker; easily recognizable by the transverse line of the hindwing *rhodia*, being above single, not double as in *odice*. The ♀ is not so red as reproduced in our somewhat exaggerated figure, but more earthy grey, almost like a *telegone*-♀ without blue reflection. Espiritu Santo, Rio de Janeiro, singly. — **friburgensis** Schs. (125 f) is somewhat smaller (specimens from Novo-Friburgo) or very much smaller *friburgensis* (specimens from Curitiba). It stands between *rhodia* and *odice*, being lighter than the former, but darker than *odice*; the hindwing has 2 lines running exactly parallel and almost quite straight. The species seems not to be rare near Novo-Friburgo in South Brazil, from where the original of our figure is.

VII. Group. (*menoetes*-Group.)

M. antaerice Hew. (125 d). In the marking almost exactly as *friburgensis*, but the spaces between *antaerice*, the dark transverse stripes are of a metallic dark blue gloss, though by no means so intense as in HEWITSON's original figure. The ♀ of it appears to me to be *maeotis* Hew. (his fig. 50 *). It is little larger, light grey, but with exactly the markings of the ♂, except the lower part of the median area of the forewing being not entirely black, but only bordered and marked in dark. Guiana to Trinidad and the Amazon; not common. — **veneris** Btlr., maybe a proper species, is considerably larger, darker, but finely and sharply marked; from South *veneris*, Brazil.

M. menoetes Hew. (125 d). ♂ quite similar to the preceding, but the transverse stripes particularly *menoetes*, on the hindwing broader, more band-like; the colouring darker, so that the marking is to be seen only in a certain light. The ♀ with more grey and more sparse markings, and not such pointed wings as in our figure. Typical *menoetes* fly on the Amazon, though they are not common; they have a scarcely noticeable bluish lustre, being distinct only in very bright sunshine. Specimens from the Rio Songo in Bolivia have none at all, others from other places of Bolivia, from Guiana etc., have a more intense violet lustre (= *menecnia* Stich.). The ♀♀ are easily recognized by the upper and under surfaces being powdered with yellowish-grey.

M. meeda Hew. (125 a) the ♀ of which I do not know and which is said to occur in „Brazil“, *meeda*, is almost of just the same colour as the following *carderi*, but the undersurface exhibits less transverse lines.

M. carderi Drc. (142 d) greatly resembles the preceding in the male. From the direction of the anal *carderi*, angle, the blue marginal band of the hindwing is pierced by the beginning of a small, thin, black stripe which, however, disappears before the middle of the wing. The under surface shows very distinct bands and its ground-colour is quite faintly tinged in violettish-grey. From Muzo in Colombia which has supplied the greatest part of the so-called „Bogotá-Collections“. Not common.

M. orbona Godm. (125 c) has an under surface with still brighter bands, and in the ♂ being above *orbona*, very near to the preceding, the short anal black stripe in the blue marginal band of the hindwing has been supplemented to a complete arcuate stripe extending to the apex of the hindwing. Guiana and Colombia. — **thyas** *thyas*, Stich. (142 d) which is unknown to me, was based on a couple the ♂ of which originates from Peru, the ♀ from Surinam. We reproduce the ♀ according to the type; but I think it doubtful whether the ♂ exhibiting almost the colours and markings of an *epidius*-♂ (125 c) belongs here. — **thera** Godm. (125 d) which I figure *thera*, according to a specimen from the Auna River which I have compared with the type in the Coll. GODMAN, has a broader black median area, the blue distal stripes are narrower and the eye-spot of the forewing is more finely encircled. All these species greatly approximate *epidius*, and it is most likely that they are only races or even only subraces of it. The ♀ is recognizable by the great number of parallel lines in the hindwing being especially prominent beneath.

*) *M. maeotis*. Stich. with an azure ♂ seems to be quite a different species (cf. p. 643) the ♀ of which is almost just the same marked as HEWITSON's *maeotis*, but which has the shape of the ♂ belonging to it, thus not having pointed wings.

- epidius*. **M. epidius** Hew. (125 c). The ♂ is scarcely discernible from some ♂♂ of the *orbona*-forms, except the otherwise black median area of the forewings being interspersed with somewhat more blue. The ♀ exhibits bright and abundant markings, but there are also such where the markings, of the distal half, especially in the hindwing, are obliterated by ochre-yellow or white clouds; on such a specimen with an intensely white distal half of the hindwing, STICHEL's **chionodes** (142 d) has been based. — **hypermegala** are large ♀♀, in which there are before the eye-spot of the forewing two transverse lines, instead of $1\frac{1}{2}$ as in the typical *epidius*. — **bella** Sharpe has somewhat different bands in the ♂ beneath, in the ♀ also above: the median lines are more finely undulate and the shadow-like band before the border stands farther apart from the posterior small transverse band. — **mathania** Schs. is again based only on the ♀ originating from Bolivia and Peru; it is very doubtful whether it does not belong to one of the differently denominated ♂♂, the ♀♀ of which are unknown. According to the description, it differs but little from the forms known of the *epidius*-♀. *epidius* and its forms are distributed over the whole northern part of South America as far as South Brazil, Bolivia and Peru, but they are met with only singly.
- phace*. **M. phace** Godm. (125 d) from British Guiana approximates the preceding, but here also the median area of the wings in the ♂ is greatly interspersed with blue, so that the upper surface appears banded in blue almost like a zebra. The ♀ is unknown to me.
- cecropia*. **M. cecropia** Drc. (125 b) from Central America which I figure according to a specimen from Esperanza in Costa Rica, on the contrary is above quite black except some blue in the forewing and a narrow border of the hindwing. Is the most closely allied to *carderi*. The largest species of the group.
- albipuncta*. **M. albipuncta** Schs. (142 d) of which we copy the original figure (the ♀ is unknown), originates from Esperanza in Costa Rica. Wings above blue with a broad black border. The description mentions a white dot at the end of the cell of the forewing, being absent, however, in the figure.
- mehida*. **M. mehida** Hew. (125 d). This species is immediately recognizable by the intensely sky-blue shining upper surface, as the wings have only a black margin (being double at the distal border). Beneath the species entirely resembles *zorea*, but the transverse shades and -lines are not so distinctly prominent. I do not know the ♀; at any rate it resembles pretty much the ♀ of *zorea*; STICHEL adds a ♀ with a white band of the forewing. Rare; from Ecuador, before me only from the lowlands.
- metuana*. **M. metuana** Hew. (125 g). The white-banded ♀ is recognizable according to our figure; beneath the white band is exactly as above; characteristic is the arcuate line encircling the eye-spot of the forewing, running behind the eye-spot quite straight to the inner margin. The ♂ is not known to me; it probably resembles the figured *fassli*, though with narrower and less dull blue transverse bands. — **chalybea** Rüb. (142 d) we reproduce in both sexes. There is a characteristic difference in the course of the arcuate line in the forewing, bending in like a tooth towards the base, before it reaches the inner margin. The ♀ has no white band of the forewing. This form as well as typical *metuana* come from Colombia. — So is **fassli** form. nov. (125 c) in the ♂♂ of which also the basal area of the forewing, being almost uniformly black in *chalybea*, is almost entirely blue, with some black markings. The ♀ has a just as broad white band of the forewing as *metuana*, though it ends more abruptly and also runs much straighter than in *metuana*. — **glaucoma** Stich. (142 e) is the Bolivian form; like *fassli* with a blue (in *chalybea* brown) disc of the forewing beneath; the basal third of the hindwing being in *fassli* quite blue with very little black marking, is black in *glaucoma*. The ♀ of *glaucoma* greatly resembles the ♀ of *fassli* from Colombia, but by very broad and intense transverse shades, the umber-brown ground-colour of the upper surface is reduced to narrow bands; both sexes of my specimens of *glaucoma* exhibit beneath a very fine light and dark powdering which of course cannot be well reproduced in a figure, but which occurs repeatedly in Bolivian *Erycinidae*. STICHEL's figure of the ♂ exhibits on the hindwing another (proximal) blue stripe indicated; in any case, the original comes from another habitat of Bolivia. — **ama** Hew. (125 b) is easily discernible by the broader blue band in the distal part of the forewing of the ♂ and by the white band of the forewing being continued in the ♀ also on the hindwing though much narrower. Ecuador. On the whole, all the forms stated here probably belong to one species, i. e. represent one another in the different finding-places, but replace one another already at little distances. Exactly alike are probably only specimens from the same finding-place. To such a subspecies **destituta** Stich. may also belong (described according to a ♀ from Rio Vitaco), with a posteriorly tapering white band of the forewing of 2,5 mm width.
- zorea*. **M. zorea** Hew. (125 e). ♂ above blue with a narrow black border and the discal line running semi-circularly round the eye-spot of the forewing and traversing the hindwing. Before the border of the wings there is no black transverse band anymore, but the black border is said to be crossed by a blue stripe in Chanchamayo-specimens (= *toparcha* Stich.). The ♀ which is unknown to me in nature, we reproduce according to HEWITSON's figure. Peru and Bolivia. Not common. — **reba** Hew. (125 e) has a small white subapical band, also in the ♂, otherwise quite like *zorea*. From Ecuador, as well as the finer banded **aguilata** Dogn.

M. praeculta *Stich.* (142 e) has above a black border of the wings; across the wing there run besides *praeculta*. 3 black stripes the position of which is shown in the figure. There is only 1 ♂ before me from FASSL's collection, having been captured on the Rio Songo in Bolivia, 750 m.

M. zikla *Hew.* from Ecuador exhibits the white band of the forewing, which in *reba* (125 e) reaches *zikla*. only as far as to the centre of the wings, running from the costa as far as before the anal angle of the hindwings; the whole apical and distal marginal part of the forewings is black. Besides, however, the disc of the forewing and the distal part of the hindwing are traversed by numerous transverse stripes of different thickness. — **ozora** *Hew.* (125 d) has fewer of such transverse stripes; on the forewing those before the eye-*ozora*. spot are absent altogether, on the hindwing only 4 (instead of 5 or 6) are complete. The ♀ exhibits a very broad white band of the forewing, beginning broad behind the middle of the costa and ending just as broad before the end of the inner margin. Likewise from Ecuador.

M. macrina *Fldr.* (= *yaporogosa* *Mengel*) (125 g). The ♂ of this species differs from the *reba*-♂ by *macrina*. another black stripe being placed about the centre between the black discal stripe and the distal margin. The proximal discal stripe passes directly over into the small white band of the forewing; the latter appears beneath much broader. In the ♀ (= *mustela*-♀ *Stich.*) the small white band extends as far as to the inner margin not only on the forewing, but it may be also continued thinner on the hindwing. — In **mustela** *Hew.* (142 a) the *mustela*. small white band is in the ♀ scarcely stronger than in *macrina*-♂ and is entirely absent in the ♂, where it is replaced by the continuation of the black proximal discal stripe. Moreover, the black discal stripes are here otherwise thinner and duller, especially in the hindwing. Both forms are found in Colombia.

M. myrmecias *Stich.* (142 a). ♂ jet-black, in the costal marginal part and near the border brightened *myrmecias*. up by a lighter brownish-grey, the stripes and central eye-spots being indistinct, owing to the deep black. ♀ brownish-grey, without the white band, the marking more distinct. In both sexes recognizable by the border of the wings being greatly reduced below the pointed apex. Guiana, Bolivia.

M. melpia *Hew.* (125 i). ♂ above quite black so that almost only the pupils of the eye-spots of the *melpia*. forewings are to be seen. Under surface lined with numerous transverse stripes; ♀ dark brown, on both surfaces similarly marked as the ♂ beneath. From the Amazon. ♂♂ from Teffé have above a magnificent blue reflection in the sunshine, being entirely absent in specimens from the Rio Madeira. The very complicated marking of the under surface seems to vary somewhat in all the habitats from which specimens are known; the lines are sometimes a little more stretched, sometimes slightly undulated etc. Not rare.

M. vaporosa *Stich.* Wings above brown, forewing at the apex, all the wings in the marginal part *vaporosa*. lighter, forewing otherwise like in *coea* *Hbn.*, but without the whitish apical cloud; on the hindwing the submarginal line and dot are dark brown. Under surface brownish grey, on the forewing the discal lines are double, curved and enclosing a singly-pupilled spot. On both surfaces there is a brown third, innermost line forming an elongate spot; the hindwings with 6 undulate brown lines, the middle ones thicker, enclosing 2 spots. Outside a dull band, the row of submarginal dots likewise dark brown. Length of forewings 15 mm. According to a ♂ from Para.

M. ibycus *Hew.* (126 a). One of the smallest species, on both surfaces yellowish-brown with a small *ibycus*. eye-spot on the forewing and dark stripes before it and behind it, as the figure shows. The eye-spot on the forewing has only 1 white pupil — at least in the ♂ — and the middle transverse stripes run in a straight line. The type seems to occur only on the Upper Amazon. — **parishi** *Drc.* differs hardly from it. We figure *parishi*. it according to a specimen from Bartica (Brit. Guiana) in the Tring Museum. Quite equal specimens, however, lie before us also from Cuyaba (Coll. BANG-HAAS), somewhat larger ones from Peru and transitions to *ibycus* from the Rio Negro in Colombia (Coll. FASSL). In typical *parishi* the eye-spot is larger, with 3 white pupils, and the double median stripe of the hindwing is finely undulated, often also the discal lines of the forewings are more irregular and the whole marking more inexact on account of the interspersed linear shades. Not rare.

M. cippus *Hew.* (125 i). Considerably larger than the preceding, but coloured the same, the trans-*cippus*. verse stripes more copious and regular, in the hindwing of the ♀ and on the under surface almost zebra-like. — **sydvina** *Bat.*, described from the Lower Amazon, differs by the proximal line surrounding the eye-spot para-*sydvina*. bolically being with both sides convergent towards the inner margin, and by the submarginal line being very much undulated towards the apex, but on the whole more finely marked. This line is finer also in the hindwing, but with thicker knots before the middle of the border. — **synnephis** *Stich.* from the west of Matto Grosso seems *synnephis*. to be near to the species; the central eye-spot has only 1 pupil, the parabola round the eye-spot does not converge with its sides, but they stand about vertical on the inner margin, and the anterior (proximal) part of the line round the eye-spot is defined at the median. Hindwing with a cellular spot. It seems, therefore, to be a slightly deviating ♂ of the extremely variable *cippus*, though I know the form only from the description not giving any differentiation with another species. *cippus* is a very widely spread species of a most characteristic appearance. From Guiana and Colombia across the Amazon District as far as Peru, Bolivia and Central Brazil, in the most districts common and greatly varying in the marking.

- calypso*. **M. calypso** Bat. from the western district of the Amazon is the southern representative of *hesperina*
hesperina. *Btlr.* (142 a) from Central America. The wings of the ♂ are above azure, the forewing with 6, the hindwing with 7 transverse stripes, if one takes the marginal stripe into account. *calypso* is said to have 3, *hesperina* 1 pupil in the central eye-spot. Near Santarem, *calypso* exhibits some minute deviations (as every new finding-place offers them), such as a lighter under surface producing a more distinct marking thereby (= *avicula Stich.*).
thetys. — **thetys** G. and S. from Colombia is reported to resemble *calypso*, the submarginal line of the hindwing, however,
cyanira. to be beneath thickened to a knot before the middle of the border, and **cyanira** *Stich.* from Ecuador has a lighter
tenuivittata. azure upper surface. — **tenuivittata** *Stich.* is of a duller blue and the middle transverse stripes are but delicate lines; from Rio de Janeiro. The ♀♀ of these forms, being partly transitional, resemble somewhat small *cippus*-♀♀, but the central eye-spot in the hindwing is better developed, while in typical *cippus*-♀♀ it is above mostly only shadow-like or even not indicated at all, and the two parabola encircling the eye-spot of the forewing are closer together in the costal region. The species is much rarer than *cippus*.
maeotis. **M. maeotis** Hew. (= *cippus*-♀ Bat.) (125 i). ♂ of a more intensely metallic blue than *hesperina*; besides easily discernible from the forms of the preceding species by the basal two thirds of the hindwings being without stripes and metallic blue. The ♀ is like *cippus*, but between the stripes more light than dark brown, though in fresh specimens not so light as in the older original to our figure. Guiana; more common than *calypso*. A ♂ from Cuyaba (Coll. BANG-HAAS) is above very light blue and beneath of a duller colour, with more yellowish-brown than dark-brown lines.
nina. **M. nina** Hbst. (= *formosa* Ww.) (125 i). Very much like the preceding species; but the ♂ has only in the basal half of the forewing blue which, however, is of a very intense lustre, the whole distal half of the forewing is blackish brown, with dull brighter markings; on the hindwing the antemarginal black stripe is placed nearer to the marginal stripe. The ♀ resembles that of *maeotis*, but the marginal area of the hindwings is whitish. From Guiana to Peru; rare.
ephyne. **M. ephyne** Cr. is another small species with the ♂ being blue above. From very little differences quite a number of forms have been denominated and described as proper species, although some seem to deviate only by the well-known differences of the habitats. CRAMER's *ephyne* seems not to have come anymore at all; it undoubtedly originated from Surinam from where we also know *nina*, *maeotis* etc. A very closely allied form is **metura** Hew., and both have been combined with **misipsa** Hew. (142 a), the ♂ of which is azure above, the ♀ being of a dirty greyish-blue. As regards the zebra-striation, the ♀ greatly approximates *idotea* (125 e), the ♂, however, is less striped in the basal part of all the wings. From Guiana across the Amazon as far as Peru. From the latter country STICHEL described another subspecies of the ♂ with a broader stripe in the distal part of the hindwing and beneath a yellow-encircled eye-spot of the forewing, on the whole larger and more brightly coloured; he denominated this form **polyglauca**. — **mesoba** Hew. (142 a) from Ecuador is very similarly marked, but coloured almost white, except a faint greyish-blue tinge at the base of the forewing and in the disc of the hindwing. — **dulcis** *Stich.* is said to originate from Matto-Grosso and perhaps from Peru; ♀ greyish-blue, on the hindwing 2 median eye-spots below each other; ♂ somewhat smaller than the ♀, above light blue. — **blandina** *Stich.* very similarly marked, central eye-spot entirely black (in *dulcis* with a white pupil), from Surinam. — **eugenea** *Stich.* greatly approximates *nina* (125 i), but the blue of the upper surface in the ♂ not so glossy, in the inner marginal part of the forewing reaching as far as to the border, and the apical part of the forewing is less deep black, so that the dark marking of it is more prominent; from Surinam. — **esperanza** Schs. from Costa-Rica resembles *dulcis*, but above it is of a bright blue, in the hindwing there are only 2 black lines complete close at the distal margin, of the subterminal line there exists only the beginning at the apical part. Of the ♀ we know only one mutilated specimen.
coelestis. **M. coelestis** G. and S. is a rare species from Costa-Rica and Colombia; it has the shape and size of *macrina* (125 g), but it is above in the disc of the wings sky-blue without any markings at all; only the usual eye-spot stands at the cell-end of the forewing, and before the border there run 2 black lines parallel to it. — **cachiana** Schs., likewise from Costa Rica, is above just as bright sky-blue, but the apical part of the forewings is broad black, as well as the distal margin. The ♀ was taken to be the typical *coelestis*-♀.

VIII. Group. (*Semomesia* Ww.)

Upper surface of the hindwing in the ♂ with a costal part of silky gloss.

- macaris*. **M. macaris** Hew. (125 h). ♂ very light blue, the median eye-spot is small, and the guttiform spot being conspicuous in *croesus* is absent. The ♀ is brown with whitish transverse stripes, similar to the ♀ of *maeotis* (125 i), but more uniform, not darker in the marginal half than in the basal half. Amazon District as far as Peru. — Of **tenella** *Stich.* the ♂ is said to be somewhat larger than typical *macaris*, with a more pointed apex. — **aetherea** *Stich.* is just the same, but the friction area at the costa of the hindwing is smaller and the velvety scent-spot is absent; Peru. — **optima** *Stich.* from the Amazon has a larger scent-spot of the ♂. These butterflies are not common.
geminus. **M. geminus** F. (125 g, h). ♂ above glossy sky-blue with black margins of the wings and a black oblique band of the forewing. ♀ blackish-brown with transverse stripes of a dull blue gloss edged in black. Known only from Central Brazil, as for instance from Minas-Geraes (San Jacintho River); very local and rare.

M. croesus *F.* (? = *capaneus* *Cr.*) (125 h). ♂ of a bright blue gloss, forewing with a dark (mostly double) black border, a black central eye-spot and behind it a guttiform spot. The latter may be thicker or more streak-shaped, more bulky or more pointed, the eye-spot may be round or oval exhibiting mostly 3 pupils. Hindwing with transverse lines varying considerably in size and position. — **splendida** *Sz.* (125 h) are ♂♂ of a lighter blue and very bright reflection, the black marking being greatly reduced. — **semiatra** *Sz.* (125 h, as *gneris*) are ♂♂ in which on the contrary the black, especially in the distal part of the forewing, is so much increased that it predominates there over the blue. ♀ greyish-brown, with lighter transverse stripes. In typical ♀♀ these transverse bands are before the broad dark border only brightened in a bluish-grey, not properly white. — In **gneris** *Dbl.* and *Hew.* the forewings exhibit in the place of the greyish-blue band a narrow white one. — In **meana** *Hew.* this band runs also through the hindwing, though narrow. — In **trilineata** *Btlr.* (= *sylvicoleus* *Btlr.*) (125 h) it is broader on both wings, on the hindwing sometimes parted for some distance by a line proceeding from the anal angle. The numerous variabilities of the complicated marking have led to many other names: *maria* *Btlr.* are large ♂♂ with very much marked under surface; in *lacrimosa* *Stich.* the guttiform spot fades away before the costa, the central eye-spot flows out downwards like a streak; *thymetina* *Btlr.* shows the white band broad and uniform; *ionima* *Stich.* is above very much marked in black, the scent-area at the costa of the hindwing is more extensive; *gentilis* *Hew.* are ♀♀ in which „the ground of the wings round the discal spot is brightened by a dull ochre brown“, the line next to the broad shade-like band being „less undulate“, the under surface of a paler ground colour; *hewitsoni* *Stich.* and *geometrica* *Stich.* are quite superfluous names; if they would be maintained, at least 30 more denominations would be necessary. *croesus* is a beautiful and widely distributed species; its patria is the whole northern part of South America, extending from the coast of Guiana to the south as far as Peru and Central Brazil; the butterfly is local, though not rare at its flying-places.

IX. Group. (*metope*-Group.)

♂♂ blackish-brown, posteriorly brightened by white, mostly with blue layers; ♀♀ most similar to each other, nut-brown to earthy-brown, densely striped.

M. ahava *Hew.* (126 a, b). Blackish brown; the eye-spot of the forewing hidden in the blackish ground-colour, before the border a somewhat lighter stripe. Distal half of the hindwings white. Peru. Specimens from Bolivia being somewhat larger and exhibiting the lighter stripe of the forewing beneath as an indistinct transverse band (we figure such a specimen), were called *veleda* *Stich.* Rare and varying according to the habitats; the white of the hindwings shows a different bordering at every habitat, being sometimes posteriorly sharply defined by an oblique line, sometimes more fading away.

M. zanoa *Hew.* (126 b). Above resembling the preceding species, but the distal part of the hindwings blue. Ecuador. — **orthia** *Stich.* are specimens lying before me from Villavicencio (Colombia); the blue area of the hindwing of *zanoa* is here only proximally blue, its distal half is white. Rare; the ♀♀ are not before me.

M. metope. It is doubtful whether the forms quoted here can be separated from *zanoa* so as to prevent that transitions establish a complete chain of connecting links to the series of *metope*. The following forms vary in such a way to each other that it appears hardly possible to separate them, especially since the ♀♀ are scarcely distinguishable, where the ♂♂ differ from each other, and vice versa. — **metope** *Hew.* (= *pruinosa* *Stich.*) (126 a) is blackish-brown, the forewing with a more or less distinct bluish-grey diffuse spot before the apex; hindwing with a white distal part being proximally shaded in blue. The diffuse spot of the forewing may be reduced to some small scales below the costa, large and triangular, split in the lower end and drawn down towards the anal angle in 2 tips. There are more than 50 specimens before me with all the degrees of this variation. ♀ similar to that of *coca*, the stripes of the hindwing undulated. From Guiana to Brazil and the Upper Amazon; not rare. — **olivencia** *Bat.* (142 a) is very near to *metope*, the ♂ being without the pointed diffuse spot of the forewing; from the Western Amazon District and Bolivia. By its under surface (forewing with a white transverse stripe) it forms a transition to *ahava*. — **ungulata** *Stich.* (142 b) is without the preapical diffuse spot of the forewing and the blue colouring of the light area of the hindwing has disappeared except scarcely noticeable traces; French Guiana (Nouveau Chantier, St. Laurent du Maroni); described from the Amazon (Santarem), thus certainly of a wide range. ♀ nut-brown, the marking almost exactly as in *minos* or *melaene* (126 a), but the border of the hindwing is only narrow, at the distal margin white. The ♀♀ of the different forms quoted do not offer any thorough differences.

M. philocles *L.* (126 b). Forewing blackish-brown with a dull bluish-grey oblique diffuse spot behind the median eye-spot; the distal half of the hindwing is white, proximally shaded in blue with 5 transverse stripes of which, however, mostly only those at the border above are running through; the 3 others have only apical beginnings. Varies extremely. The diffuse spot of the forewing may fade away before the middle of the wing or be parted in its lower tip by a black line. The white of the hindwing may be reduced and all the transverse lines may also above run completely through as far as to the anal margin. The blue of the forewings may spread round the eye-spot (= **egabella** *Bat.*) (126 b) or even fill up the whole cell of the forewing as far as to the base (**laetifica** *Bat.*) (126 b). The form mentioned last with the transverse stripes running through

- patruelis*. the whole hindwing has been denominated **patruelis** *Stich.* The ♀ exactly resembles above that of *metope*, it has only in the middle of the border of the hindwing a little white, but the hindwings beneath are white almost to their whole extent (not only in the distal part). ♀♀ with a stripe-shaped white brightening across the whole width of the wings are **bettina** *Stich.* I do not know them and doubt whether they belong to this species.
- jeziela*. **M. jeziela** *Bltr.* (= *egabella* [♂] *Stgr.*) (126 b, misprinted in *jeziella*). Similar to *egabella*, but the blue and white area of the forewing runs to the inner margin as a broad transverse band; the transverse stripes of the hindwing above incomplete. Colombia to Ecuador. — In *sylvia* *Drc.* (= *thyene* *Stich.*) (142 b) from the Rio Songo in Bolivia the light patches of the upper surface are blue, only in the middle striated white. — In *limbata*. **limbata** *Stich.* the black border of the hindwing being otherwise broad only at the apex, is broad round the whole wing, and the 3 anterior transverse lines of the hindwing traverse the whole wing. — **thyestes** *Drc.* (126 b) from the Chanchamayo is the same, only the inner half of the band of the forewing is blue, the outer half white.
- elegans*. From Peru. — **elegans** *Lathy* (126 c) is above quite similar, but larger, the lines of the under surface finer, duller, the forewing has no distinct second eye-spot below the central eye-spot, and the centre of the hindwing beneath is less sharply marked; from La Merced in Peru. Single and rare.
- coea*. **M. coea** *Hbn.* (= *philocles* ♀ *Cr.*, *nyctea* *Hffgg.*) (126 a, as *coeca*). According to STICHEL (RILEY i. 1.), this species being scarcely comprehensible from CRAMER's coarse figure seems to be identical with *traga* *Hew.* It resembles in both sexes pretty exactly the ♀♀ of the preceding species, but the margin of the hindwings is broader white. Moreover, on HEWITSON's figure the left wings of the ♀ are differently marked from the right ones, and the figure depicted as the ♂ of it does at least not everywhere belong to the form represented by the ♀-figure. The lines traversing the white distal part of the hindwing are incomplete. Amazon. — *lato*. **lato** *Stich.* with more white in the hindwing is said to originate from the Rio Tonantins. — *scolina*. **scolina** *Stich.* and *lacernata*. **lacernata** *Stich.*, unknown to me, come from Guiana; they are said to be very similar to *coea* except little differences in the marking.
- minos*. **M. minos** *Hew.* (136 a) the hindwings of which, in typical specimens, do not exhibit such a pure, but a more dirty white ground-colour than in our figure; but they vary at every habitat and show sometimes stouter, sometimes thinner transverse lines of the hindwing, occurring on the Lower Amazon and in Central Brazil. Here the submarginal nebulous lines exhibit in the ♂ beneath, in the ♀ also above knotty swellings before the middle of the border of all the wings, which are absent in the following species being otherwise similar. In order to use the names stated, we may denominate as fa. **tetrophthalma** *Stich.* specimens with especially much, **modica** *Stich.* specimens with very little white on the upper surface of the wings; these forms, however, are not bound to certain countries, but only to flying-places.
- melaene*. **M. melaene** *Hew.* (126 a). According to the author, this species differs from the allied *traga* (= *coea*) chiefly by the course of the (10) stripes of the hindwings. A more distinct mark is a shining, leaden-grey lustre of the darker parts of the forewings, being very well reproduced by our figure. As in *minos*, the ground-colour may be in the marginal part of the hindwings of a pure or dirty white, even almost brown, which is especially prominent between the second and third most exterior stripe of the hindwings running in contrary curves. Sometimes also the forewings exhibit a white transverse band before the marginal third (**pinguienta** *Stich.*). *pinguienta*. Guiana, Amazon. — **luperca** *Stich.* described according to a single ♀ from Pachitea in Peru, is a species unknown to me; it is said to have a light band running through both wings and a median eye-spot also on the hindwing.
- mosera*. **M. mosera** *Hew.* looks almost exactly like a *melaene*, especially the greyish-green, slightly metallic lustre of the forewing which is lacking in the other *Mesosemia* except *melaene*, occurs here also in the ♂, but the distal marginal part of the hindwing is not white, but as dark as the ground-colour, and the exterior stripes of the hindwing are curved parallel to each other, not contrarily. By this the marking gets very much like that of *minos* which, however, has distally lighter hindwings.
- melese*. **M. melese** *Hew.* (126 b) resembles the preceding, though it is somewhat smaller and the ♀ has a distinct central eye-spot on the hindwings, whereas the ♀ of *mosera* exhibits only a dot. Unfortunately the figure (according to a badly set specimen) shows the characteristic eye-spot of the hindwing partly covered by the forewing. Para.
- myonia*. **M. myonia** *Hew.*, being likewise near to *mosera* and *minos*, is marked like the former, but beside the ground-colour in the distal half of the hindwings, also the ground of the ellipse enclosing the eye-spot of the forewing is brightened by yellow. HEWITSON himself believes that the species may be a ♀-form of *philocles*; it is certainly nearly allied to it. From the Amazon.
- methion*. **M. methion** *Hew.* likewise approximates the *minos-melaene*-group, but it has a very different appearance owing to a rather broad white transverse band beginning broad at the costa and running almost straight towards the anal angle of the forewings. The submarginal line of the hindwings exhibits the knots before the middle of the border of all the wings very thick and distinct, above and beneath. In typical specimens, however, the second and third exterior stripes of the hindwing are combined to a broad dark band by the space between being filled up by dark brown. Such specimens occur from the northern coast of South America in the east as far as to the south of the Amazon; in Peru the space between the second and third last stripes of the hindwing is filled up broad in white whereby the white band of the forewing seems to run also through the hindwing. The bands, however, vary in width already in quite closely situated habitats.

M. machaera Hew. (126 c). Velvety blackish brown, the eye-spot encircled by a brownish yellow; *machaera*. forewings with a curved transverse band being distally of a purely white colour, proximally dim. The distal part of the hindwings is white, separated from the black basal part by 3 transverse lines being almost quite straight. Teffé on the Amazon. The white band of the forewing may grow very broad, so in Peru-specimens. — In **modulata** Stich., likewise from Peru, it is said to be narrower, and along the border of the hindwing there extends a marginal shade being interrupted in the middle, as well as a submarginal line; in such forms, incomplete lines proceeding from the anal angle may run into the white of the hindwing, whereby a resemblance is created with *zonalis*, *thymetus*, *isshia* etc. Such a specimen resembling (the larger) *zonalis* with a dark border of the hindwing is figured 126 c by the erroneous name of *thymetina*. The species is widely distributed in the western part of South America, but by no means common.

M. zonalis G. and S. (126 c). The type has great resemblance with certain forms of *machaera*. Probably the ♀ figured by the authors belongs to another (smaller) race than the figured ♂. The very numerous transverse lines of the hindwing may be quite straight, but also somewhat sinuous. Central America and Colombia.

M. magete Hew. (126 c). Lighter brown in the ground-colour than *machaera*, but the ♂ darker than *zonalis*; the white distal area of the hindwing with a broad brown border in which an oval spot, above the middle of the border, remains white. The hindwing is quite slightly angled at the border. In most of the ♂♂, in the anal angle of the hindwings, there is the beginning of a line parting the white marginal area; in **bersabana** Stich. this line is continued as far as to the apex; then the white marginal spot of the hindwing is also mostly (but not always) distally finely bordered in dark. The latter form preferably flies in Guiana, where, however, there also fly typically coloured, though smaller *magete*, as described from the Amazon. Seems to be very common. — A very curious specimen lies before me from FASSL's collection, from Villavicencio; here the broad black marginal band of the hindwing extends only as far as to the middle of the border; the white marginal spot is, therefore, not bordered and merges into the broad white band; also the apex of the hindwing is white so that the costal half of the hindwing, from the border to the middle of the wing, is of a quite pure white, the posterior half of the wing however, being margined in dark.

M. gertraudis Stich. (142 b). Hereto belong specimens being similarly marked as *zonalis*, with a blue instead of brown ground-colour of the upper surface. In the type figured by the author the transverse stripes run rectilinearly and regularly, and the white and blue band of the forewing is steeper; from Peru. We figure a deviating specimen from the Rio Negro (Colombia), in which the transverse lines are very much undulated.

X. Group. (*thymetus*-Group.)

♂ and ♀ brown with a white transverse band.

M. sifia Bsd. This is the well-known Rio-butterfly being wide-spread in collections, exhibiting on both wings a central eye-spot, in the forewing a curved white band, in the hindwing a white-intermixed distal half which in *isshia* from the Amazon is very much traversed by dark and bordered in dark. Whether *sifia* is specifically to be separated from its vicarious forms which are almost all marked in blackish brown with a common white band and a very dark-ruled ground, we cannot decide for the present. About 30 more roughly and about 60 more finely distinguishable forms are known and have mostly been denominated. But since, for instance, the *sifia* from the south of the town of Rio (Corcovado) already deviates from the one being met in the north on an excursion to the Organ Mountains, there would be no end, if we were to denominate all the differences in size, the width of the bands, the course and number of the transverse lines. — **thymetus** *thymetus*. Cr. is a rather small form with a medium-broad band traversing all the wings and rather distinct transverse lines before the band of the hindwing. It originates from Guiana; but in the museums there are mostly narrower banded specimens from Colombia or the Amazon. STICHEL figures one of these forms as *amaranthus*; it certainly is not worth being denominated, unless all the numerous deviations of the bands, characteristic for every habitat, would be denominated. Also whether the ring round the eye-spot is elliptic (closed) or parabolically open, is sometimes of no account, as is proved by couples met with in copulation *). In **anceps** Stich., a smaller species (from Ecuador), the latter disappear altogether, as in the *battis*-♀ of *messeis* to which the latter species is perhaps allied. Of the larger forms one with the band of the hindwing being covered with brown — **tenebricosa** Hew. (126 d as *hedwigi*) to which *anica* Drc. only forms a transition with a half-covered band — has been described before; the forms with a purely white band of the hindwing of which more than 40 lie before me, belong to the few common *Erycinidae* at their habitats. The white band may be posteriorly pointed (*dryadella* Stich., *nerine* Stich.) or broad (*judicialis* Stich.), or even very broad (*latissima* Stich.), sometimes the band of the hindwing is also parted by a nebulous line, only in the anal part (*sirenica* Stich.) or in its

*) The figure on t. 126 d depicted by us as „*amaranthus*“ is erroneous. An examination of the type of *amaranthus* Stich. having been subsequently made in the Berlin Museum proved that the specimen there is nothing but a narrow-banded form of this species from Peru, often found in the collections as *thymetus*. Quite similar forms are also from Colombia.

whole length (*naiadella* Stich.). There are also *latissima*-forms with the white band being parted $\frac{1}{4}$, $\frac{1}{2}$ or $\frac{2}{3}$. Of a very strange appearance are specimens in which the parting line exists in the middle of the band of the hindwing, whilst it is extinct at both ends. — *oreas* Stich. greatly resembles the *naiadella*-form, but the ground-colour is of a deeper blackish-brown, and the band of the hindwing being traversed by an interrupted parting line, as well as the band of the forewing, are sharply defined. — As *hedwigis* Stich. the author figures a ♂ from Peru and a ♀ from La Paz in Bolivia; both are insignificant deviations approximating *anceps* Stich., which, besides, do not belong to each other and which by no means can be all denominated. Only from Bolivia there have recently come at least ten different such forms all of which differ from each other. The *thymetus*-like forms are mostly common and their scheme of markings seems to conform with other species occurring at the same habitat; as for instance the broad-banded forms fly together with *M. axilla* (Bolivia), the narrow-banded with ♀♀ of *M. asa* (Colombia), and those with jet-black, bright uniform bands with *ulrica* ♀♀ on the Amazon or in Peru; the forms are mostly not bound to a certain district, but they may appear in colonies here and there *).

7. Genus: **Diophtalma** H.-Schäff.

To this genus, beside HERRICH-SCHÄFFER's *lagora*, also other species included later on in *Mesosemia* had been reckoned, of which, however, one part is better dealt with specially, according to STICHEL's proposal. They scarcely differ in the structure, but they have entirely different habits, according to which also the habitus is extremely different. They always sit, like a Geometrid, with their wings spread, on the under surface of a leaf; I never observed them on blossoms, and the stunted siphon seems to be unfit for sucking honey, whereas the other *Mesosemia* often most frequently visit blossoms and fly in the sunshine in a way very conspicuous for *Erycinidae*. All the 13 forms known are very nearly allied to each other and connected by many transitions. For the species that remained here in this genus the name of the genus provided for the eye-spotted forms is no more altogether suitable. STICHEL proposes *Leucochimona* instead.

philemon. **D. philemon** Cr. (= *icarus* F., *chionea* G. and S.) (126 e) is above and beneath white, traversed by few thick streaks; above without, beneath with marks of a median eye-spot on each wing. The butterflies vary very little, on the whole, being distributed over Guiana and the Amazon District. — *mathata* Hew. (= *nivea* G. and S.) (126 e) is the South Brazilian species being rather common near Rio on the Monte Corcovado and in Santos. It is above snow-white with quite fine transverse lines, the under surface, however, is smoky greyish-brown, sometimes somewhat lighter between the stripes. — *subalbata* form. nov. (126 e) represents the species in Bolivia; above not to be distinguished from *mathata*, beneath, however, white instead of brown. The under surface already exhibits small fine dots in the submarginal band of the hindwing, which grow to be thick knots in the Colombian *polita* Stich. (126 e), and which are joined by small white spots in the dark margin of the forewings. — *nivalis* G. and S. from Central-America approximates again the typical *philemon*, but the stripes are somewhat thicker. — *vestalis* G. and S. from Guatemala has less dark streaks of which the one being the nearest to the distal margin is simply indicated by a dotted line. Of the most central stripe there is only an oblong dot left which may already be regarded as the pupil of an eye-spot being later on the most developed in *hypha* (126 f). The species flies all the year round in the hot districts. The butterflies especially sit on the bushes on the road side beneath leaves and are made to fly off by beating the leaves, but they never fly far. The small bodies are very delicate, the flight resembles that of the Geometrids, being weak and tottering, so that one might take the flying animal to be a *Cabera*.

D. lagora. This butterfly has above no median eye-spot just like the preceding group, but before the middle of the border of the wings a small eye-spot is inserted, sometimes complete, sometimes rudimentary. *iphias*. The Central American form has neither above nor beneath a distinct median spot, but on each wing a blind marginal eye-spot. This is the form *iphias* Stich. (= *lepida* Stgr.) (126 f) in which often the whole apical third of the forewing is brownish. — *molina* G. and S. (126 f) is quite similar, but it has on the under surface of the forewing a distinct median eye spot, whereas the marginal eye spot of the hindwing is absent; before me from *lepida*. Costa Rica. — As *lepida* G. and S. (126 f). I consider specimens with 6 eye-spots beneath, i. e. on each wing *lagora*. one eye-spot before the middle of the border and on the forewing one median eye-spot; — in *lagora* H.-Schäff. the latter shows through above, though often only in outlines. Only the latter form extends to the south as far as Colombia and Guiana, all the others are from Central America. The proximal stripe of the forewing running towards the inner margin more proximally or more distally, seems to me to be not constant, since it runs somewhat differently even in the few specimens before me. Common.

leucogaea. **D. leucogaea** G. and S. (126 f). This form represents the contrary to the preceding: the forewing has a median eye-spot but no marginal one; the hindwing is without any eye-spot. Costa Rica, Nicaragua.

matisca. **D. matisca** Hew. (126 f, as *mathisca*) from Peru has a superficial resemblance to the former species, but the stripes run differently since they do not extend from the costa towards the inner margin, but form

*) As to the (exclusively Cuban) *M. ramsdeni* Skinn. cf. Additions.

a bow round the much larger, yellow-bordered eye-spot. The hindwings beneath, in the ♂♂ of the Amazon-form also above, with 4 dark streaks and dark margin. Amazon, Peru and Bolivia.

D. hyphea Cr. (126 f). In this form, being distributed from Cayenne to Peru, though mostly not *hyphea*. common, the median eye-spot of the forewing is considerably developed, like in a *Mesosemia* of the preceding group, the distal half of the forewings being suffused with grey and the dark streaks widened to brown bands.

8. Genus: **Mesophthalma** Ww.

Only a branch of the preceding genus, with somewhat differently formed forelegs and palpi (last joint more knob-shaped than coniform), forming a connection of *Diophthalma* with the *macotis*-group of the genus *Mesosemia*. Especially the ♀♀ of *Mesophthalma* are very near to certain ♀♀ of *Mesosemia*. Only 1 species.

M. idotea Ww. (= *mirta* H.-Schäff.) (126 e). Ground-colour of the ♂ light blue, of the ♀ dirty grey, *idotea*. in both sexes with a slightly reddish gloss. The transverse stripes are in the ♂ more of the shape of lines, like in *Diophthalma*, in the ♀ more like stripes, like in *Mesosemia*. Central eye-spot of the forewings with 3 small white dots. The butterflies occur in Guiana and on the Amazon and are not rare. The figured specimens are from Ega.

9. Genus: **Perophtalma** Ww.

Small, very delicate butterflies of a dirty yellowish-grey colour with an eye-spot of the forewing standing, however, not in the cell-end, but behind the cell, thus being placed more distally than in *Mesosemia*. The butterflies have the same habits as the preceding, they are met with singly, though they are not rare. Only 1 species.

P. tullius F. (= *tenera* Ww.) (126 f, as *tullia*). Dirty greyish-brown with yellowish and whitish *tullius*. shades; before the apex an eye-spot with a yellow ring around it and several pupils. This eye-spot stands behind the cell-end, almost like a Satyrid-eye-spot, unlike the more proximally situated eye-spot of *Mesosemia*. The whitish shades may be developed to such an extent that the whole disc of the wing turns white. Such extreme forms may be denoted as **tenera** G. and S., nec Ww. (? = *lasus* Dbl.) (126 f), but from the more *tenera*. than 100 specimens before me it is impossible to form a complete series of transitions (second *tullia*-figure) to both forms. These transitions are also confined to habitats, but not to geographical districts, and between habitats with entirely grey specimens there may occur habitats with very light white butterflies, as for instance near Cachabé. Central and South America to the south as far as Ecuador and the Amazon. Not rare.

10. Genus: **Hyphilaria** Hbn.

This genus contains half a dozen of just as delicate forms as the two preceding genera, but the animals are generally of brighter colours. Many have, similar to the *Diophthalma*, wings with parallel transverse stripes. The veins exhibit great variations, being also expressed in the shape of the wings. The margin of the forewings is sometimes convex, sometimes curved and the hindwings may be round, or also angled in the middle or the margin. The habits are the same as in *Diophthalma*.

H. nicias Stoll (= *nicon* Godt.) (126 g). ♂ pale yellow, ♀ more bone-white, the wings with black *nicias*. margins and a black oblique band cutting off a light — in the ♂ narrower — subapical band-spot from the ground-colour. In Surinam-♂♂ there are often in the black distal margin all kinds of light yellow markings which are absent in Bolivians. The scheme of coloration being somewhat conspicuous imitates that of a small form from the Danaid genus *Scada*. From Cayenne to Bolivia, varying somewhat in the width of the black margins and bands; not rare.

H. anthias Hew. (126 g). Similar to the preceding, but the whole marginal third or a still greater *anthias*. part of the wing black with chains of light spots, while the black oblique band is absent. Bolivia and Peru. — **orsedice** Godm. (126 g) is a scarcely differing form in which the small light spots are somewhat more developed, *orsedice*. especially beneath; Colombia to Guiana.

H. anophtalma Fldr. (126 g). Immediately recognizable by the slightly produced apex of the fore- *anophtalma*. wing and by the margin of the hindwing being faintly bent. The bone-white disc of the wings is traversed by a straight black stripe in the basal third, and one each in the middle of the forewing and hindwing, so that they meet angularly at the inner margin of the forewing. Colombia and Ecuador, not rare.

H. parthenis Ww. (= *cydias* Dbl.) (126 g, as *parthenias*). ♂ above dull orange-red, somewhat lighter *parthenis*. at the costal area. The forewing is traversed by black parallel bands which by far do not reach the inner margin in Bahia-♂♂, whereas in Bolivians they extend with one tip quite close to it (= **tigrinella** Stich.) (126 g). *tigrinella*. in Surinam-specimens where they are besides mostly — though not always — increased, they reach it broadly; this is the form **virgatula** Stich. (126 g). The ♀♀ of these 3 forms scarcely differ; their black stripes always *virgatula*. traverse all the wings thickly and completely.

11. Genus: **Hermathena** Hew.

This genus contains only one, unmistakable species the flight of which is about similar to one of the numerous South American white *Terias* or *Leucidia*. Forewings uncommonly broad, with a short costal margin and a long inner margin, hindwings almost circular. All the wings white, quite faintly tinged in yellowish, with large dark marginal spots beneath, showing somewhat through above. Widely distributed, but rare.

candidata. **H. candidata** Hew. Light bone-white with dark distal marginal spots being above powdered as if with flour. Amazon to Bolivia, local and rare. Colombian specimens (**columba** Stich.) (126 d as *candidata*) are larger and have a grey base of the forewing being absent in Bolivian specimens. Our figure shows the form *oweni*. *columba*. — **oweni** Schs. has the dark spots above blacker, augmented in the forewing by discal punctiform spots and some split up by light chequering. Costa Rica; described according to 1 ♂.

12. Genus: **Voltinia** Stich.

STICHEL places into this genus two species which are little allied to each other and would have better been placed in other genera. The first greatly resembles certain *Mesosemia*, but the central eye-spot of the forewing being generally found there is absent here; the second was formerly figured in the *Esthemopsis*.

theata. **V. theata** Stich. (126 d). Recognizable by the dark blue, but very iridescent metal gloss, making the basal part of the upper surface of the wings and some band-like stripes above the disk shine in a magnificent blue. The reflection is as intense as in the well-known Indian Lycaenid *Jamides bocchus*. In the ♀ this blue gloss is also present, though somewhat duller and only in the inner half of the wings; the ♀ is furthermore distinguished by a large, snow-white, oval oblique spot behind the middle of the forewings. The under surface is grey, with darker clouds and chains of blackish spots in the basal half; before the margin, especially on the forewing, there are fine white marginal dots. From Ecuador. STICHEL describes only the ♀ from Colombia; according to his figure the white band of the forewing seems to vary slightly.

radiata. **V. radiata** G. and S. can be compared with the preceding only in the shape; in the colouring it is a copy of the *Morpheis* (93 a) and *Hades* (123 a) flying at the same place, black, at the distal margin small *dentata*. radiary white cuneiform spots. Panama, Costa Rica. — In *dentata* Stich. (142 b) from Colombia these cuneiform spots are larger. — Rare.

13. Genus: **Eunogyra** Ww.

Like the preceding genus rather similar to *Mesosemia*, but also without the central eye-spot of the forewing; beneath with chains of dark spots. Forewing with a rather pointed apex, very broad; margin of hindwings round. Only 1 species being local, but not rare.

satyrus. **E. satyrus** Ww. (124 d). Above dark brown, with a dark median nebulous stripe and a chain of dark spots, encircled by yellowish, before the margin. — In *curupira* Bates from Guiana and the neighbouring Amazon District the marking is more complicated; before the chain of marginal spots there is another more indistinct series of dark spots, the dark nebulous streak behind the middle of the wings is displaced towards the margin and its former place is filled up by a lighter stripe. — *picus* *form. nov.* (124 d) is a large form from Peru without any marginal eye-spots of the forewings except those near the anal angle, while those of the hindwings are reduced to narrow transverse ovals. — The species extends from the northern coast of South America to the south as far as Brazil and Peru. The animals live in the forest, flying rather low and occurring singly, but not rarely.

14. Genus: **Cremna** Dbl.

In this genus a group of strong, robustly built butterflies was formerly combined with some species of an almost Geometrid-like delicate structure. STICHEL ascertained that there exists also a difference, though very insignificant, in the veins, the costal of genuine *Cremna* sending a small short branch towards the first subcostal vein, as in *Eunogyra*, and he, therefore, separated the species without the small connecting branch as „*Napaea* Hbn.“. In other respects the two groups are very closely allied to each other.

actoris. **C. actoris** Cr. (= *ceneus* F., *lusia* Hbn.) (126 h). Above dark brown, in the ♂ with a deep blackish-blue tinge, both wings covered with numerous white dots and small comma-like spots. Guiana as far as Bolivia and Brazil. — In *meleagris* Hpffr. (126 h) the small spots of the upper surface are somewhat larger and of a beautiful blue, and in *heteroea* Bat. (126 h) from the Upper Amazon they are, on the hindwing, often connected to undulated stripes. — *calitra* Hew. (126 h) from Ecuador exhibits the light spots very much enlarged, behind the middle of the forewings they are linked together to a broad macular chain, the spots being white, only those before the margin light blue.

thasus. **C. thasus** Stoll (126 g). Dark brown with white transverse stripes the exterior ones of which are interrupted. Northern part of South America. In specimens from Guiana, Trinidad etc., the under and upper surfaces are alike; from Muzo, A. H. FASSL brought specimens the under surface of which exhibits so very much white that the black ground-colour, especially on the hindwing, has been preserved only in frequently interrupted nebulous lines. Apparently not common.

C. alector *Hbn.-G.* (126 i). Similar to *meleagris*, the wings not so broad, black with blue chain-stripes, *alector*. though they are much more remote from each other and more coherent than in *meleagris*; in the apical part none or only 2 or 3 (= *pupillata* *Stich.*) small white vitreous dots, in *meleagris* 6 to 8. Beneath grey with a spotting like a guinea-hen. Guiana to South Brazil. Rare. — In Bahia there flies a form exhibiting in the apex double dots instead of single ones (*bipuncta* *Weym.*).

15. Genus: **Napaea** *Hbn.*

In contrast with the preceding genus, *Napaea* contains strong butterflies with a robust body. The margin of the forewings is not projecting so far, the apex not so very falcate, the costal of the forewing not connected with the subcostal. There are about 7 species which, however, vary a great deal and have therefore many denominations. The butterflies rest in bushes near the skirts of the forests, out of which they are beaten. They are not common.

N. eucharila *Bat.* (= *actoris* *Hbn.* nec *Cr.*) (126 h). Brown, studded with numerous yellow, small *eucharila*. comma- or punctiform spots being partly prominent by dark shading. Hindwing with an orange-yellow striated band before the margin. Guiana and the Amazon as far as Bolivia and Brazil. — In the smaller *frustatoria* *frustatoria*. *Stich.* from Guiana, the comma-spots are narrower and the orange band of the hindwing is absent. — In *picina* *picina*. *Stich.* the ground-colour is darker, the orange band stunted, the dots are almost entirely absent on the hindwing. — Also in *rufolimbata* *Stich.* (126 h) the dark hindwing is without the light spots, though here the distal *rufolimbat-* margin is broad orange. — *merula* *Thieme* (126 i) has entirely black hindwings and also few minute dots in *merula*. the cell and apical part of the forewing. *STAUDINGER* has described, but not denominated most of these forms; *rufolimbata* is before me only from Costa Rica (*Orosi*), *merula* from Paramba. — *melampia* *Bat.* (126 i) *melampia*. may be a distinct species, or only a large form; the ♂ is without the orange stripe of the hindwing, the ♀ has it thin and highly undulate. The irroration is insignificant, especially in the ♂, and also on the under surface, where the other *eucharila*-forms exhibit yellow grating, *melampia* shows only black-shaded comma-spots. From Bahia, where it is rare, and Espiritu Santo.

N. phryxe *Fldr.* (126 i, k). Large, more grey than dark brown, the small light spots confluent to *phryxe*. 4 or 5 remote arcuate lines; beneath like above. Amazon and Bahia.

N. sylva *Mschlr.* (126 h). Stripes similar as in *Cr. thasus*, but the light stripes diaphanous, as of light *sylva*. bluish glass, and in the sunshine with a mother-of-pearl gloss. Beneath exactly like above. Guiana; before me also from Peru (*Galeazu*), where it is, however, very rare. It approximates *Cremna thasus*.

N. umbra *Bsd.* (= *cebreia* *Hew.*) (126 i). Brown like *Eunogyra*, but differing from *E. satyrus* by *umbra*. a more curved margin of the forewing, ring- and hook-marking of the upper surface and 1 or 2 fine white subapical dots in the forewing. Mexico and Central America. From specimens from Costa Rica and Guatemala those from Mexico differ by the postmedian line of the hindwing being coherent and straight there, while here it is broken up into separate crescents. Not rare.

N. beltiana *Godm.* (126 k). Almost like the form *frustatoria* of *eucharila*, but the submarginal rows *beltiana*. of dots do not run uniformly, but curved; the anal part of the hindwing is above and beneath powdered as if with flour and exhibits a half-band, being entirely white or interspersed with quite few shades; Guiana and North Brazil; the figured specimen from Demerara. — In *malis* *Godm.* (126 k) from Muzo in Colombia the *malis*. lacteous powdering of the hindwing is rather extensive, the white of the under surface greatly increased. The white half-band, however, is absent. — *lucilia* *Mschlr.* is an intermediate form with a narrower white band *lucilia*. of the hindwing, whereas in *aza* *Drc.* the white of the small spots of the forewings, in the anal part of the *aza*. hindwings and on the whole under surface is increased; *lucilia* comes from Surinam, *aza* from Bolivia. From Guiana, however, I possess also specimens of a form having on the forewing exactly the marking of *beltiana*; the hindwing, however, is without the lacteous dusting of *malis* as well as the white half-band of *beltiana*.

N. nepos *F.* (126 k). Forewing dark brown, strewn with white, one spot beyond the centre of the *nepos*. wing especially large. In the hindwing the whole anal half snow-white. From Guiana to Ecuador and Peru. — **tanos** *Stich.* (126 k) from Bolivia is larger, the forewing more sparsely spotted. — **orpheus** *Ww.* (126 k) from *tanos*. South Brazil and Paraguay is smaller than *tanos*, the forewings spotted like there, but the white area of the *orpheus*. hindwing differently shaped. Less rare than the forms of *beltiana*.

N. theages *G.* and *S.* (126 k). From Central America and the neighbouring Colombia has the white *theages*. area of the hindwing in the anal part tinged in bluish, and also on the forewing a band consisting of 2 white spots and being sometimes interrupted by the ground-colour (*asteria* *Stich.*). The spots of the forewings may be larger or smaller (*cribraria* *Stich.*).

16. Genus: **Alesa** *Dbl.*

This genus is distinguished by a vast sexual dimorphism receding somewhat only in one species. The body is slender, the head broad, slanting, with a flat forehead and closely appressed short palpi; antennae very long, only slightly thickened at their ends. Abdomen long, in the ♂ thin, in the ♀ stout, but likewise stretched; forewings long with a very oblique distal margin, hindwings round, especially in the ♀. Cells of all the wings

closed, the upper radial originates with the 3rd subcostal vein from the same place. Colouring of the ♀♀ earthy brown, that of the ♂♂ varying, but with a metallic lustre. Only few species all of which are found in the eastern part of South America.

amesis. **A. amesis** Cr. (= *amosis auct.*, *priolas Godt.*) (127 b). ♂ above black, in the apical part of the forewing with yellowish grey streaks; from the distal margin of all the wings, a violettish blue reflection extends variously far into the wing, being prominent only in certain exposure to light, so that the reflection is much more difficult to see than, for instance, in the quite similarly coloured *Euselasia tarinda*; in some specimens the reflection seems to be absent altogether. ♀ light brown with dark bands. Apex of the forewing with yellow streaks, before the margin of the hindwing yellow, black-pupilled eye-spots the apical one of which represents a fused double eye-spot. — *lipara* Bat. (127 b) has rounder hindwings, weaker streaks in the apical part, the forewing is beneath of duller colours than *amesis*, on the whole with little differences; in the ♀ the two pupils of the apical eye-spot are not so closely fused, but still separated. — *hemiurga* Bat. has a lighter distal part of the wings in the ♂ and smaller dark spots in the ♀. The latter two forms on the Amazon, and the typical form in Guiana. — Of a very deviating impression are ♂♂ exhibiting instead of a violettish blue reflection a greenish grey metal-gloss; such a specimen is in the Paris Museum. — In Guiana the animal is common; the ♂♂ fly low on broad roads through the forests; the ♀♀ must be beaten out of the bushes.

helydrias. **A. helydrias** Bat. Similar to the preceding, but smaller and above all distinguished by the ♂ resembling the ♀, the marking of the under surface showing distinctly through above. Tapajoz. The species is not before me.

telephae. **A. telephae** Bsd. (127 a). Only the ♀ is known; it differs from the ♀ of *amesis* by a less marked forewing and by the apical eyespot-pupils of the hindwings showing above a magnificent bluish-green reflection as in the following species; this reflection, however, becomes prominent only in a certain light. Amazon.

prema. **A. prema** Godt. (= *smaragdifera Ww.*) (127 a). ♂ of a magnificent emerald-green, in another light of a deep blue reflection, with black markings. ♀ similar to that of the preceding species, larger, the eye-spots of the hindwings and some spots near the base of the forewing with metallic pupils. Colombia and Amazon; ♂♂ from Colombia (from the Rio Negro) exhibit above in the median area of both wings thicker black markings. Rare.

17. Genus: **Mimocastnia** gen. nov.

Near to the *Alesa*, but both sexes of a much bulkier structure, the ♀ entirely different from the ♂. The former resembles *Alesa prema* in the marking of the upper surface, the body more robust, the palpi thicker, with a projecting terminal joint, wings shorter, more obtuse with a very round margin, the lower discocellular of the hindwing very weak. The ♀ reminds us in the habitus of a *Castnia* of the *pelasgus*-group, and the remarkably bulky structure of the body may serve for completing the mimetic resemblance, but this may be secondary, the original for both may be an Arctiid secreting oil. Type: *M. rothschildi*.

rothschildi. **M. rothschildi** nom. nov. (♀ = *plagiaria Godm. nec Sm.*) (127 a). ♂ above with a black lattice-like marking, with golden green spots, the marginal spots guttiform. ♀ above black except the distal half of the forewing in which there is a white oblique band, and the margin of the hindwing of a blue gloss. Under surface of the ♂ like that of the ♀, but without the white oblique band. From the Rio Demerara in Guiana, apparently very rare; I know only a couple in the Tring Museum and one ♀ in the Coll. GODMAN in the British Museum.

18. Genus: **Nahida** Ky.

This genus having been founded by HEWITSON by the hackneyed name of *Threnodes* comprises 2 mimetic species of a bulky structure of the body, with very round broad wings, long antennae scarcely thickened at the ends, and the palpi being bent up before the forehead, though hardly reaching the middle of the forehead. The forehead itself is white. Forewing with a very long cell, hindwing with an extremely short one. With respect to the habits nothing is known to me; they evidently imitate Ithomiins and have probably therefore an unwieldy flight.

coenoides. **N. coenoides** Hew. Wings dull glassy with a broad black margin being white-spotted in the forewing. It differs from the form *trochois* Hew. (127 b) by the absence of the rust-red anal spot of the hindwing. From Ecuador, where the equally coloured *Napeogenes glycera* (35 g) and *apulia* (35 f) fly, the former without, the latter with anal red in the hindwing. The species is apparently rare, but it may be also only difficult to recognize, since in the same countries there also fly species of *Ceratinia* and *Pteronymia* which are similar to the *Nahida*.

serena. **N. serena** Stich. (127 d) which we figure from Cachabé, looks very much different compared to the preceding, but perhaps only owing to the mimicry of another model; here the disc of the wings is orange, the margin broader, the white marginal spots are increased and enlarged. The models are presumably species of *Dismenitis* or *Hypoleria*.

19. Genus: **Ithomeis** Bat.

This genus is hardly to be separated from the preceding; the differences stated (for instance in the veins) are very slight, some are also erroneous. The third palpal joint is said to be in *Ithomeis* coniform, in *Nahida* knob-shaped. Indeed some *Ithomeis* exhibit the terminal joint of the palpus just as obtuse as the *Nahida*. Maybe that the forewing of the *Ithomeis* is not quite so round as it is in the latter. Moreover, we may conclude a certain alliance already from the mimicry common to both genera. There are about a dozen of forms known, the models of which are generally Ithomiins, a fact being expressed already by the name.

I. aereila Sm. (127 b). Wings with a dull glassy disc and broad black margins filled up with red-brown. *aereila*. In the forewing a white oblique band. Peru, Bolivia; not very rare.

I. astrea Fldr. (127 c). Quite similar to *aereila*, but larger, in place of the white oblique band we notice on the forewing an irregular, curved vitreous band. Before me only from Peru, but described from Venezuela. — In **delecta** Stich. from South Brazil (Blumenau) or Venezuela the marginal band is said to be more filled up with brown and the vitreous spots of the subapical band of the forewing are more isolated. — **heliconina** Bat. (127 c) is an equally coloured species, but smaller, the vitreous areas are reduced and beneath lacteous; from the Amazon and Peru. There are transitions to typical *astrea*, as *heliconina* varies greatly at any rate, so that for instance the brown filling in the margin of the wings may disappear nearly altogether. The appearance of the *astrea*-forms presumably conforms with the species of *Leucothyris* and *Napeogenes* flying at the same habitats. — **satellites** Bat. has the size of *heliconina*, but the subapical vitreous band of the forewings being regular there is irregular here, being strangulated in the middle, the spots of the forewings almost white; from the Rio Tapajoz.

I. mimica Bat. (= *corinna* Stgr.) (127 c). This form is likewise connected with the preceding by transitions. It is characterized by the lacteous discal spots and the very broad orange distal band. From Colombia to Ecuador. It imitates *Napeogenes* of the *corena*-group, just like the following.

I. corena Fldr. (127 c) from Colombia differs from the preceding by its larger size, a broader orange spot at the inner margin of the forewing, and by the orange band of the forewing being broader than that of the hindwing, while in *mimica* it is just the reverse. Beneath the vitreous spots are almost as transparent as above, scarcely powdered with white. The species varies enormously in size and may drop from the size of an *astrea* down as far as to a small *heliconina*. The orange band may also be lighter yellow or more brownish red, continuous or interrupted. Where it is separated to a large subapical spot, as on the Upper Rio Negro, a resemblance is created with *Stalachtis lineata* being imitated according to the same model.

I. stalachtina Bat. As the name implies, this species also resembles a *Stalachtis* (*duvali*) and is immediately recognizable by this similarity. Probably from the Upper Amazon. As the orange colouring is shifted to the hindwing, also a secondary resemblance is produced with the Pierid *Dismorphia lysinoë* (30 d).

I. aurantiaca Bat. Recognizable by the greater extent of the orange colouring on all the wings, otherwise belonging to the *corena*-group. Amazon District. Apparently very rare. It is besides recognizable by its resemblance with *Napeogenes ercilla* and *Hyposcada illinissa*. The distribution of colours is about as in *Napeog. cyrianassa*, but the subapical spots of the forewings are lighter and clearer.

I. eulema Hew. (127 d). In this species the hindwings are red-brown with a broad black, white-dotted distal margin. In the forewing only a broad longitudinal stripe above the inner margin is yet yellowish-brown, the other part being black with white dots and diffuse spots. Colombia. — **imitatrix** G. and S. (127 c) is the form of the adjoining Costa Rica and Panama, in which the forewings are without red-brown, entirely black, marked with but few white small streak-like spots. Both the forms thus approximate a colouring found in the Pieris *Charonias eurytele* (21 e) in Colombia or *Ch. lyceas* in Panama or *intermedia* Schs. from Costa Rica. The resemblance, however, is secondary, created by both having been copied according to the same model. This model is to be found among the numerous equally coloured Ithomiins to which belong for instance *Melinæa menatis* (33 d), *Napeogenes larina* (35 e), *Ceratinia callispila* (35 a), *Callithomia hezia* (36 b), *Ithomia plaginota* or *celemia* (37 b, c) and many other butterflies.

20. Genus: **Tmetoglene** Fldr.

The species of this genus likewise imitate the *Ithomiinae*, but only hyaline species, especially those from the genera *Ithomia* *Hypoleria*, *Pteronymia* etc. They resemble the patented genus of night-butterflies *Brachyglene* H.-Schäff., according to which FELDER had originally denominated them, only in the shape, not in the colour. From the species of the preceding genus they are immediately distinguishable by the short cell of the forewing which is little longer than that of the hindwing, while in the *Ithomeis* it is about as long again. The species fly little and are mostly not common; there are about 5 or 6 species known with a range extending from Mexico to South Brazil and Bolivia.

- esthema*. **T. esthema** *Fldr.* (127 d). Ground of the wings diaphanous greyish-blue, the veins prominent as radiary stripes with intermediat rays. Forewing with a white oblique band traversed by the veins. Sides of abdomen beneath yellow. From Panama to Brazil and Colombia. Fresh specimens have a very bright blue gloss which, however, disappears soon.
- dodone*. **T. dodone** *G. and S.* resembles the preceding species, but it has longer forewings and shorter hind-
- eulesca*. wings. From the figured **eulesca** *Dyar* (127 d) from Mexico *dodone* chiefly differs by the blue gloss of the upper surface being brighter and the white longitudinal blurred spots in the subapical area flowing together to an oblique band. In Costa Rica and Panama; on the Chiriqui it is not rare.
- colaxes*. **T. colaxes** *Hew.* entirely resembles the following *dinora* (127 d), but the black margins are broader, the apical vitreous band thereby shortened in the shape of a spot; the black oblique band separating it from the basal part of the hindwing is at the costa so broad that it encloses the small band of the cell-end. From Ecuador.
- dinora*. **T. dinora** *Bat.* (127 d). Ground of the wings throughout hyaline, the preapical oblique band curved. The black margins of the wings are in freshly captured specimens of a magnificent blue reflection which, however, gradually disappears in the collection. Abdomen beneath brick-red.
- drymo*. **T. drymo** *G. and S.* (127 d) is very near to *dinora*, but the subapical band of the forewing is not curved, but forms more of an oblique longitudinal oval of a whitish gloss. South Brazil. Rare.

21. Genus: **Themone** *Ww.*

Shape and scheme of markings very similar to the preceding genus, but the colouring bright and variegated, more adapted to the small coloured species of Ithomiins, yellowish brown, with black margins and a light yellow oblique band before the black apex. The antennae are shorter, the cell of the forewing is not so very long compared with the short cell of the hindwing. With respect to the habits, the species being distributed from Guiana to Brazil and Peru do not differ from the other Erycinid genera.

- pais*. **Th. pais** *Hbn.* (= *halius Dalm.*) (127 i). Red-yellow with a broad black margin and apical part of the forewings; in the forewing of the ♂ an oblique, in the ♀ a bent yellow band. Above the cell of the hindwing a thick black cuneiform streak and in the margin of the hindwing of the ♀ yellow dots which are only indistinctly indicated in the ♂. Central and North Brazil. — In the extent of the yellow bands the species
- eutacta*. varies greatly according to the localities; thus they are in **eutacta** *Stich.* from Guiana very broad and long,
- carveri*. curved and beneath pointed, whereas the spot in the cell of the hindwing is narrow and short. — **carveri** *Weeks*
- paidion*. (127 i) are ♀♀ from Venezuela in which the black cellular spot in the hindwing is absent altogether. — **paidion** *Stich.* is smaller, with a narrower subapical band being indistinctly developed in its posterior part. From Peru.
- storthynga*. — In **storthynga** *Stich.* from Peru the black of the apical half of the forewing reaches into the basal red in
- trivittata*. the shape of teeth, and in **trivittata** *Lathy* (127 i) the basal red stands in connection with the yellow oblique band on the veins; likewise from Peru. — The forms exhibit a conspicuous resemblance in the exterior to the genus *Methonella* (122 i).
- poecila*. **Th. poecila** *Bates* (127 i). From the Amazon. Base of the wings ochre-yellow, distal half black. Apex of all the wings with a white margin. Beyond the middle of the forewing there is an oval oblique spot, in the hindwing a reddish ochre-yellow punctiform spot. Apparently very rare.

22. Genus: **Cartea** *Ky.*

Of this genus, being distinguished from the *Themone* by the very short discocellular of the hindwing, and from the *Chamaelimnas* by the cell of the forewing ending before the middle of the wing, only 1 species is known with red-yellow wings margined in broad black and a bone-yellow oblique spot in the black apical part of the forewing. On the Upper Amazon and in the neighbouring Peru the species is locally common.

- vitula*. **C. vitula** *Hew.* (127 h). Basal half of the forewing and disc of the hindwing with a miniate cuneiform spot on a black ground, the apical part of the forewing in typical specimens with a very narrow brownish-yellow spot which is broader in the form **tapajona** *Stgr.* (127 h) from the Rio Tapajoz (Humayta). — **trailii** *Btlr.* and
- tapajona*. **ucayala** *Thieme* are also insignificant deviations regarding the shape of the variegated spots; the former flies
- trailii*. like the typical form on the Upper Amazon (Iquitos), though probably hardly at the same places; *ucayala*
- ucayala*. comes from Peru; here the oblique spot of the forewing is still broader than in the typical form and of a pure white.

23. Genus: **Chamaelimnas** *Fldr.*

Hereto belong 13 black and yellow forms with very long forewings, whilst the hindwings form an almost quite uniform ellipsis, sometimes slightly tapering at the anal angle. The antennae are long, the palpi quite short; the cell of the forewing extends beyond the middle of the wing and is very broad, that of the hindwing short. They imitate night-butterflies from the genera *Cyllopoda* and *Josia*, sometimes in such a greatly deceptive way that even the connoisseur finds difficulty in distinguishing them from these night-butterflies flying

frequently (the *Cyllopoda* even exclusively) in day-time. The shape of the yellow spots differs at every habitat and is so characteristic that one can exactly see from it, whether a specimen of the genus has been captured on the Corcovado near Rio, or in the Serra do Mar near Santos, in Espiritu Santo or in Blumenau. The application of names has become far too numerous, as is proved by the confusion already caused. Among the 14 *briola* before me there are only two alike (of the same date!).

Ch. briola *Bat.* (= *histrio* Göze) (127 e). Black; forewing with a bright, light-yellow spot in the cell *briola*, and an equal oblique band before the apex; hindwing likewise yellow and black. Size and shape of the yellow spots vary at every habitat, sometimes there is also a yellow collar, and the apex of the forewing may be bordered in light-yellow. In typical *briola* the whole disc of the hindwing is yellow so that only a broad black margin remains. — In *doryphora* *Stich.* (= *briola* *Hew.* pt.) (127 f) being somewhat smaller and originating *doryphora*, from South Brazil, the apical spot of the forewing is narrower and the hindwing with a broader black margin. — **phoenias** *Hew.* (127 f) has in the hindwing only the region of the hindwing-cell yellow, and a small yellow cunei- *phoenias*, form spot in the forewing-cell. — Distributed over the whole of tropical South America.

Ch. villagomes *Hew.* (127 f) differs from the preceding by the cell of the forewing being without *villagomes*, any yellow at all. Ecuador. — There are transitions to the preceding species with a narrow but distinct spot in the cell of the forewing (**xanthotaenia** *Stich.*), so that *villagomes* might be included in it. — In *urbana* *Stich.* *xanthotaenia*, the yellow spot of the forewing has the shape of a band. — Distributed from Central America to Peru. *urbana*.

Ch. ammon *Cr.* (127 f). In this species from Guiana the whole basal half of the forewing is yellow *ammon*, except a narrow black costal margin. — **cercides** *Hew.* is distinguished only by the basal yellow of the forewing *cercides*, forming a more regular triangle with less rounded angles and being separated from the oblique spot by a uniform, quite straight band. — In *cydonia* *Stich.* (127 f) from Colombia this separating band has disappeared *cydonia*, and the forewing is entirely yellow except the very broad margin; from Colombia. — From Villavicencia there is a transition to this form before me, in which a beginning of this band (above the cell-end) is still preserved, while its lower part is absent; the two yellow spots of the forewing, therefore, flow together at the inner margin, while at the costa they are separated. The butterflies of this species and the preceding ones are not common and represent each other, so that the occurrence of two different forms of this group at the same flying-place is improbable.

Ch. joviana *Schs.* (127 f). Black with fiery orange-red longitudinal stripes across all the wings, the *joviana*, one in the forewing broken obtuse-angled at the cell-end. From Peru and Bolivia. Here too, deviations occur in the shape and distinctness of the longitudinal stripe from the typical form figured by us, as for instance in the form *similis* *Schs.* The species greatly resembles the Colombian *Mesenopsis melanochlora* or *briseis*; this resemblance, however, is secondary, as both species copy *Josia fulva*; the latter, according to A. H. FASSL in such a deceptive way that they are scarcely discernible.

Ch. splendens *Sm.* (127 g). Black, forewing with an orange-yellow oblique band. Hindwing in the *splendens*, basal part of a metallic blue reflection. It flies in Bolivia; in a specimen from the Rio Songo the orange band sends a long tip along the median as far as to the base of the forewing. The species reminds us of a number of quite equally coloured *Heterocera*, such as certain Arctiids and Syntomids (for instance *Ctenucha cyaniris*, *Hagnagora* and so on) together with which it flies.

Ch. tircis *Fldr.* (127 g). Black, forewing with a yellow oblique spot being smaller and darker in the *tircis*, ♂, larger and lighter, nearly white, in the ♀. — In *jaeris* *Bsd.* from the Amazon the small oblique band is darker *jaeris*, yellow and of about the same width. The typical form is not rare near Bahia and rests in the bushes near the roads, together with a great number of quite similarly coloured and marked species of night-butterflies (*Getta* and others).

Ch. pansa *Godm.* (127 g). Most similar to the preceding, larger, the oblique band of the forewing *pansa*, compared with its length narrower, more ochre-yellow, running somewhat more flatly. The shape and colour of this yellow band vary extremely; on the Pachitea River it is cuneiform, in the Province of Sara distally cut off straight, near Buenavista distally convex and so on. Common in Brazil, Bolivia and Peru. It shows a secondary resemblance to *Isapis*, some *Lymnas* etc.

24. Genus: *Ithomiola* *Fldr.*

Very near to the preceding genus, but of a quite different appearance, as not the yellow, but the hyaline species of the *Heterocera*-genus *Cyllopoda* are here homochromous with these *Erycinidae*. The chief difference from the preceding genus consists in the apex of the forewing being rounder, which is probably to be considered also as an imitatory phase and may be connected with the flight of the *Ithomiinae* differing entirely from that of the yellow *Diopis* and the *Brachyglene*. The flight of the *Cyllopoda* is much more powerful and continuous (they always fly in sunshine), which is increased by the more pointed wings and the restless flapping of the wings. On account of the longer apex of the wings in the *Chamaelimnas*, the last subcostal vein rises somewhat farther before the apex than in *Ithomiola*, otherwise the veins do not differ; *Ithomiola*, however, has a remarkably long middle joint of the palpus, the first and last being very short. The genus has very many forms, as there are scarcely 2 specimens alike that are found not at the same place. The species, therefore, are related to each other as vicarious species. They are mostly not rare.

- floralis*. **I. *floralis* Fldr.** (127 h). Wings in the disc hyaline with dark margins, a cross-bar in the middle of the cell of the forewing and one at the end; in the black apical part of the forewing a small band consisting of 4 small hyaline spots. The broad black margin of the wings is filled with red, beneath lighter and more intense than above. — In the smaller form ***cephalena* Hew.** the red marginal filling is absent in the forewing and the apical part of the hindwing; the apical band of the forewing is somewhat broader. Before me from Potaro (British Guiana), whereas the typical form is not rare near Cayenne. As the name indicates, the model is *Leucothyris flora* from Cayenne.
- celtilla*. **I. *celtilla* Hew.** (= *oceltilla* Stch.) has likewise a hyaline disc of the wings, traversed by the thick black veins, but in the apical part of the forewing there is a large lacteous oblique oval. In typical specimens from Ecuador there are above on the black margin of the wings only traces of a red filling. — In the form ***rubrolineata* Lathy** (127 g) this filling is more distinct and extends yet to the inner margin of the forewings. Peru, Bolivia.
- cascella*. **I. *cascella* Hew.** (= *servilia* Stch.) (127 h). Here is in the apical part of the forewings an orange band instead of the hyaline band of *floralis* or the lacteous band of *celtilla*. In the ♀ there are traces of the hyaline band in the midst of the orange band; in Colombian ♂♂ the margin of the hindwings above is without the red filling. The model is *Heterosais aureola* or *Napeogenes corena*. According to the appearance of the corresponding model is also that of *cascella* of which hardly two entirely equal specimens are to be found.
- callixena*. **I. *callixena* Hew.** (127 g) is connected with *Leucothyris* of the *sexmaculata*-group and has, therefore, white-spotted forewings; like there, the light space next to the inner margin is tinged bluish. Ecuador.

25. Genus: **Lepricornis** Fldr.

Likewise mimetic, according to models from the same groups as those of the preceding genera (*Ithomiinae*, *Cylopodinae*, *Arctiidae*). The genus is recognizable by the shape of the antennae looking as if thickened, but being in fact only densely scaled. The forehead has rough and projecting hairs. In the forewing the middle radial rises nearer to the anterior cellular angle, so that the middle discocellular (the upper one is absent) gets very short. The margin of the hindwing is in the middle very slightly angled. There have 10 forms been named, many intermediate forms are not named.

- melanchroia*. **L. *melanchroia* Fldr.** (127 e). This common species from Mexico greatly resembles *Tmetoglene eulesca*, but it is easily recognizable by the thickened antennae and by having orange-yellow palpi; generally also the sides of the neck are yellowish-brown. Wings black, somewhat lighter between the veins, before the apex of the forewing a white cuneiform spot.
- unicolor*. **L. *unicolor* G. and S.** (136 b) from Guatemala resembles the preceding, but the light spaces between the veins are entirely darkened and only indicated by a faint bluish lustre; there is no small white band of the forewing, but the collar and palpi are orange.
- strigosus*. **L. *strigosus* Stgr.** (127 e). Here the light spaces between the veins are present, but begrimed in a dark grey colour; instead of the small subapical band there are 4 white oval spots. From the Chiriqui, rather common.
- tristis*. — ***tristis* Schs.**, mentioned already by STAUDINGER, but not denominated, has a darker colouring and the white spots are shaded in dark; from Peru (Pebas). — ***meridae* Dyar** from Colombia and Venezuela exhibits, instead of the white oval spots, long hyaline diffuse spots which, however, are begrimed in grey. The sides of the neck and the palpi are more dull red-brown than orange-yellow. — The forms have been described from different countries, they are, however, not bound to them, but to certain flying-places.
- teras*. **L. *teras* Stch.** (128 c). Unknown to me in nature; is said to come from Brazil; ♂ from Sa. Catharina, ♀ from the Rio Madeira. According to the author's figure which we copy, the ♂ exhibits an oval subapical spot traversed by light blue veins; ♀ above unicolorous black, without blue, with the oblique spot like in the ♂.
- atricolor*. **L. *atricolor* Btlr.** approximates the preceding, but the upper surface of all the wings is very dark, the small transverse band before the jet-black apex of the ♀ white. From Brazil. Imitates certain *Getta*. —
- stygielis*. ***stygielis* Stch.** (142 b) has a somewhat longer subapical spot being, however, orange-yellow in the ♀. Peru.
- incerta*. **L. *incerta* Stgr.** (127 e). Almost like *strigosus*, but the spaces between the veins and the spots of the subapical band of a pure hyaline. Colombia to Peru. — ***cilnia* Stgr.** (127 e) from the Rio San Juan in Colombia has a yellow disc of the hindwing. — May already belong to the following genus.
- bicolor*. **L. *bicolor* G. and S.** (136 b) is unknown to me in nature. Disc of the wings orange; in the apex of the forewing there is an orange spot. According to the authors, it is said to belong here owing to the veins; but as the veins are not very characteristic of the genus, its position remains doubtful to me. It imitates certain *Cylopodina* (*Oricia*) and was described from Panama.

26. Genus: **Pheles** H.-Schüff.

Differing from the preceding genus by the short appressed (not projecting like a hair-tuft) hairs on the forehead, as well as by the posterior discocellular of the forewing being also stunted beside the anterior one. Palpi rust-yellow, bristly, as in *Lepricornis*; wings hyaline.

Ph. heliconides *H.-Schäff.* (128 a, b). Wings hyaline with black veins and margins, the forewings *heliconid. s.* with an oblique band across the cell-end. Middle of the forehead silvery white. Imitates species of *Hypoleria* and *Ithomia*. From Guiana and the Amazon. — In *rufula* *Sm.* from Ecuador the hyaline patches of the distal *rufula.* band before the black border of the forewing are dusted in orange, and in *rufotincta* *Bat.* from the Upper Amazon *rufotincta* the orange is noticed also at the posterior end of the hyaline patches in the hindwing. Not rare.

27. Genus: **Isapis** *Dbl.*

This genus contains only 1 species which, however, is very widely distributed, although it occurs sporadically. The head is broad with very thick eyes, a flat forehead, short palpi and thick antennae ending with long and stout, fusiform clubs. The forewings are long with a round margin and a little marked anal angle.

I. agyrtus *Cr.* (132 c). Black, forewing with an orange-yellow oblique spot; beneath a yellow transverse *agyrtus.* band runs across the basal part of both wings as far as to the anal angle of the hindwing, where it is in some ♀♀ still to be seen round the inner margin as a small narrow, yellow inner marginal stripe on the upper surface. It varies at every habitat, though not according to countries, as for instance on the Amazon there occur specimens with a broad and a narrow band of the under surface, as well as in Surinam etc. Specimens from Santos have a deep orange-red stripe of the forewing, turning somewhat distally at the costal margin, and a moderately broad band of the under surface. We have considered this form to be *sestus* *Stich.* and figured *sestus.* by this name, owing to the author's statement „Brazil, Bolivia“; but as the author states, his *sestus* corresponds with our figure of *mithrophorus* (132 c), which, however, represents a Surinam specimen. — ♀♀ with a yellow inner marginal border of the hindwing, as they are before me from Bolivia, *STICHEL* denominates *praxinus.* **praxinus.** from „Venezuela“. — **hera** *G.* and *S.* (Guatemala) forms a transition to **falcis** *Weym.* (132 c) provided with a band of the under surface as thin as a thread, from Colombia, the ♀♀ of which exhibit besides a „less band-like *hera.* *falcis.* band of the forewing“. The butterflies are very local, but not rare at their flying-places. They sit on the tips of twigs with their wings clapped together, and are particularly fond to do so on small bare branches, on the upper surface, the antennae stretched forward parallel in the direction of the clearing in the woods; on being chased up they fly only a few metres off. The range extends from Central America to Bolivia and South Brazil.

28. Genus: **Panara** *Dbl.*

This genus has 2 species being rather near to each other. They are black animals with an orange oblique band of the forewing, as we find it also in *Isapis* and many other *Erycinidae*, whereby resemblances are produced with the said genus, as well as with species of *Mesene*, *Aricoris*, *Chamaelimonas*, *Lymnas* etc. The animals are rather strongly built and exceptionally good flyers and also sometimes fly about in day-time, the flight being somewhat like that of *Heterocera*, so that they are difficult to distinguish from quite a number of homologically coloured species of Geometrids and Arctiids found at the same places. In the hindwing the cell is possibly still shorter than in most of the other *Erycinidae*; on the forewing the first subcostal vein branches off just before the cell-end, the second directly behind it. Although the butterflies are not so local as the other *Erycinidae*, their life-history is not known.

P. phereclus *L.* (132 c). Only the forewings exhibit an orange band being situated sometimes more steeply, *phereclus.* sometimes more flatly, and varying at every habitat. It generally (in specimens from the Amazon) reaches almost the costa and anal angle. — **barsacus** *Ww.* (132 c), with a somewhat shorter orange band, is connected with *barsacus.* *phereclus* by all transitions and ought not to have been separated. Amazon, Guiana. Some specimens, especially ♀♀, have in the hindwing white or chequered fringes, being, however, quite accidental. — **comes** *Stich.* originates *comes.* from Peru, Ecuador, and Bolivia, but does not differ constantly from the typical form, neither by the fringes nor by the size, as the species varies everywhere in this respect. — ab. **lemniscata** *Thm.* are specimens (before *lemniscata.* me are only ♀♀ from Colombia) with a white oblique band of the forewing. — **episatnius** *Prittw.* (? sicora *Hew.*) *episatnius.* (132 d) has broad and long oblique bands reaching in some ♀♀ the distal margin at the anal angle and running straight or curved (**arctifascia** *Btlr.*). From South and Central Brazil. All the forms may have in the ♂ an *arctifascia.* intense ultra-marine reflection beneath, more rarely also above. Not rare.

P. thisbe *F.* (= *iarbas* *Ww.* nec *F.*, perdita *Hbn.*) (132 d). This species has longer hindwings and on *thisbe.* them also an orange band forming with that of the forewing nearly a right angle. In typical specimens (generally found in Guiana and North Brazil) both the orange bands are rather narrow. In *soana* *Hew.* (132 d) from South *soana.* Brazil the band of the forewing is especially much broader towards the costa, the band of the hindwing slightly curved. — In *thymele* *Stich.* from South Brazil the band of the forewing lies more flatly, that of the hindwing *thymele.* is placed somewhat distally; this is of course only the character of the flying-place, as specimens from different habitats always exhibit differences of the bands. — **ovifera** *form. nov.* (132 d) from Petropolis in South Brazil *ovifera.* exhibits the band of the forewing reduced to an oval; — in **ectypsis** *form. nov.* (132 d) the band of the hind- *ectypsis.*

aureizona. wing is entirely blind, i. e. simply indicated by a lighter ground-colour *); Espiritu Santo. -- In *aureizona ornata*. Btlr. the band of the hindwing is altogether absent above, and in *ornata* Stich. (132 e) it is only indicated at the end in the middle of the inner margin. These forms are not bound to certain countries, but they occur everywhere in the range extending from Guiana to South Brazil. Beneath often with a blue reflection. Single and local, though not very rare.

29. Genus: **Riodina** Ww. (= *Erycina* Hbn.).

Approximating the preceding genus in the exterior, but the basal part of the costa somewhat protruding; in the hindwing the middle of the border between the lower radial vein and the upper median is sometimes angled or even lobate. Easily recognizable by the colouring and by the sides of the abdomen not being variegated, whereas in *Panara* they are brightly coloured in orange. Few species are known and distributed from the northern coast of South America to Peru, Bolivia and Argentina. Like the *Panara*, they fly in the sunshine and preferably settle down, with half-opened wings (about like our *Chrysophanus phlaeas*) on fern-fronds and low leaves of Canna. They belong to the more common *Erycinidae*.

lysippus. **R. lysippus** L. (132 e). Extremely variable regarding size, orange band and white dotting. Black; above on both wings, from the costa to the anal angle, there runs a generally broad orange band; disc studded with light dots. The orange band may be as thin as a thread (in some places of Venezuela) or also very broad (= *lysias* Stich. 132 e); then it is sometimes proximally shaded in white or filled up with white. — *lysias*. A form, entirely black above and beneath, without an orange band and with hardly noticeable dotting flies near Bolivar in Venezuela; it is **negrita** form nov. (132 e). — In Colombia flies a very small, scarcely dotted form with conspicuously uniformly bent, narrow bands, which I denominate **erratica** form. nov. (132 e) and which one might rather take to the following species at first sight. Typical *lysippus* chiefly occur in Guiana and on the Amazon; near Humayta on the Rio Madeira they are very intensely dotted, at the same place where also *Amarynthia meneria* fa. *superior* (132 g) has the widest bands and the whitest spots.

lysippoides. **R. lysippoides** Berg (132 e, f). In shape and colouring very much like the preceding, but smaller, lighter brown and without the light dotting. In specimens from Argentina, where I often came across this species in the agricultural park near Palermo on the Silver River, the small band of the hindwing is confined to the inner marginal part of the wing; in specimens from South Brazil it is better developed and also that on the forewing broader. This form also shows already the marks of the light dotting and thus forms a transition to *lysippus*; I call it **crioeus** form. nov. (132 f).

lysisca. **R. lysisca** Hew. (132 f). — HEWITSON figures 3 forms of this butterfly all of which occur, though not so often, in the same district, but mostly separated according to the flying-places. STICHEL denominates each form, the rarest one (both wings with an orange band) as the type. The form without the band of the forewing he calls **refracta** (132 f), the insignificant transition with an incomplete band of the hindwing **infirmata**. In case these names be maintained, especially also those unbanded specimens would have to be denominated, in which also the marginal band of the hindwing has disappeared except some scattered traces of it. Often the two bands are simply indicated at the ends by spots. South Brazil, São Paulo and Rio Grande do Sul.

lysistratus. **R. lysistratus** Burm. is said to be confined to Argentina and South Brazil and constantly to differ from the Paraguay-form **luctus** Berg (132 f). But also the latter varies, particularly with respect to the costal marginal spot of the forewing which may be yellow or white, oval or in the shape of a small band. Not rare. As to the form *pelta* Schs. cf. Additions.

lysimachus. **R. lysimachus** Stich. (142 f) has the habitus of the preceding species, but the margin of the hindwing is very much lobated, the orange band running through the whole forewing. Neu-Freiburg (South Brazil).

30. Genus: **Lymnas** Blch.

Easily recognizable by the very long forewings with a rather steep distal margin and short hindwings with a round margin. The body is of a clumsy structure, often with scarlet or orange markings, the head stout with projecting palpi being, however, only in single species so long that they become visible from above. Antennae thick, quite gradually thickened to weak clubs. The butterflies are mostly black with a red, yellow or white oblique band of the forewing or a variegated border of the hindwing; often also the apex of the forewing is yellow or white. The veins are in some species very conspicuous, projecting from the velvety-black ground. Beneath some species exhibit a faint blue reflection (e. g. *L. passiena*), above not. Only few species deviate from the general colorial type owing to mimetic influences (e. g. *L. thyatira*). The larva is said to be hairy (BOISDUVAL), the pupa stretched similarly as an *Acralin*, with light colours and dark spots, small protuberances on the back of the abdomen. The imagines drink early in the morning from wet stones and

*) By a mistake the band of the hindwing of *eclipsis* was depicted in yellow on our figure; the artist had probably thought that it was discoloured by oil, and had corrected it according to another specimen; the yellow on the hindwing is in fact entirely covered by black scales.

places on the roads and rest in day-time beneath leaves: some species are extremely rare, others very common. There are more than 50 forms known, including the hardly deviating *Aculhua cinaron*.

L. cinaron Fldr. (= *inea* Rüb.) (131 a). Above sooty black, the hindwings with a straightly cut-off, yellow distal band; beneath the wings have lighter veins. — About 100 specimens before me originate from different parts of tropical South America. According to the habitat, the margin of the hindwing is sometimes more orange, sometimes more light yellow or light lemon-coloured, broader or narrower: the light veins are distinct sometimes on all the wings, sometimes only on the hindwings. From Colombia to the south as far as South Brazil in the east and Bolivia and Peru in the west, in Ecuador up to a considerable altitude, otherwise preferring the lowlands. — **corvina** Stich. (131 a, as *serriger*) lies before me in the type; it comes from the Cauca Valley in Colombia; here the inner edge of the marginal band on the hindwing is serrate-dentate. — **crenitaenia** Stich., unknown to me in nature is like *corvina*, but it has in typical specimens an orange-yellow apex of the forewings; from Costa Rica. — **signata** Stich. has besides another orange spot before the anal angle of the forewing; Costa Rica. Other deviations are of secondary importance. Apparently in many places not rare, but near Rio uncommon.

L. alena Hew. (131 a) resembles somewhat a large *cinaron* (131 a) with a yellow apex of the forewing, but differs greatly by its shape and size. The sides of the abdomen are of a bright purple-red; the yellow distal marginal band of the hindwing is just the reverse of that of *crenitaenia*, since on the veins continuations of the yellow distal band extend towards the base, whereas in *crenitaenia* black continuations of the ground-colour extend towards the margin. Rare, on the Corcovado near Rio de Janeiro and in Colombia; probably widely distributed, but owing to its great rareness discovered only in few places.

L. passiena Hew. (131 a). Likewise black, apex of the forewing and margin of the hindwing orange-red, but the extremest margin and the fringes black, so that the orange-red appears somewhat removed from the margin. Colombia. — In **aulonia** Hew., described from Bolivia, more than the apical third of the forewing is orange and the marginal band of the hindwing more than twice as broad.

L. pixe. Of this multiform group with an orange-yellow apex of the forewing and an equally coloured margin of the hindwing one of the first branches is **zoega** Hew. (131 a). Size and width of the orange-yellow varies at almost every place, where it is found; all the specimens, however, found at the same place, exactly correspond with each other. *zoega* occurs more in the southern part of tropical South America, in South Brazil, Paraguay, Bolivia and Peru. Typical *zoega* originate from Ulinas Geraes, they have near the base of the forewing a distinct red dot and a rather small orange apical margin.; the figured example is a large ♀. — Sometimes instead of the apical spot, the whole margin of the forewing is orange-yellow in a width of 1—2 mm: this is the form **smithiae** Ww. (131 b). — An intermediate form is created by the apical spot extending into a chain of small orange marginal spots: **aurolimbata** Thieme (131 a), from Ecuador and the adjoining Amazon District as far as Bolivia. — The form of the group described first is **pixe** Bsd. (131 b) from Mexico and Central America, in which the margin of the hindwing is of a purple-red instead of orange-red. This marginal band is then generally divided into spots by black veins, and the red basal spot of the forewing varies greatly in size. — In **sexpunctata** form. nov. it is coherent, but at the inner margin indented by the black ground-colour; the basal spot of the forewing is large and there appear some more red dots at the base of the hindwing and above the anal angle of the forewing; from Guerrero; — this increase of the red may be still continued, finally leading to the form **sanguinea** Stich. (131 b) which we figure from Costa Rica and which exhibits an enormously enlarged basal spot and some more hemochrome spots before the margin of the forewing. — Of this there is again another side-form in which the spots at the distal margin of the forewings are orange. It comes from Mexico, but it probably has another habitat as the larger *sexpunctata* from which it differs most conspicuously by the marginal band of the hindwing being here orange, in *sexpunctata*, however, scarlet. — **flammula** Bates is like *zoega*, but it has a much more extensively orange apex of the forewing, though the orange is not, as in *smithiae* or *aurolimbata*, continued along the distal margin: the hindwings have a moderately broad orange margin and all the wings a crimson dot near the base. Near Tefé, rare, probably hardly to be maintained as a proper form of *zoega*; according to STICHEL also in Brazil and Bolivia. — **gynaecceas** G. and S. has, like *pixe*, a yellow apex of the forewing and 4 red basal dots, but by the reduction of the yellow margin of the hindwing it forms a transition to *xarifa*. Central America and Mexico.

L. xarifa Hew. (131 b). Black, the forewings with an orange-yellow apex, the hindwings, however, without a yellow margin. The animal is comparatively very common and distributed all over the northern part of South America, but it varies at every habitat. Particularly the apical spot is sometimes very small and narrow, sometimes larger than our figure shows. It is quite useless to denominate all these forms, because animals living only a few miles away from each other exhibit already constant differences, corresponding, however, again with others that were taken at great distances from them. Also with respect to the red basal dots there exist all kinds of possibilities: in the type there is a very large dot near the base of the forewing; in **quadripunctata** Stich. another dot like it appears at the base of the hindwing, in **impunctata** Stich. (131 b) the red dots are absent altogether.

L. vidali Dogn. approximates the forms of *zoega* belonging to the *pixe*-group, and is immediately recognizable by the apical spot of the forewing being also of a magnificent hemochrome; from Loja in Ecuador. — **laticlavata** Stich. from Colombia has a broader red marginal band of the hindwing and the apical spot is enlarged.

unxia. **L. unxia** Hew. (131 b) has a superficial resemblance to a *xarifa*, but the orange spot of the forewing is not placed at the apex of the wing, but removed somewhat into the wing. In South Brazil, near Rio de Janeiro, Santos, probably very widely distributed (over the whole of South West Brazil), but everywhere very rare, and like most of the *Erycinidae*, of a very local, insular occurrence. On hundreds of excursions in its proper range, I have never come across one specimen, and also v. BOENNINGHAUSEN who collected for 33 years near Rio de Janeiro, told me that on innumerable excursions he saw but few specimens during all this time — It flies on the Monte Corcovado near Rio de Janeiro.

volusia. **L. volusia** Hew. nec Boenningh. (131 c). This species already forms a transition to the numerous forms with a white or yellow oblique band of the forewing which, however, is here simply indicated by a stripe-shaped clearing obliquely across the disc of the forewing. The form which I know only through HEWITSON, almost looks like a *Xenandra*, and v. BOENNINGHAUSEN considered it to be the ♂ of the ♀ figured by HEWITSON as *agria* (131 h). Described from Rio de Janeiro; extremely rare and probably not flying in the immediate neighbourhood of the town, but in the Organ Mountains.

lycea. **L. lycea** Hbn. (131 c). Hindwing with an orange margin, forewing with orange spots before (not in) the apex and smaller ones along the margin. In the centre of East Brazil, near Bahia, Pernambuco. Rare

erythrus. **L. erythrus** Mén. (131 c). The orange marking of the forewing is reduced to an oblique band before the apex, being continued in triangular spots as far as to the anal angle. In the marginal band of the hindwing there appear black marginal dots. Larger than the preceding; the typical form has near the base of the fore-

xeniades. wing a large red dot. — In *xeniades* Stich. (131 c) the red basal dots are absent and the orange is more red.

depompata. — In ab. **depompata** Stich. (131 c) being in some districts more common than *xeniades* that part of the band of the forewing which cuts off the apical part is absent. — In *xenia* Hew., on the contrary, this part of the orange band is present, but the chain of spots to the anal angle is entirely or almost entirely absent, and the dot near the base of the forewing is small and yellow instead of red. South and Central Brazil, mostly rare.

ambryllis. **L. ambryllis** Hew. (131 c, d). This less rare species which some time ago was introduced in great numbers from Paraguay, has an oblique band before the apex and a band before the margin of the hindwing of a white colour. It varies at every habitat. The band of the forewings is either widened, or prolonged, or narrowed or shortened, disproportionate, divided into pieces, pointed or truncate. Beside these possibilities, the band of the hindwing may be broad and coherent, or narrow or rudimentary. Apart from this, there may be at the base of all the wings or only the forewings red dots varying again in their turn according to the part of the forest where the animals were captured. Furthermore, there are also yet differences of size, since larger specimens predominate in the west, smaller ones in the east. By the combination of these deviations we obtain about 30 forms according to the material before me. STICHEL denominates one of them *dialeuca*. Just such a specimen as STICHEL figures it, is not contained in the abundant material before me; it is characterized by a (as stated) broader band of the forewing and a narrower one of the hindwing. Our figure of a Paraguay-♀ approximates it, but above it has the white band of the forewing by no means broader than that of the white Bolivian *ambryllis* collected in great numbers by JOSÉ STEINBACH. — *ambryllis* is not only less rare than most of the *Lymnas*, but it also flies lower and does not stay, like most of the other species of the genus, almost exclusively on the tops of the trees.

cephise. **L. cephise** Mén. (131 d). Black with light veins, like the preceding, but without bands, the red dots, however, appear very prominently near the base of the wings. Mexico and Central America. In typical *cephise* the fringes of the forewing are black; in *acroleuca* Fldr. (131 d) the apex and wings are distally bordered by a narrow white. Both the forms occur in the same districts. — **nigretta** form. nov. (131 d) has the fringes at the apex of the forewing and at the border of the hindwing orange-yellow; from the Itaituba, probably the blackened form of another species from the *ubia*-group, entirely smaller and less distinctly veined. Not common.

araguaya. **L. araguaya** sp. nov. (131 d). Ground-colour like in *cephise*, the fringes dark, the veins less white; across the cell-end runs a dull bone-white, narrow oblique stripe being continued to the upper median vein. Goyaz.

aegates. **L. aegates** Hew. (131 d). Similar to the preceding, but the fringes at the hindwings and the apex of the forewing of a bright white, the oblique spot of the forewing of a purer white and more than twice as broad as in *araguaya*. All the specimens before me are exactly alike and originate from Tanampaya in Bolivia, evidently

nigrapex. from the same locality, collected by GARLEPP. — In the form **nigrapex** form. nov. (131 d) from Paraguay the apex of the forewing is without the white fringes, the oblique spot is above shortened and oviform, the red

cretiplaga. dot near the base of the forewing enlarged beneath. — **cretiplaga** Stich. (131 e) which I received in great numbers from STEINBACH, from Salta and Tucuman in North West Argentina, is an intermediate form between the two preceding, scarcely differing from *aegates*, only the white oblique spot shortened and narrowed beneath.

leucophlegma. — **leucophlegma** Stich. is not known to me; but in the Tring Museum I find specimens from Peru with a bone-white band of the forewing and a broad white margin of the hindwing, apparently only differing from it by

the band of the forewing extending beyond the middle median vein and the disc of the hindwing being beneath brightened up in the middle by bone-white. Probably they are from the same district, though from another finding-place, as *leucophlegma*, the type of which is said to be in the Paris Museum. I denominate them **leucophlegmoides** (131 e).

leucophleg-
moides.
cratippa.

L. cratippa *sp. nov.* (131 e). Deeper black than the preceding, the veins somewhat lighter, the wings more pointed, the white band of the forewing straight, of a pure white, extending as far as to the middle median vein, the apex of the forewing only beneath distinctly whitish. Maranhão (North Brazil); Matto Grosso. It is to *aegates* *Hew.* exactly as *opites* *Hew.* is to *melander* *Cr.*

L. hillapana *Röb.* (= quadriplaga *Thm.*) (131 e) is larger than the preceding, the apex of the forewing very much fringed in white, the oblique band broad and straight almost to the anal angle; Peru, Bolivia. — In **pronostriaga** *Stich.* (131 e) from Colombia and North Brazil, in addition to the band of the forewing, the fringes at the apex are also orange-yellow. — **albugo** *Stich.* (131 e) has the band reduced to an oblong oval, white; its aberration being sold in the trade by the name of *paulina*, denominated by STICHEL as *impura*, has the reduced band ochre-yellow. The two latter forms have come in great numbers from Paraguay during the last decades, where they are near Sapucay evidently not so rare as most of the other species of *Lymnas*.

hillapana.

pronostriaga.

albugo.

impura.

L. semiota *Bat.* is near to *hillapana*, but differs by the oblique band in the forewing being yellow instead of white. Tapajoz. It forms a transition to the *melander*-group.

semiota.

L. melander *Cr.* (♂, nec ♀) (= *melliplaga* *Stich.*) (131 f) has the honey-yellow band of the forewing more oblong quadrangular; the fringes of the hindwing likewise honey-yellow. Guiana. — **opites** *Hew.* resembles *melander*, but it is smaller, the ground-colour deeper black, the fringes of the hindwing and the apex of the forewing not yellow. Is to *melander* as *cratippa* *Sz.* is to *aegates* *Hew.* Brazil.

melander.

opites.

L. electron *Godt.* (? *melander* *Stich.*) (131 f) is smaller, the spot more whitish yellow and narrower, so that a resemblance is created with *iarbas* *F.* from which it differs beside its smaller size by the fringes of the hindwings only being yellow, not also the margin of the wings. The yellow band of the forewing is besides slightly curved, not so straight, and more pale than dark golden-yellow. Northern parts of South America.

electron.

L. ubia *Fldr.* (131 f). Differs from the preceding by the much broader, nearly oval oblique band of the forewing and by the presence of small orange marginal spots separated from each other by small indentations of the black ground-colour, before the orange-yellow fringes of the hindwing at the anal marginal part of the hindwing. Venezuela and adjoining parts of Guiana and the Amazon.

ubia.

L. epijarbas *Stgr.* (131 f). This robust form is probably little connected with the smaller, delicate *ubia*. A band-like spot, the extremest apex of the forewing and the margin of the hindwing are orange yellow. The butterflies are very constant; among a great number of specimens before me from Itaituba there is not one that varies. — **echidna** *form. nov.* (131 f) superficially resembles *ubia* the small marginal spots of which, however, are here united to an orange-yellow marginal band of the hindwing; whereas the oblique spot of the forewing is much narrower. It is also larger, more slender and with more pointed wings than *ubia*, more densely scaled and with intenser colours. From San Estaban in Venezuela.

epijarbas.

echidna.

L. iarbas *F.* (= *jarbus* *Stgr.*, *electron* *F.*) (131 g). Presumably the most common species of *Lymnas*, from Venezuela to Ecuador and in the islands of Curaçao and Trinidad. On a deep black ground, all the wings exhibit a large spot similar to a small drop of blood, near the base, while the forewings show a sharply marked orange band and the hindwings a similar margin. Although the species varies little on the whole, still the inhabitants of certain flying-places are easily discernible, as for instance in Trinidad, from which island there are about 60 specimens before me, the examples from the interior are distinctly different from those from Port of Spain. Those from the island of Curaçao have even been denominated: **herellus** *Snell.* Above all the spots resembling drops of blood vary, especially on the hindwing; the oblique band may be somewhat broader, narrower, more obtuse, irregularly defined and so on; the golden-yellow marginal band of the hindwing may be of different width and extend from the anal angle to the apex, half the length of the margin to $\frac{1}{3}$ of the margin, it may even be absent altogether so that only the fringes are yet yellow; this is **rabuscula** *Stich.* In the same way we may leave a name also to the other extreme, **melantho** *Mén.* (131 g), a special form from Central America (contrary to SALVIN and GODMAN who simply denominate them *iarbas*). These specimens have a golden-yellow apex of the forewing, and the very broad margin of the hindwing is deep orange-red. On the other hand, the delimitation of the more southern specimens (*auriferax* *Stich.*) with somewhat broader wings, a wider oblique band and an unreduced marginal band of the hindwings necessitated the denomination of quite a number of side-forms. These specimens are not characteristic of any district, exhibiting all the transitions to the type. — In southern specimens the band of the forewing may be orange-yellow, but also white; v. BOENNINGHAUSEN reports even of examples from Rio Grande do Sul the oblique band of which is half white, half yellow. Certainly the shape or colour of it varies at every habitat in South Brazil, and *charon* *Btlr.* described from Rio is probably nothing else but the Corcovado-form of this widely distributed species.

herellus.

rabuscula.

melantho.

cercopes. **L. cercopes** Hew. (131 g). This peculiarly coloured butterfly is without the red subbasal dots as well as the oblique band, so that only the orange-yellow margin or the hindwing remains extending at the apex into the forewing, at the anal angle of which it forms a point showing towards the cell-end. Peru; all the specimens I examined, also the figured one, originated from Pozuzo. — **andania** Hew. (131 g) looks quite differently, but it is connected with *cercopes* by a number of transitions. The yellow margin of the hindwings is often (not always and mostly only above) smoothly cut off against the ground-colour, and the yellow ray showing from the anal angle of the forewing towards the costa extends as far as to the subcostal or even reaches the costa; from Bolivia and Peru. The figured specimen originates from Salampioni in Bolivia, 800 m. Specimens from lower districts mostly are somewhat larger.

cratia. **L. cratia** Hew. (131 g). Immediately recognizable by the broad purple abdominal parts leaving free only a narrow black dorsal stripe on the 2. to 5. ring. Wings jet-black; the forewings with an orange-yellow oblique band, the hindwings with a narrow, incomplete golden-yellow marginal band. Colombia and Venezuela; not rare.

hodia. **L. hodia** Btlr. From Valdivia in Colombia, has remained unknown to me. Cf. Additions.

phereclus. **L. phereclus** Cr. (= *seleukia* Stich.) (131 g, h). Exteriorly somewhat similar to *Panara phereclus* L. above blackish-brown with an orange oblique band, but immediately discernible by the under surface, where the hindwings exhibit a hemochrome basal spot and white veins, whereas in *Panara* they are velvety black, sometimes with a blue reflection. South Brazil, Guiana, Peru; in the range of *Panara* where it flies in the company of other equally coloured *Erycinidae*, such as the ♀♀ of *Mesene sagaris*, some ♀♀ of *Aricoris* etc., but also with numerous patented *Heterocera*, such as *Mirradaemon ursula* Stoll and others. — Rare.

marathon. **L. marathon** Fldr. (= *ctesiphon* Fldr.) (131 h). I figure the type from the Coll. FELDER which LOID ROTHSCHILD had the kindness to lend me. In this ♀ the band of the forewing is seen slightly curved proximally. Colombia to Peru. — In *stenotaenia* Rüb. (131 h) from Pozuzo the band runs rather straight and is narrow, in *assimulata* Stich. (131 h), the most common form from Colombia frequently found in the so-called „Bogotá-Collections“, it is even somewhat proximally concave and shortened. — All the forms of *marathon* have magnificent purple sides of the abdomen, whereby they show an alliance with *cratia* Hew.

barca. **L. barca** Hew. (131 h). This peculiar species from Pernambuco shows at first sight that it has borrowed the exterior of an *Actinote* together with which it must consequently fly. There is only a secondary resemblance with a *Stalactis susanna* (which likewise copies *Actinote*). The model for *Lymnas barca* and *Stalactis susanna* is probably an *Actinote* of the *leptogramma*- or *hypsipetes*-group.

thyatira. **L. thyatira** Hew. (= *phlegontis* Stich.) (131 h). This butterfly is likewise subject to mimicry. It imitates *Eueides aliphera* and, because in mimicry only the total appearance, but not the repetition of finer details in the marking is of a biological value, it is so inconstant that I have never yet beheld two equal specimens. Only larger series of the different habitats would permit „subspecies“ to be established; but the butterfly is so rare that for the present the collections mostly contain only single specimens from the different habitats. The variation refers to the ground-colour, size, length of the black rays, width of the margins and their delimitation. The figured specimen originates from Cuyaba and differs just as much from that in HEWITSONS. collection from the Amazon, as from the one figured by STICHEL in WYTSMA'S Genera Insectorum. Brazil, Bolivia, Colombia, Guiana; dispersed and rare.

31. Genus: **Xenandra** Fldr.

Is closely allied to the preceding genus, i. e. to its mimetic group of *barca-thyatira*. All the species belonging hereto are rare. The butterflies have still longer forewings than the *Lymnas*, from which they are otherwise distinguished only by the very stout (in the ♀) and quite short (in the ♂) abdomen. Owing to the narrow wings the flight of the ♀♀ is almost whizzing, quite similar to that of the copied *Heterocera* (*Cyllopodinae*). May be that some more species having hitherto been treated as *Lymnas* will prove to be better included in *Xenandra*.

agria. **X. agria** Hew. (131 h, misprinted in *argia*). The ♂ belonging to this ♀ which I only know from HEWITSON is unknown to me. The ♀ is surely mimetic copying some of the South Brazilian Pericopiids or other Arctiids which partly fly in day-time or are often chased up. All the 4 wings with orange-yellow marginal spots, the forewings with a broad, golden-yellow oblique band sending below the costa a ray towards the base, the hindwings with a yellow cell. Very rare, in South Brazil; v. BOENNINGHAUSEN captured the animal only once in more than 30 years, near Rio de Janeiro; he presumed it to be the ♀ of *Lymnas volusia* which is just as incorrect as STICHEL'S presumption that it belongs as ♀ to *Xen. heliodes*.

X. helius Cr. (♀ = *limnatis* Stich.) (131 i). In the Guianaform (which presumably lay before CRAMER) *helius*, the ♂ shows a costal golden-red oval of the hindwings not reaching the base. **cruentata** Stich. with a scarlet *cruentata*, spot of the hindwing seems to be the Peruvian form of it. The ♀ of *helius* is by far larger than the ♂, with particularly long forewings exhibiting an obsolete oblique band varying in size, shape and colour. If we would denominate all these differences of the band, we could give just as many names as there are specimens, for among relatively numerous ♀♀ of this species I did not find two equal ones! — **heliodes** Fldr. (? *dibapha heliodes*, Stich.) (131 i, *helioides* on the table) not exactly described by STICHEL may be identical with the form occurring outside of Guiana, in Venezuela and Brazil. Here the costal area of the male hindwings is miniate, and this colour extends as far as to the base of the wing. The ♀ of it is scarcely larger than the ♂ with a bright golden-yellow or golden-red (*miniacea* Stich.) and much less variable oblique band of the forewing. The species is rare.

X. vulcanalis Stich. is unknown to me; it is said to be black above with a large, nearly oviform, *vulcanalis*, bright red spot on the hindwing, the tip of which touches the base of the hindwing; from Rio San Juan in Colombia. Length of forewings of the ♂ 16 mm. Except the red spot of the hindwing touching the base, there seems to be hardly any difference from the preceding.

X. nigrivenata Schs. from Costa Rica has the greyish-green shining spaces between the veins as *nigrivenata*, *prasinata* (131 i) shows them, but besides a large, orange-red costal spot of the hindwings extending from near the base almost to the margin and to the median. From Juan Vinas.

X. prasinata Thieme (131 i). ♂ blackish-green, the hindwings at the border with glossy bluish-green *prasinata*, radiate spots; beneath the wings are almost exactly like those of the other *Xenandra*, dull golden-green, with black veins. The ♀ may be coloured like the ♂, but larger and with broader wings, but it may also occur without distinct marginal rays and with a whitish or variegated oblique band on the forewing. These different forms fly simultaneously at the same localities. Their affinity is easily recognized by the abdomen being beneath in the middle of a bright reddish-yellow or red. Rare.

X. pulcherrima H.-Schäff. (128 a) fits badly into this genus, but neither to *Lymnas* nor, according *pulcherrima*, to STICHEL'S examinations, to *Themone* nor in any way to *Eurygona* (*Euselasia*). Hindwings as in *prasinata*, but the blue radiate spots somewhat removed from the margin; forewing with a chain of white, posteriorly blue-tinged spots. There is a most conspicuous broad yellow median band on the under surface. Surinam. Unknown to me in nature; apparently very rare.

32. Genus: **Barbicornis** Latr.

Easily recognizable by the very small hindwings provided with a long apex of the tail on the lower radial (uppermost median). All the species of *Barbicornis* correspond to homochrome forms of *Lymnas*, as has already been said in the Preface (p. 620). Most of the species are rare, exhibiting characteristic differences at every habitat and having about the same habits as the *Lymnas*.

B. acroleuca Berg (132 a). Black with ochre-brown collar, the chief veins of the wings with pale *acroleuca*, yellow markings, the apex of the forewing white. Paraguay. — **tucumana** Thieme (132 a) is a small stunted *tucumana*, form collected by JOSÉ STEINBACH in the barren district of Tucumán in Argentina. Not common.

B. melanops Btlr. Herewith all the species ought to be combined, being above black with a yellow *melanops*, oblique spot before the apex of the forewing. This oblique spot has a different appearance at every habitat. — In specimens from Espiritu Santo it has such a cuneiform shape that the thick end of the wedge lies at the distal margin, the tip of it at the costa (= **cuneifera** ab. nov.) (132 a). — In typical *melanops* from South *cuneifera*, Brazil and Paraguay the band is uniform, at the costa even a little broader than at the distal margin. — In ab. **abotacta** Stich. (132 a) which was taken together with typical specimens near Sapucay in Paraguay, it is *abotacta*, a little shortened and light yellow. — ab. **fusus** ab. nov. (132 a) has the oblique band orange-yellow, *fusus*, like the typical form, but as a fusiform spot, on both sides sharply pointed; in barren districts, mostly also very much smaller than Brazilian specimens. — **ephippium** Thieme (132 a) has the most extensive oblique *ephippium*, spot; at the costa it is so widened that it occupies its whole median third; here also the veins are more prominently light. — **aterrima** form. nov. (132 a) is entirely black, with indistinctly light veins; it might, *aterrima*, therefore, be taken to be an *acroleuca* having lost the white apical margin; but the shorter, more straight tail of the hindwing characterizes it as a *melanops* in which the oblique band of the forewing is absent; from South Brazil and Paraguay.

B. basilis Godt. (132 a). Probably only a form of the preceding, differing by the basal part of all *basilis*, the wings exhibiting another, very differently shaped orange spot. — In **dibaphina** Btlr. this spot is only *dibaphina*, on the forewings, while the hindwings remain black whereby an immediate transition is formed to the typical *melanops*. The typical *dibaphina* is only as large as the figured *basilis*. At some habitats, however, the animals

alcyoneus. attain an enormous size, though perhaps not in every year; I denominate these large specimens **alcyoneus** *ab. polyplaga*, *nov.* (132 b). These have again another modified form **polyplaga** *form. nov.* (132 b) in which the spots of the forewing are enlarged, the orange of the hindwing, however, divided into 2 or 3 spots. This form is before me from the Coll. BANG-HAAS without the patria being stated; the forewing also exhibits above the anal angle a third orange spot which is unfortunately somewhat indistinct in the figure.

mona. **B. mona** *Ww.* (132 b). Like *melanops*, but also the hindwing has an orange band at the distal margin, extending from the little tail to the anal angle. In this species the orange likewise varies in extent at every habitat. In typical specimens it does not only run from the costa of the forewing to the distal margin, but it follows it up as far as to the anal angle. The specimen I figure deviates already by the orange band not running continuously as far as to the anal angle, but a disjoined spot standing isolated at the anal angle. — If this spot is also absent and another reduction of the bands takes place, we have *ab.*

moneta. **moneta** *Stich.* before us. A specimen from Huancabamba lacks all the orange on the forewing. I must remark here again that all the specimens I captured at one place, were always exactly corresponding, but that already at the next finding-place small deviations were noticeable. — South Brazil, not rare, but very local and apparently never leaving their flying-place.

marginata. **B. marginata** *sp. nov.* (132 b), brownish black with an orange-red collar. The apical margin of the forewing and the whole distal margin of the hindwing, including the xiphoid, honey-yellow. Bahia. The animal is decidedly influenced in its colours by a form of the *Lymnas alena*-group or its model. *alena* itself was taken only somewhat to the south of it, near Rio de Janeiro, but it is only necessary to look at the animals in order to conclude that both must occur together, and were not yet taken at the same place only owing to their great rareness.

33. Genus: **Syrmatia** *Hbn.*

In this genus the hindwing is still more monstrous than in *Barbicornis*; the costal margin of it is greatly shortened, whereas the anal part of the hindwing accompanies the tail-appendage for a longer distance. All the forms probably belong only to one species exhibiting a special character at most of the habitats; but it may be out of the question that more than one form occurs at the same finding-place. The butterflies are widespread, flying in day-time in the sunshine at open spaces in the woods, with so great a resemblance with certain *Hymenoptera* and *Diptera* that I always captured them only when I was on the special look-out for such insects; but never when I was exclusively hunting for butterflies. They seem to be local, but by no means rare. They mostly choose their resting-place on the tips of the highest branches of high bushes or small trees. I have never found them on flowers.

dorilas. **S. dorilas** *Cr.* (= *asteris* *Gray*) (132 b). Forewing with a red small basal stripe and an oval white discal spot which differs somewhat at every habitat. STICHEL presumes that the ♀ has a white basal streak at the forewing, which, however, does not match my Santos-♀♀. ♂ and ♀ probably resemble each other, though differing according to the locality, as is the case in nearly all the American *Erycinidae*. — The form without the small red basal band was denoted as **nyx** *Hbn.* — In *lamia* *Bates* the small basal band is white and continued across the hindwing; in *astraea* *Stgr.* (132 b) it is red on the forewing, light-yellow on the hindwing; — **aethiops** *Stgr.* (132 b) is entirely black, also the white discal spot of the forewing being absent. — A very peculiar form lies before me from the Coll. FASSL from Villavicencio (Colombia). The ♂ exhibits the basal spot of the forewing entirely black without the little band; in the disk there is a white oval, about as in typical *dorilas*. The hindwing is entirely black; in the ♀, however, it exhibits such a broad, entirely white band that the whole anterior half of the wing appears white except the extreme base being narrow black. — The range is stated to be South America from the northern coast as far as South Brazil; but with W. SCHAUSS I saw a specimen from Costa Rica (forma *aethiops*).

34. Genus: **Zeonia** *Swns.*

By the long-stretched shape of the hindwing being even prolonged by the tail-appendage it resembles the preceding of which it reminds us also by the restless, almost whizzing flap of its wings. The resemblance with insects of other classes (especially *Hymenoptera*) already mentioned in *Syrmatia* is even increased in *zeonia* by the hyaline wings. Body somewhat more stretched than in *Syrmatia*, otherwise the structure already approximates the next genus, but with considerably shorter palpi being hardly visible above and projecting in the *Diorina* sometimes in the shape of a nose. The butterflies occur singly and very locally, but most of them are not very rare.

amazon. **Z. amazon** *Sndrs.* (130 g). This amazon-species of which we figure a very large ♀ is in itself one of the largest of the genus. It is characterized by the whole anal half of the hindwings being black, the anal lobe itself, however, broad vermilion; the tails are relatively short.

Z. timandra *Sndrs.* (130 g) is somewhat smaller; the hindwings, however, are narrower, especially *timandra*. In the anal part, the anal lobe itself is broad black, but above it is a small vermilion band under which there are mostly small white dots. Central and South Brazil; Rio de Janeiro, rare.

Z. licursis *F.* (= *xanthippe* *Gray*, *morissei* *Blch.*) (130 g as *lycursis*) likewise from South Brazil (Rio *licursis*. Grande do Sul). Recognizable by the red in the small anal band being broken up into two small separate apposite spots of a variable size.

Z. sylphina *Bat.* (130 g). An imposing form with broad bands, the small anal band being detached *sylphina*. from the inner margin of the hindwing, the latter itself, however, as far as the base of the wing hemochrome (= typical *sylphina*) or yellowish-red (ab *terpsichore* *Stich.*). Ecuador, Peru, Bolivia. — In a „subsp.“, *gratiosa* *terpsichore*. *Stich.*, likewise occurring in Ecuador, but unknown to me, the red anal spots are said to be „very large“ and of a „violet lustre“.

Z. heliconides *Swns.* (= *heliconoides* *Sndrs.*) has exactly the size, shape and black bands of *sylphina*; *heliconides*. but the red of the small band of the hindwing which is broad and angularly broken does not continue towards the base. SWAINSON, according to whose figure I describe the species, states „Brazil“ as its patria, but no special locality.

Z. faunus *F.* (*octavius* *F.*, *chorineus* *Cr.*) (130 g). This finely banded species is easily recognized by *faunus*. the red anal lobe which is only outside delicately bordered in black being drawn out into a red apex. This does not occur in any other species. Guiana, Amazon, Venezuela and the Isle of Trinidad. — *bogota* *Sndrs.* is somewhat more strongly banded and margined in black, and the hindwing broader black. Colombia and Central America. — Also in the *faunus*-forms the red may turn into dark yellow, as probably in all the *Zeonia*; such specimens are *orchestris* *Stich.*

Z. batesii *Sndrs.* (130 g). This little species is immediately recognizable by the hyaline area of the *batesii*. hindwing not being once more divided by a black band, as in all the other *Zeonia*. From the middle Amazon (Itaituba, Obidos, Rio Tapajoz), rare.

35. Genus: **Diorina** *Mor.*

Very much like the preceding genus, recognizable by the greatly projecting palpi; in some ♀♀ they are longer than the head. The shape of the wings resembles very much the preceding genus, particularly the long anal margin of the hindwings resembles *Zeonia*, as well as the sword-like tail-appendage. But the surface of the wings is no more hyaline, but black with a bright blue reflection in the ♂♂ and some ♀♀. Only 2 or 3 species are known, but they vary greatly. The imagines visit wet stones and places in the road in the morning, sometimes they are also seen playing round the tops of bushes in the sunshine. Their range extends from Mexico to South Brazil and Bolivia, often being rather common at their habitats.

D. arcus *L.* (= *butes* *L.*, *licarsis* *F.*, *rhetus* *Cr.*, *crameri* *Swns.*) (130 f, misprinted into *arcus*). This *arcus*. butterfly occurs in three forms in its range extending from Mexico to South Brazil and Bolivia: a northern one, *thia* *Mor.* (130 f), being distributed all over Mexico and Central America, with very fine hyaline bands and *thia*. a bright blue gloss of the upper surface. In especially dry and hot localities the bands are narrowed so much that they almost disappear; they have changed into fine lines which make the animal appear quite different. This form seems to me to agree with *castigatus* *Stich.* (130 f); it is apparently confined to small districts *castigatus*. of Mexico and Panama; the figured specimen originates from the mountains to the north of Agapulco. — The second form is the southern one, being distributed from Bolivia, Peru and Brazil to the north as far as the Amazon: it is *huanus* *Sndrs.* (130 f), recognizable by its smaller size, a duller blue reflection being *huanus*. confined almost entirely to the parts of the tail, and by a somewhat undulate distal hyaline band, the proximal one being broader. — The third form is the typical *arcus* inhabiting the rest of the range, particularly Guiana and the adjoining parts of North Brazil; it is still smaller, with broad bands, the ♀ with very thin and long, strongly bent tails. STICHEL finds a new subspecies, *amyceus*, upon a ♂ from Santa Catharina with a *amyceus*. shortened tail-appendage („almost in the shape of *dysonii*“).

D. dysonii *Sndrs.* (130 e). Above of a magnificently lustrous blue; in the ♂ the bands of the wings *dysonii*. are only seen shining through the blue, showing through from beneath; in typical *dysonii* less, but more in those occurring in the south of the range, Peru and Bolivia, and (according to STICHEL) again in Panama. — *psecas* *psecas*. *Sndrs.* (*oldros* *Fruhst.*) (130 e). The ♀ is beneath almost exactly like the ♂, but of somewhat duller colours. Above it has also the marking of the ♂, but instead of the deep blackish blue colouring of the patches between the transverse bands we notice a dull dark grey with a very faint bluish leaden-grey lustre, the transverse bands themselves being dirty whitish-grey. The butterflies are common at their habitats and often gather in numbers in the morning at drinking-places. The species is easily distinguishable from *periander* to which it is not dissimilar, by the more distinct bands of the upper surface and by the more complete, continuous, small red anal band of the hindwing.

- periander*. **D. periander** Cr. (= *iphinoë* Godt., *laonome* Sndrs.) (130 d). ♂ magnificently lustrous cyane-blue; forewing with a quite faintly lighter, thin oblique stripe, which is stronger only in ab. **naevianus** Stch. and joined, in Mexican specimens, by another analogous stripe of the hindwing. On the hindwing the anal area is spotted in red, but the small macular band does not extend so far as in *dysonii*. In specimens from Guiana and Peru the spotting is mostly strong, with a somewhat longer small red band, in Brazilian specimens generally weaker, only at the inner margin. Some South Brazilians (not all of them) are said to be more extensively blue and their ♀♀ to have above no proximal band of the forewing (= **eleusinus** Stch.). The material before me, containing about 300 specimens (in the Tring Museum alone there are several hundreds of *periander*, in my collection 30), shows that here a variation does not take place according to countries, but according to finding-places (maybe altitudes?); thus there occur specimens with a white band of the forewing and without it in Peru, such with a light band of the hindwing in Mexico and again in South Peru, while it is absent in specimens from Colombia being situated between (= *laonome*) and so on. The whole range is enormously extensive. The species is distributed from Mexico all over Central and South America as far as South Brazil to the east and Bolivia to the west. The animals are sometimes rarer, sometimes more common, but they are especially keenly collected for their charming colours; they may be baited and are easily taken; they come to the water and strongly scenting stuff and fly near open spaces in the woods, where some rays of the sun may touch the ground during the day.
- arthurianus*. **D. arthurianus** E.-Sh. (130 e). This butterfly is so far known only from Goyaz (from the Araguaya). The ♂ above black, almost without blue reflection, with a strong white oblique band, the hindwing with a red spot at the inner margin and a small red band behind which there are white dots on the under surface. The most remarkable difference is to be seen beneath, where the ♂ (maybe also the ♀) is entirely without the small proximal light band.

36. Genus: **Rodinia** Ww. (= *Euerciina* Sndrs.).

The butterflies at first sight greatly resemble the ♀♀ of the genus *Diorina*, from which, however, they differ rather much from an anatomical point of view*). Whereas in *Diorina* the first subcostal vein of the forewing (about as in *Zeonia*) rises from the anterior cellular angle and all the other subcostal branches rise behind it, in *Rodinia* the three first subcostal branches rise before the cell-end. In *Rodinia* the discocellulars are placed more transversely, in *Diorina* the cells — particularly in the hindwing — end so obliquely that the upper cell-wall is scarcely more than half as long as the lower one. In some *Diorina* (*periander*) not only the upper, but also the lower median vein crosses the tail-appendage, in *Rodinia* the latter ends before the base of the tail at the inner margin. Furthermore, the palpi of *Rodinia* on account of the middle joint being shortened, are so diminished that they are scarcely visible from above, whereas in *Diorina* they project like a nose. The *Rodinia* of which only 2 forms are known must be extremely rare, for among the more than 100 000 American *Erycinidae* which I was able to compare I only saw 3 or 4 specimens. They live on the Amazon River and are said to fly very fast.

calphurnia. **R. calphurnia** Sndrs. (110 Af). Dark brown with a white median band which, however, does not reach the base of the tail on the hindwing. Before its end begins a red diffuse spot extending as far as into the base of the tail. Upper Amazon.

delphinia. **R. delphinia** Stgr. (110 Af). The white median band is diffusely continued through the tail-appendage. Lower Amazon.

37. Genus: **Ancyluris** Hbn.

These conspicuously coloured, neat butterflies belong to the most beautiful of their kind on the face of the globe. We often find above scarlet or orange bands on a deep blackish brown ground and beneath a magnificent blue or green metallic colouring, the total appearance being still more prominent by hemochrome spots of the under surface or white dots. Also the shape of the broadly stretched wings is mostly distinguished by a graduated lobing in the anal part of the hindwing, and sometimes there is in addition a violet-blue or cyaneous reflection of the upper surface. Morphologically, the genus proves to be so nearly allied both to *Diorina* and the following *Necyria* that the separation is sometimes not easy. The most obvious difference from *Necyria* may be the abnormally shaped hindwings, whereas the *Diorina* are easily discernible by the palpi being visible from above. The head of the *Ancyluris* is broad with a flatly convex forehead, the eyes very large, the palpi short and appressed, the siphon long and fine, antennae very straight and slender, at the ends scarcely noticeably thickened. Thorax strong and regular, the middle-legs (especially the tibiae) long; abdomen in the ♂ slender and pointed, forewing with a long and pointed apical part, hindwing with an anal part being prolonged to a lobe. The wings in the living insect are extremely delicate and soft, so that it is most difficult to procure undamaged specimens. At one and the same flying-place one mostly meets with but 1, hardly ever more than 2 forms, and we are induced to assume that many of the numerous and often scarcely distinguishable species which were set up are only subraces of few species representing each other in the different districts; this supposition is also forced upon us by a number of specimens exhibiting to the left broader, narrower or differently coloured bands, than to the right. We, therefore, although there

*) KIRBY places them between *Nymphidium* and *Theope*, STICHEL between *Dysmathia* and *Thisbe*; MENGEL more luckily places them near *Lymnas*; their resemblance to *Diorina* is probably merely external.

are constant differences distinctly noticeable, often combine several forms, in case they prove to be confined to finding-places, but not to districts being definable with respect to the fauna. They are then nothing else but sub-races picked out ad libitum or by chance, just as they were before the author, and their separation would necessitate an almost never ending continuation of further descriptions which would also be in future increased by every fresh exploitation of a new finding-place. Many species are rather common at their habitats. They come to the water early in the morning and, in day-time, they fly round the tops of high bushes.

A. aulestes Cr. Blackish-brown with a straight and entirely uniform band of the upper surface, which may be sometimes narrower, more scarlet, sometimes broad and very bright red. The ♂ is characterized by the small red anal band extending with its middle tip far into the anal lobe of the tail. The ♀ may have white, yellow or also red bands; it even occurs, as the figured ♀ shows, with yellowish-brown bands; but the middle bands are always straight and in the hindwing they bend round towards the middle of the inner margin in an almost right (though not sharp) angle. Beneath, the ♂ is of a deep metallic blue with dark shades being differently distributed at every habitat; of the red bands there has remained here the end of the band of the forewing before the inner angle and the angular part of the band of the hindwing. It is not possible to define geographically the numerous forms of which there are before me about 10 more roughly discernible ones; STICHEL tried to do so in 1909, but he partly gave it up again in 1910. In order to maintain the names applied to them as much as possible, we may distinguish the very narrow-banded ♂♂, to which there are white-banded ♀♀ before me, as **eryxo** Sndrs. (129 g), broader-banded ones as **lamprotaenia** Stich. (129 f), and those with very broad and bright red bands as **olivencia** Stgr. i. l. The numerous transitions of these variations may very well remain nameless. The ♀♀ may have whitish bands (*eryxo*), yellow (**tadema** Stgr.) to brownish bands (*aulestes typica*) or also red ones (**aulica** Stich.). **glaphyra** Sndrs. has, like *tadema* a yellow, though much broader median band. — **jocularis** Stich. (129 f, g) are ♂♂ with red bands on the upper surface as thin as a thread; at some finding-places they occur in uncommonly great numbers, especially in Colombia, and they are usually contained in the so-called „Bogotá-Collections“. — ab. **vastata** Stich. is the denomination of a very common aberration which looks very much altered by the red band above being absent on one or both wings or being incomplete or interrupted. Sometimes in the ♂ the band of the upper surface is white instead of red (= **insolita** Stich.); we figure such a specimen. In spite of some 30 ♀♀ before us we cannot discover 2 quite equal ones, since they all originate from different collections (consequently from different finding-places). The small red anal band is mostly far remote from the median band, but it may also touch it and be broadly confluent with it, what may occur in ♀♀ with yellow, brown and white bands. — **pandama** Sndrs. (129 g, 130 a) which I figure according to specimens taken in November, is a rather large race with very uniform red bands; ♀♀ of it I have not captured; normal specimens are said to be provided with bright red bands; from Santos in South America. Finally there occur also ♂♂ with a light band in the distal part of the forewing and such with a faint hue of a blue reflection between the red median band and the distal margin. Among the more than 1000 specimens of this species before me, of which there are alone several hundreds in the Tring Museum, the above-mentioned characters occur combined in manifold variations; any further denominations of these combinations would only lead to a confusion. — The *aulestes* are good flyers; I only found them at an open space in the woods, but always at the same bush from the top of which they sometimes were playfully whirling up. They were not easy to capture. — Northern parts of South America to Peru and South Brazil.

A. meliboeus F. (129 d, e). Very much like the preceding species, but in the ♂ there is instead of the small undulated red band before the anal lobe of the hindwing a red crescent. Among the very numerous forms of this species there are also such forming the transition to the preceding, so that I doubt whether both groups can be sharply separated. Here are also forms with median bands as thin as a thread, which, of course, can be denominated just as much (or as little) as in *aulestes* and which probably represent the **rubrofilium** Stich. (129 e). STAUDINGERS i.-l.-denomination *boliviana* was for good reasons not used by STICHEL, for *rubrofilum* occurs also outside of Bolivia, and in Bolivia itself there are also found such with broader bands. — **julia** Sndrs. (129 e) is a form with very glaring-red markings on a jet-black ground, with more intensely white-chequered fringes and with a broad anal crescent of the hindwing, the margin of which is deeper undulated. The ♀ (always?) exhibits a white transverse stripe between the red band and the distal margin. **eudaemon** Stich. is without the light dot near the base of the hindwing, which is said to occur always in typical ♂♂ of *meliboeus*; the red band of the forewing also stands steeper and in the hindwing it terminates at the inner margin nearer to the anal angle, whereby the ♀ is said to be recognizable. — In **miniola** Bat. the small whitish basal spot of the male hindwing is present, but the shape of the wings is different; the apical part of the forewing is broader and the anal lobe of the hindwing is more prolonged; the red median band uncommonly broad. — **mendita** Drc. has a flatter position of the band of the forewing and, in contrast with the preceding form, shorter and rounder anal lobes of the hindwings. — In **melior** Stich. the faint blue lustre of the distal area of the preceding form is stronger, particularly in the anal area of the hindwing also above; a faint bluish lustre suffuses the whole upper surface in a very oblique light, producing on the median band a more dull crimson than scarlet colour. The names *pyretus* Cr., *pyritus* Hfsgg., *pyrete* Hbn., *phonis* Stich., *silvicultrix* Stich. I take to be denominations of quite insignificant transitions; **etias** Sndrs. (129 f) is a form *etias*.

- in which the band of the forewing either becomes extinct below the subcostal or is continued (aberratively) in irregular undulations. SAUNDERS figure is inexact, the left differs from the right, the band is straight, the fringes of the hindwings are white. — *paetula* Stich. has the wing-contour and upper surface similar to *etias*, but the red spot at the inner margin of the forewing and near the anal angle of the hindwing smaller, particularly the latter: Peru, unknown to me. — *gracilis* Stich. is said to be more slender than the type, with a broad band, the band of the hindwing „not bent posteriorly, but terminating near the anal transverse stripe“.
- tedea*. — *tedea* Cr. (129 g) to which the description of *miniola* Bat. is also very well applicable, is at once conspicuous by the very pointed shape of the wings of the ♂ greatly resembling that of *colubra*. — The ♀♀ are nearly always red-banded; only *tedea*-♀♀ have dull light-yellow bands, the band of the hindwing being interrupted above the anal fold; the figured ♀ originates from Paramaribo. — From Colombia, Guiana and Paro to Peru and Bolivia.
- colubra*. **A. colubra** Sndrs. (130 a). The forewings are conspicuously pointed, with an entirely straightly delimited distal margin which, at the inner angle of the ♂, even projects into a tip. The median band of the hindwing quite straight; it runs towards the very broad anal crescent before the centre of which it ends pointed, whereas in *aulestes* and *melibceus* it turns round there and runs towards the middle of the inner margin.
- pomposa*. Venezuela, Amazon to Peru. — *pomposa* Stich. from the Upper Amazon, which is not before me, seems to form a transition to the preceding species. The shape is like in *colubra*, i. e. the forewings pointed, the hindwing without a distinctly defined anal lobe, but the red median stripe on the hindwing turns round towards the middle of the inner margin, so that the marking greatly approximates that of *melior*.
- mira*. **A. mira** Hew. (130 a) has above almost exactly the marking of *colubra* (130 a), but the small anal band is broader; the forewings, however, are not so pointed as they are there; the under surface of the ♂ is much duller blue than in all the preceding species. Lying before me only from Peru, but it is said to occur also in Bolivia. The red median band on the forewing is mostly 1 to 2, sometimes 2 to 3 mm broad.
- triglitis*. (= *triglitis* Stich.*). — *thauwasia* Stich. (130 a) from Bolivia (the figured specimen from Oroya, 3000 m) has a very broad, small anal band, but the red median band on the hindwing is absent. — The species is apparently not rare at its habitats.
- huascar*. **A. huascar** Sndrs. (130 a, b). Immediately recognizable by the small red anal band being absent in the ♂; instead of it there often appear, in the anal lobe of the hindwing, light punctiform spots in a blue iridescent area. The red median band varies to such an extent that similar specimens can only be collected at the same flying-place. Just like the band of the forewing varies in width, that of the hindwing varies in length; it may be shortened to the shape of a spot, below pointed, bent down like a hook (= *sepyra* Hew. 130 a), or continued with a darkened end etc. In case the band of the forewing be greatly expanded, we have *latifasciata* Lathy before us; if it is shortened, we have *cacica* Fldr. (= *zinna* Kg.); — it is narrower in *callias* Fldr.; it may also be quite straight or slightly curved. These sub-races are not bound to certain patriae. Specimens taken by FASSL in October near Mineiro (Colombia) differ from those from the Rio Dagua by their small size, a lighter red and a much smaller red spot at the middle of the inner margin of the hindwing beneath. *huascar* is not a common butterfly, but as it is conspicuous for its beauty and easy to capture, it is nearly always contained in the Bogotá-Collections probably mostly originating from Muzo (Colombia). — The ♀ is not before me, but it presumably resembles that of *jurgenseni* (130 b).
- jurgenseni*. **A. jurgenseni** Sndrs. (= *montzeuma* Sndrs., *erigone* Bsd.) (130 b). In the ♂ a series of spots with a magnificent blue gloss lies behind the crimson band in the distal part of the hindwing; ♀ with a white common median band being marked in red at the beginning and end. Anal lobe of the hindwing red, marked in white and blue. From Central America to Mexico. — *atahualpa* Sndrs. (130 b) is quite similar and replaces the species in Colombia; here the bluish-green spots of the upper surface are more intense, the red stripes more bright red than crimson, the red spot in the anal lobe of the hindwing is absent altogether. The ♀ has only the transverse lower end of the white band on the hindwing bright red, not also a part of the rising band as in *jurgenseni*. The species is local, but not rare at its habitats.
- formosissima*. **A. formosissima** Hew. (= *venerabilis* Stich.) (130 c). It somewhat resembles the ♀ of the preceding species, but the white median band is much broader, inflated in the middle, almost its whole part of the hindwing above with a red tinge, beneath very bright red. Ecuador, Peru. In order to demonstrate that the width of the bands is not constant in *formosissima*, I have purposely figured a narrow-banded specimen from beneath and a broad-banded specimen from above. Between the two is HEWITSONS type; I have at any rate not seen two entirely equal specimens. Captured in August and September in la Merced (Peru) at an altitude of 3000 m (SIMONS).
- aristodorus*. **A. aristodorus** Mor. (130 c). Smaller, otherwise similarly coloured as *formosissima*; the white median band narrower, beneath continued in red. Amazon; the figured specimen from Teffé (Ega) was taken in November 1907. The wanton destruction of the woods in the caoutchouc-districts at the banks of the Amazon seems to have swept away particularly also the flying-places of this butterfly, for which reason it is rare in collections. The ♀ is not before me.
- inca*. **A. inca** Sndrs. (= *lais* Bsd.) (130 c). ♂ with a golden-yellow oblique band of the forewing and black hindwings with a blue reflection before the anal lobe. The ♀ may be like the ♂, only with a broader, more oblique band of the forewing; this, however, may vary in width, length and shape to such an extent that there are scarcely two specimens alike and it is impossible to maintain names for these deviations of the bands.

*) The figured specimen ranks between typical *mira* and the (not definable) *triglitis*.

The band is nearly always continued also on the hindwing which then, however, exhibits frequently only a small orange-yellow triangle in the centre of the costa. We also figure a specimen (from beneath) in which the orange band traverses broadly the whole hindwing above and beneath, ending broadly at the inner margin. Mexico and Central America to Colombia. — In *ocollo* *Sndrs.* (= *pausias* *Fldr.*) (130 c, d) the light yellow *ocollo*, narrow band runs through both the wings also in the ♂. Colombia.

A. pulchra *Hew.* (130 d). Forewing of the ♂ with a red, very oblique band-like spot; hindwing with a band-shaped blue reflection being parted by the veins. Peru, Ecuador. — In *miranda* *Hew.* (130 d) from Bolivia the spot of the forewing is vermilion instead of miniate, more upright and with an outwardly convex distal margin. The blue iridescent spot of the hindwing is cuneiform. — *sogamuxi* *Fassl* represents *miranda* in Colombia; the band on the forewing is shaped like in *miranda*, but not of such a glaring colour and not so sharply defined; the blue band of the hindwing is narrower and very brilliant. — In the form *xanthozona* *Stich.* from Peru the spot of the forewing is orange. — In *formosa* *Hew.* from Ecuador the red spot of the forewing is narrower, the blue spot of the hindwing broader than in *miranda*. — Not very rare.

38. Genus: **Cyrenia** *Ww.*

Clumsy, stoutly built animals with broad wings, the forewings have not the long-extended apical part of the preceding group. Metal colours are absent, but there are white central clouds and hemochrome luminous spots. The colouring is otherwise insignificant. The butterflies are rather rare, being distributed from Panama throughout Colombia and the Amazon district to Bolivia.

C. martia *Ww.* (130 d). Very likely all the forms of this genus, except *belphegor* *Ww.* from the Amazon being unknown to me, belong to one species, as they are distinguished by the size and intensity of the white spot of the hindwing. — *pyrippe* *Godm.* and *Salv.* is the smaller form from Panama; it has shorter, rounder hindwings than *marcia*, their marking being hardly visible, the white discal spot obsolete. — *ab. androgyne* *Stich.* is, according to the author's figure, the form without the white spot of the hindwing. It is, however, impossible to found a subspecies upon it, because specimens with entirely grey hindwings rarely occur everywhere among the original species and there are, on the other hand, also specimens from Bolivia possessing the white spot of the hindwing.

39. Genus: **Necyria** *Ww.*

The forms belonging to this genus exactly agree with the preceding genus in the structure of the body; the broad head with the vaulted forehead beyond which the bent-up palpi are hardly projecting, the short, laterally glaringly coloured abdomen, the bright red spots of the wings which are at least beneath always present, the antennae attaining a length of more than half the costa and being scarcely thickened at the tips, as well as the whole habitus join the genus to the preceding *Cyrenia* as well as to the following *Lyropteryx*. From *Cyrenia* and *Ancyluris*, however, they are distinguished by the regular shape of the wings, the hindwings exhibiting neither angulations nor the formation of lobes or tails. It seems that the genus consists of but very few, extremely variable species. At least the three frequently occurring species show that constant forms are living at the single flying-places, but that specimens of the same species from two different flying-places are hardly ever equal. Also in the habits the *Necyria* seem to resemble the preceding genera; they certainly remain very much hidden like these.

N. bellona. This species is above black with a dull steel-gloss which grows more intense only in the marginal part of the hindwings, where it forms radiate pointed wedges. Also beneath it is much duller than in the *Ancyluris* and is sometimes altogether absent in the disc of the hindwing. Beneath there are hemochrome band-like spots. — In *whyteliana* *Drc.* (129 b) flying in Peru and recently brought in great numbers from Pozuzo these spots may also show through above, though the male upper surface is often without true red bands; only below the middle of the inner margin on the hindwing a hemochrome spot faintly shows through from beneath, in some specimens, as in the figured one, it is scarcely noticeable. *STICHEL* denotes such specimens without any red on the upper surface as forma *obliterata*. — In *westwoodi* *Hpffr.* (129 b) this inner marginal spot is already more distinct, and also on the forewing a small costal cell-end-band shows through above. From Marcapata being separated from Bolivia only by a narrow range of hills. — In *enyo* *form. nov.* (129 b, c), from the interior of Bolivia, the red bands do not only show through from beneath, but they are also above glaring hemochrome running as an uninterrupted chain of spots on the hindwing as far as to its centre. — In the typical *bellona* *Ww.* (129 c) from Bolivia, the adjoining Brazil and the southern parts of Peru they are greatly expanded, beneath particularly on the hindwing, above on the forewing. The butterflies are local, but not rare.

N. duellona *W.* (129 c). The blue lustre is confined to a macular band, but of a much more luminous metallic colour than in *bellona*, warming into greenish, and the red inner marginal spot of the under surface of the hindwing is oviform. Ecuador.

N. saundersi *Hew.* (= *hewitsonii* *Sndrs.*) (129 c). Also the ♀ has the blue, brilliant macular chain on the upper surface of the hindwings. The forewing exhibits a light red band being in the ♀ bright light red and traversing the whole forewing as far as towards the anal angle, whereby the species is distinguished from

the preceding ones; from the following it differs by the red band of the forewing in the ♀ not being continued on the hindwing. Colombia; lying before me from the Upper Rio Negro, 800 m, collected by FASSL.

juturna. — **juturna** Hew. is quite a similar form from Ecuador, the ♀ of which has the red band of the forewing only half as broad and no blue spots of the hindwing. The species seems to be rare.

zaneta. **N. zaneta** Hew. (129 c). In the ♂ of this Ecuador-form, being very closely allied to the preceding species, the metallic macular band has been converted into a continuous stripe running in the forewing right across the centre, in the hindwing along the margin. The abdominal sides of the ♂ exhibit an extremely fine yellow streak.

manco. **N. manco** Sndrs. (129 d). The ♂ has a thin red median streak across both wings and behind it a bluish-green metallic macular band. Both the bands vary and may grow so thin and faint that they are extinct in some parts. If they are entirely broken up into small spots, we have the form **fulminatrix** Fldr. Instead of red (as they fly near Pacho, Colombia), there occur also orange-banded ♀♀ as we have figured according to a specimen probably originating from Muzo. The yellow ♀-form is more common going by the name of **lindigii** Fldr., although this name ought to be used only for those specimens the orange median band of which exhibits a pale violet reflexion. — In this species, the median band varying enormously in width and delimitation, it is also hardly possible to find two ♀♀ being alike, because owing to the relative rarity of the ♀♀ it is difficult to obtain two specimens from the same flying-place. The denomination of the side-forms, such as *butleria* Drc., *lindigii*, *aurantiaca* and so on, is therefore of little value. The ♂♂ are not very rare. They also show deviations, for instance the red median band may disappear except a tapering small band *incendiaria*, at the costa of the hindwing (= **incendiaria** Thieme) or it may be entirely absent except few small scales; the ♀♀ belonging to them also exhibit above deviations in the glaringly-coloured median band.

N. vetulonia. This species already forms the transition to the next genus. The blue submarginal spots have already become radiatiformly arranged pointed wedges. In **beltiana** Hew. (129 d) from Central America (Costa Rica, Nicaragua) the blue wedges are traversed by a white median streak (in the ♀ broader than in the ♂). — In **diva** Stgr. (129 c) flying in Colombia the scarlet spots at the middle of the inner margin of both wings being visible in *beltiana* only beneath are present also above in a luminous red. — In **vetulonia** Hew. (129 d) the radiatiform spots are broader and the red spots are increased beneath not far from the base; from Ecuador. — **larunda** G. and S. originates from Guatemala; it exhibits a blue reflection on both surfaces and the white rays are longer, beginning already in the centre of the wing. — Greatly approximating the ♀♀ of *vetulonia* is

ingaretha. **N. ingaretha** Hew. (142 e) which ought already to be reckoned to the following genus, since it has entirely the structure and shape of *Lyropteryx*. The uncommonly broad wings, of which the forewings exhibit a short costal margin and inner margin and a border being curved in uniform bows, are like in *vetulonia* — ♀♀ decorated with a wreath of submarginal white cuneiform rays. Beneath, however, the hindwings show a very large red inner-marginal spot of an almost triangular shape. The species is before me from Orosi (Costa Rica), from the Coll. FASSL; SALVIN and GODMAN mention it from Nicaragua.

40. Genus: **Lyropteryx** Ww.

This genus is immediately recognizable by the very broad wings and the clumsy body. The costal margin of the wings is relatively short, the distal margin, however, particularly at the forewing, very long and bent uniformly. By including *diadocis* Stich. the genus does not remain confined to the species which are closely allied to each other and uniformly shaped, with a round border of the hindwing, but it also contains forms with a long-stretched anal part of the hindwings. Another characteristic may be the great distance between the submedian and the lower median vein.

apollonia. **L. apollonia** Ww. (129 a). This species is unmistakable; the inner two thirds of the wings are above velvety-black, the outer third is traversed by bluish-green, white-dusted rays, the hindwings near the base with a red guttiform spot; beneath scarcely the (basal) half of the wings is velvety-black, as the rays begin already in the centre of the wings; the inner part of the wings is spotted in purple. These spots may be all or partly faded, and there are before me several unsymmetrical specimens, where they are on one side whitish, while the corresponding spots of the other side are red; this is, therefore, only an abnormality. A similar case may be the discoloration of the rays into lighter (*canens* Stich.) or darker blurred spots; nor are the rays always of the same length, which variation is probably due to the different catching-places of this rather local animal. Brazil and Bolivia to the north as far as Ecuador. — From Colombia to Guatemala flies the form **cleadas** Drc. (129 a, b), the ♂ of which has shorter rays that are confined to the outer quarter of the wings and beneath less red spots. — The ♀♀ are beneath coloured like the ♂♂, but above they have sometimes a red margin; the latter is in the normal *apollonia*-♀ confined to the hindwings, but

it may also be continued through the forewing (*lyra* *Sndrs*, 129 a), what creates quite a different appearance, *lyra*, particularly if the red band withdraws from the border towards the costa of the forewing (= *olivia* *Bthr.*), *olivia*.

L. terpsichore *Ww.* (= *zygaena* *Stich.*) (129 b). Beneath very similar to the preceding, but the red *terpsichore*, spots partly show through above, so that the upper surface has also red guttiform spots. Moreover, the rays are more intensely white, in Bolivians from Buenavista quite purely white. According to the abundant material before me, side-forms are not to be maintained. Brazil, Bolivia, Paraguay; everywhere rare.

L. diadocis *Stich.* (142 i) of which only the specimen in STAUDINGERS collection is known to me, being *diadocis*, copied here, has on the forewing an orange oblique band and less intense rays which become distinct almost only on the hindwings. From São Paulo da Olivença on the Amazon River.

41. Genus: **Notheme** *Ww.*

The species forming this genus attains scarcely half the size of *Lyropteryx*, but still it approximates the latter genus and the allied *Necyria*. In the veins the sole deviation consists in the cells of the wings being not so oblique, but more straightly cut off, whereby a transition is formed to *Monethe*. The formation of the antennae, the palpi, the vaulted forehead are like in *Lyropteryx*, but the eyes are larger, the abdomen more slender, at the sides not glaringly coloured and the body somewhat more strongly haired. The *Notheme* are easily recognized by the shape and the sinuous yellowish or whitish median band of the wings. They are met with singly on open spaces in the woods where they bustle about in the sunshine.

N. eumeus *F.* (= *ouranus* *Dbl.*) (132 i). On a blackish ground we see a bone-yellow, irregular median *eumeus*, band, being on the hindwing of a rusty discoloration at the anal end; before the border of the hindwing a very fine silvery-blue line, being sometimes only indicated by few small scales. Specimens from Cuzco in Peru are only half as large as typical specimens from Guiana, and the median band is more regular and of a purer white; for Peruvian specimens STICHEL proposes the name of *diadema*; but as he states its occurrence *diadema*, also in the Amazon district, Colombia and Ecuador, it seems not to be a delimitable form *). — **erota** *Cr.* *erota*, (132 h) has the median band yolk-coloured. — **angellus** *Stich.* (132 i) is the southern form (Paraguay, South *angellus*, Brazil) with an irregular, in some places extinct band (= *hemicosmeta* *Stich.*). The median band is generally narrower in southern specimens than in those from the northern parts of South America. — In **agathon** *Fldr.* *agathon*, (32 i) it is more irregular, on the hindwing spotted in rusty yellow at the costa and the anal angle; likewise from South Brazil. Not rare and distributed over the whole of Tropical South America.

42. Genus: **Monethe** *Ww.*

The species forming this genus are closely allied to each other. They are black and pale yellow coloured butterflies, rather small, in the structure of the body similar to the *Lyropteryx*, but distinguished by the triangular forewings being sharply angled in the anal angle and by the rather pointed, long-stretched anal part of the hindwings, at which the fringes are prolonged to a short beard. The formation of the head, antennae and palpi do not deviate from that of the *Lyropteryx*; in both wings the discocellulars are somewhat longer, so that the upper median vein branches off farther in front of the cell-end of the forewing than in *Lyropteryx* and *Notheme*, where it comes almost out of the lower cell-angle. The forms of the genus seem to replace one another, so that presumably nowhere more than one species occurs.

M. alphonsus *F.* (132 i). The forewing exhibits on the basal part of the median a yellow cuneiform *alphonsus*, streak being slightly thickened in the centre of the wing. Beneath grey with distinct black veins. South Brazil.

M. albertus *Fldr.* (132 i) has above in the disc of the forewing a large oval yellow spot, differs, *albertus*, however, particularly beneath by showing sharply defined yellow discal spots and no black veins. Colombia, Western Amazon to Bolivia. — In **leucobalia** *Stich.* (133 a, as *leucobolia*) the light spots of the upper surface *leucobalia*, are white instead of yellow; it lies before me only from Bolivia. — In ab. **carens** *form. nov.* (133 a) the *carens*, apical part of the forewing above is without the yellow blurred spot and beneath the yellow subapical band is narrower; a yellow nucleiform spot being always in the anal part of the hindwing of *albertus*, is entirely absent; it is found wherever the typical form occurs, but presumably scarcely at the same flying-place. Transitions are of frequent occurrence, since the yellow spotting varies at every habitat. — **rudolphus** *G.* *rudolphus*, a. S. (= *cajetanus* *Stgr.*) (133 a) has much yellow beneath and is above all to be recognized by the under surface of the hindwing exhibiting 5 or 6 small white spots in the brown distal margin. Colombia, especially near Muzo and, therefore, in the so-called „Bogotá-Collections“. — **paraplesius** from French Guiana is a *paraplesius*, STICHEL-form; the yellow spot of the upper surface is said to be larger and the marginal kernels of the under surface of the hindwings to be „yellowish and partly hazy instead of distinctly white“. Both these individualities, however, vary greatly. *rudolphus* is regarded as a species of its own; but as there are transitions of all the *Monethe*-forms to each other, it is very possible that all of them are only local forms of one total species. All the forms are rather common.

*) According to STICHEL, the band of the forewing of *diadema* is somewhat variable, „anteriorly sometimes very little, posteriorly, however, mostly considerably narrowed, at the proximal side almost straight, distally expanded convex or obtuse angled“.

43. Genus: **Paraphthonia** Stich.

This genus is based upon a species described as *Monethe*, but it may, just like the following genus, not be at its proper place here, but rather belong near *Aricoris*. Distinguished from all the similar genera by far-projecting palpi. The ♀♀ (unknown to me) probably have still longer palpi than the ♂♂. I presume also that the species are dimorphous in the sexes. They are rare butterflies of the Peruvian mountains.

molione. **P. molione** Godm. (127 h). ♂ bright yolk-coloured. The distal margin is broad black, as well as the costal margin and the apical part of the forewing; in the latter we notice a lemon-coloured oblique diffuse spot. Pebas.

cteatus. **P. cteatus** sp. nov. (142 e). Disc of the wings of a bright miniate colour, hindwing with black veins; the oblique diffuse spot in the black apical part of the forewing is an obliquely-oval, dull whitish brightening. Under surface similar to the upper one, with duller colours. Carabaya; the type (in the Tring-Museum) was taken near San Domingo at an altitude of 6000 ft.

44. Genus: **Colaciticus** Stich.

In the veins like the preceding genus, but the cell of the forewing is shorter. The palpi are not only far-projecting, but are besides greatly prolonged, almost like in the ♀♀ of *Aricoris*. Before the border a silvery line.

johnstoni. **C. johnstoni** Dannatt. (127 h). Wings lemon-coloured with a broad black border, in which on the hindwing (in some specimens also on the forewing) a fine silvery line runs along the distal margin. In the forewing the apical part and the costal margin are also black, also at the cell-end a small cross-bar appearing sometimes as a knob, but also as a hair-line streak. The species is distributed over the whole of Tropical South America and its appearance presumably conforms with the species of *Cyllopoda* flying at the same place. The butterflies most exactly resemble these yellow and black *Cyllopoda* so that it must be difficult to recognize them when they are flying, which may be the reason of their being rarely found in collections. In one specimen from „Brazil“ in the Tring Museum, the cell-end is crossed by a broad black band running to the anal angle, and since the form shows such an entirely different appearance, I denominate it **jordani** (142 e). The silvery antemarginal line is well developed on the hindwing, on the forewing distinctly developed only in the apex. — Conformably to another *Cyllopoda* is a form from Cuyaba in which the yellow area is also intersected on the hindwing; I call it **banghaasi** (142 e). Type in the Coll. BANG-HAAS. — There certainly occur still more modifications of the marking; the denominated ones may be distinct species.

45. Genus: **Hopfferia** Stgr.

The only species belonging hereto entirely differs in the marking and colouring from the genus *Siseme* to which it was reckoned; it is greyish-blue with a royal yellow costal stripe of the hindwing. The hindwings have an entirely round border without a projecting anal part. The sole species lives in Peru.

luculenta. **H. luculenta** Ersch. (= *militaris* Hpffr.) (133 e). Light slate-blue, upper surface finely veined in black, hindwing with a broad, very bright yellow costal stripe. The latter runs beneath at the inner margin also over to the forewing. Peru, local.

46. Genus: **Zelotaea** Bat.

The only species of this genus imitates pieris from the genus *Leucidia*. It has a conspicuous conglobate head with a thin neck. All the wings are rounded with a very convex distal margin; the costal ends already before the middle of the costa into the costal margin. The subcostal of the forewing sends forth the first and second branch before, the 3rd one far beyond the cell-end, the 4th branches off far before apex. The cell of the hindwing scarcely shorter than that of the forewing. The butterflies are pretty rarely found in collections, the reason of which may be that they are taken for the *Leucidia* which are extremely common at their habitats and, therefore, left unnoticed. Their systematic classification is uncertain. DOUBLEDAY ranges them in *Pandemos*, while STICHEL ranks them beside it. According to the peculiar formation of the body they have nothing whatever to do with this genus, but much rather belong closer to the genera *Lymnas*, *Themone* etc. with a similar formation of the neck. *Pandemos* has long palpi projecting far in the ♀, differently formed legs, a short neck with the head placed flatly on it, and entirely different veins.

phasma. **S. phasma** Bat. More or less dull white; a stripe at the costa of the forewing, the border and a dull transverse stripe behind the cell pale brownish. Teffé. — In **achroa** Bat. (128 i) likewise from the *peller*. Amazon (described from the Tapajoz) the brownish-grey shading is more intense on both sides; — **pellex**

Stgr. (128 i) is almost entirely white, only before the border slightly yellowishly darkened and with a yellowish-brown under surface. — **dubia** *Bat.* and the hardly differing **eidothea** *Btlr.* form the intermediary ^{*dubia.*} ^{*eidothea.*} between *pellex* and *phasma*, being darker than *pellex*, lighter than *phasma*. They are forms of the eastern coast of Brazil, *dubia* occurring in the north (near Pará), *eidothea* in South Brazil. The latter is white with greyish-brown veins and a broad marginal band of the forewing, being the broadest at the costa and narrowed in the second median interspace. Hindwing beneath of a dull white or pale ochreous tinge.

47. Genus: **Uraneis** *Bat.*

A number of forms of this genus may be divided among quite few species which have fortunately received but few denominations. They copy black, hyaline-spotted *Cylopodinae* or *Pericopinae*, the latter of which are protected by the secretion of oil out of the thorax. The consequence of this imitation is an extensive polymorphism, since the imitators have to copy now this model, then the other; but they all are black with whitish or hyaline spots and a blue reflection. The palpi are well visible from above, projecting, of medium length; the cell of the forewing of almost half the length of the wing, the cell of the hindwing only quite short. There is a remarkable difference in the shape of the hindwings. The *Uraneis* are not rare, but difficult to discover from among the great number of hyaline *Ithomiinae* and *Heterocera*; they come to the bait early in the morning and are beaten out of the bushes in day-time.

U. hyalina *Btlr.* (138 e, misprinted into *ucalina*). Recognizable by the long-stretched anal part of ^{*hyalina.*} the hindwing of the ♂♂. Black with hyaline bluish discal brightenings and alike oblique band before the apex of the forewing. Amazon to Bolivia. Bolivians from Buenavista have a broader black margin of the wings; the preapical oblique band may be broad or narrow, short or long, straight or bent. It resembles certain *Tmetoglene* (e. g. *esthema*) which, however, have orange-yellow palpi that are never found in *Uraneis*.

U. zamuro *Thm.* (138 e). Here the disc of the wings is black, the oblique band of the forewing very ^{*zamaro.*} broad oval, bluish-white; hindwings with white antemarginal cuneiform spots. Differing at every habitat. Near Cundinamarca (Colombia) the band of the forewing is rather narrow, the wedges of the hindwings do not reach the centre of the wing. On the Rio Negro (Colombia) the wedges of the hindwings feebly run as far as towards the base, in the figured specimen (from Ecuador) they are very much broader. Not rare.

U. ucubis *Hew.* (= *radiata* *Stgr.*) (138 e). Blackish-blue, before the border of all the wings white ^{*ucubis.*} cuneiform rays which grow especially thick and broad in the form **lamprotenis** *Röb.* (138 e). Colombia, Ecuador. ^{*lamprotenis.*} Rare.

48. Genus: **Esthemopsis** *Fldr.*

Very closely allied to the preceding genus, scarcely differing in the veins, nor considerably deviating from the preceding in the habitus and partly confined to the same models with respect to the mimicry. The red *inaria* being described as *hymnas*, but according to *Stichel* to be inserted here, is entirely unlike this group, but perhaps only because it copies a model from another group than the rest of the *Esthemopsis* which are confined to black, hyaline-spotted or fenestrated originals. We must yet be better informed about this genus, as it has been hitherto looked at in a different light by every author. According to MENGEL it contains 14, to STICHEL 13 (many other) species. The butterflies, the habits of which I was not able to observe myself, presumably imitate the habits of their models.

E. clonia *Fldr.* (128 c, as *clonius*) entirely resembles *Uraneis zamuro* *Thm.* and varies like it particularly ^{*clonia.*} in the shape of the band of the forewing and of the wedges of the hindwing. Blackish-blue with a broad white, subapical band of a bluish reflection, showing half through. Immediately distinguishable from *Uraneis zamuro* by the palpi being in the latter long-projecting, black, with white stripes, in *E. clonia*, however, short, bright red-yellow. From Central America to the Amazon, not very rare. — **alicia** *Bat.* described from ^{*alicia.*} Guatemala, is almost just the same, but without the white cuneiform spots in the hindwing. — **saracena** ^{*saracena.*} *Sm.* does not show the band of the forewing broken up towards below into spots, but coherent, ending before the anal angle; without distinct cuneiform spots in the hindwing. Brazil.

E. macara *Sm.* (= *acara* *Mengel*) from Colombia is smaller than the preceding, otherwise similar: ^{*macara.*} the band of the forewing above narrow, band-shaped, the lower end slightly curved inwards; above without cuneiform spots on the hindwing, but beneath are magnificently blue rays on it.

E. poliotactis *Stich.* (142 k) is based upon 1 ♂ from Peru. Black, on the forewings with grey, on ^{*poliotactis.*} the hindwing with obsolete cuneiform spots before the border. Beneath the wedges are more distinct, in the hindwing almost white. Head and body black, ruff yellow. Length of forewings 19 mm.

E. caeruleata *G.* and *S.* Above black with a small narrow white oblique band, so that above the ^{*caeruleata.*} appearance of *Chamaelinnas pansa* (127 g) is produced; but at once recognizable by the under surface exhibiting the magnificently blue rays of the preceding species on the hindwing. Panama. Only ♀♀ known which may belong to a differently denominated ♂.

- jesse*. **E. jesse** *Btlr.* (142 g). Here the subapical band of the forewing is broken up into 5 diffuse spots and the disc of the wings of a shining violet-blue tinge, traversed by the thick black veins. Beneath the colouring of the wings between the veins is lighter than above, whitish-blue; northern parts of South America; Brazil. — **aeniacus** *Hew.* (128 c) shows the upper surface of the wings particularly below the costa and from the direction of the border dusted with a sooty grey; from Bolivia, but there are almost typical *jesse* before me also from Bolivia.
- linearis*. **E. linearis** *G. and S.* has almost exactly the size and forewings of the following *sericina* (128 b), but the hindwing is without the black margin; from Colombia.
- sericina*. **E. sericina** *Bat.* (128 b) differs entirely from the preceding species by the hyaline places being combined here to 2 fenestrae; an oblique band before the apex, a longitudinal stripe from the base of the forewing, and a discal wedge in the hindwing. Thereby a general appearance is produced which is shown by many *Heterocera* flying in the same district: I mention *Mimagyrtia pampa* (Vol. VI., t. 12 k), *Cacostatia sapphira*, *flaviventris* (Vol. VI., t. 22 c), *Euagra splendida* (Vol. VI., t. 23 h), *Agyrtia chena* (Vol. VI., t. 23 k), *Ag. dux*, *micilia*, *auxo* (Vol. VI., t. 24 a), to a certain degree even the large *Agyrtidia uranophila* (Vol. VI., t. 17 a). In this species (like in the model *Euagra (splendida)*) not only the palpi, but also the vertex and hindhead are red-yellow.
- lithosina*. **E. lithosina** *Bat.* (128 b). Forewing more stretched, hindwing smaller and in the anal part pointed; colouring similar to that of the preceding species, but the hyaline brightening occupies almost the whole disc of the wing. Hindhead reddish-yellow. Sometimes there is some red-yellow beneath in the anal angle of the forewing; Amazon, Pebas. It imitates small *Arctiids*, *Lauron*, *Tithraustes*. — **fenella** *Sm.* has clearer vitreous spots and, above all, a broader subapical band of the forewing, otherwise similar; from Ecuador.
- celina*. **E. celina** *Bat.* (142 h). Smaller than the preceding, the hyaline fenestrae not tinged in blue, but only faintly darkened by smoky-grey at the margins, the small subapical band white, shaped like in *lithosina*. From the Upper Amazon. This species has no orange-yellow in the forewing and a dark hindhead. — **E. aeolia** *Bat.* from Guiana and North Brazil has the small band cut trough before the apex by black veins, and the black veins in the hyaline disc of the wing are considerably thicker.
- inaria*. In addition we mention here (according to STICHEL) the entirely red, black-margined **E. inaria** *Ww.*, described as *Lymnas*, and which STICHEL had formerly himself placed to *Xenandra*. From the Amazon. — *isabellae*. **isabellae** *E. Sh.* (128 d) is a form from the Araguaya River with almost quite uniform black margins of the wings. It differs from *inaria* by the latter having another black ray on the submedian of the forewing. Apparently very rare.
- inariella*. **E. inariella** *Strd.* from Costa Rica resembles *Euselasia chrysippe* (121 f), but above it has 3 small light spots before the apex and beneath a black border of the hindwing.

49. Genus: **Xinias** *Hew.*

This genus is closely allied to the hyaline *Esthemopsis*, but the two last subcostal veins bifurcate sooner before the apex of the hindwing. For the rest the species entirely resemble *Esth. lithosina*.

- cynosema*. **X. cynosema** *Hew.* (142 h). Wings of a faint violet lustre, hyaline; in the black apical part of the forewing a white, oval oblique band, in the blackish inner margin an orange stripe. Bolivia. — In *hyalodis* *Stich.* (142 f) from Ecuador the small preapical band of the forewing is widened to a large white oval. It imitates small *Ithomiinae*.
- cristella*. **X. cristella** *Sm.* from Ecuador is like *cynosema*, but the orange embedding in the black inner-marginal stripe is reduced, similarly as in *hyalodis*; but the oblique band of the forewing is not widened. The head is yellow (by which it differs from *Esthemopsis lithosina*).

50. Genus: **Mesenopsis** *G. and S.*

This genus belongs yet entirely to the mimetic genera of the *Lymnas*-group. In the shape it approximates the *Xinias* and *Esthemopsis* to which it is undeniably closely allied, but owing to the selection of other models its outer appearance greatly deviates from the former. On the upper surface the black and yellow colouring of the *Josia*-species from the large group of the *Arctiidae* is predominant. The forewings are long, the hindwings small with a pointed anal part. The cell of the forewing is nearly twice as long as that of the hindwing. The butterflies are mostly rare, i. e. difficult to discover from the great number of the *Josia* flying with them; according to FASSL, there is a remarkable difference between the model and copy in the imitating *Erycinidae* being more timid and flying off sooner than the *Josia* serving as their model.

- bryaxis*. **M. bryaxis** *Hew.* (128 a). Wings with an orange-yellow disc and broad black margins. Central America. In the ♂ the orange colour is deeper, in the ♀ lighter. Rare. — **melanochlora** *G. and S.* (128 a). Here the orange is more in the shape of stripes, running from the base of the wings to the middle of the border. Central America to Bolivia. Rare; the model in Colombia is *Josia fulva* (FASSL), in Costa Rica *Josia ligata*.

M. briseis *G.* and *S.* resembles the preceding, but the orange-yellow median stripe of the wings *briseis*, is broader in the middle and not running quite through to the distal margin; from Colombia. — **pulchella** *Godm.* (128 a) differs by the median stripe of the forewing ending in a whitish tinged knob. Amazon. *pulchella*.

M. albivitta *Lathy* (128 b). Only the forewings exhibit a bright orange disc; the hindwings are only *albivitta*, in the centre slightly lighter. The under surface of the hindwing shows a white, blazing basal ray. Model: *Josia auriflamma*. South Brazil, rare.

51. Genus: **Mesene** *Dbl.*

Except the totally unicolorously scarlet species of this genus there is probably no species among them that does not exhibit certain peculiarities of the marking at every flying-place. We distinguish but quite few species and we restrict ourselves to registering the already denominated forms by stating the patria ascertained by the author for the form referred to; but in doing so we must point out that these statements of the locality often only refer to casual captures and there may very well other forms be found in the same patria. The ♂♂ have triangular, pointed, brightly coloured forewings and small ellipsoidal hindwings. In the veins the species exhibit great conformity, in case we except the genus *Phaenochiton* having been separated by STICHEL. For then the second subcostal vein, the upper median vein in the forewing as well as in the hindwing rise before the cell-end, while in *Phaenochiton* *sagaris* they proceed from the cell-angles. This genus having been detached, there remain in *Mesene* only 13 species that are rather much alike one another. They rest so well hidden on the under surface of leaves that one gets sight of them only when one chases them out of the bushes, whereupon they fly somewhat like Geometrids for about 10 to 20 m always keeping in the middle of the forest-roads, in order to drop again into another bush. The larvae are lycaenid-like, somewhat like wood-lice, fluffily haired; that of *M. phareus* lives on the extremely poisonous *Paullinia pinnata* to the leaf of which also the small greenish-yellow pupa is spun. *Mesene* is connected with the Heterocera-genus *Eudule* by a mimetic resemblance, but it has not been ascertained which is the original and which the copy, or whether the resemblance of the two genera is due to connexions with a third butterfly.

M. phareus *Cr.* (? = *nigrocinctus* *Sepp*) (134 k). Red with a narrow black margin and cell-endspot of *phareus*, the forewings. In Surinam-specimens the forewing is beneath almost entirely dusted in black except the inner margin; Cayenne-specimens have the under surface of the forewing above the anal angle broad red, but the base of the hindwing is below tinged in blackish. In those from Suapure in Venezuela the distal half of the under surface of the forewing is spotted light red; such from Cuyaba have an uncommonly narrow black border (transition to the following, = *ineptus* *Stich.*) and so on. The species varies in every possible way in the enormous range extending from the northern coast of South America to Bolivia and being presumably larger than the whole of Europe. — In Colombia the species makes its appearance as **colombica** *form.* *colombica*, *nov.* (134 k) in which the whole inner-marginal half of the under surface of the forewing is of a bright red; the form is besides considerably larger there. — On the contrary, the Central American form, **rubella** *Bat.* (134 k), is smaller; it likewise has the forewing beneath light red, but also a black basal part of the under surface of the hindwing. — The larva is greenish, like a wood-louse, across the back darker; on *Paullinia*. The butterflies are not rare; the ♀♀ have somewhat broader wings and an under surface similar to the upper. *rubella*.

M. celetes *Bat.* entirely resembles *phareus*, but the ♀ has longer wings; the forewing with a more *celetes*, bulged out border, of a saffron colour, the black costal stripe somewhat indented, beneath in the border some small, fine white spots. Para.

M. pyrippe *Hew.* (134 l) is the South Brazilian representative of the preceding, above with a broader *pyrippe*, black margin, beneath the forewing is red except the border and a black costal stripe. — **sanguilenta** *Stich.* *sanguilenta*, (134 k, l) has the costal black in the basal part broader and is said to have also yet a black cell-end stripe in the hindwing, which, however, is often rudimentary and, in the figured specimen, not even indicated; Rio Grande do Sul. (On the table the name is misprinted into *sanguinolenta*.) — Near Santos rather common, coming even quite near the town; near Rio it is rarer.

M. bomilcar *Stoll* (134 l). Like the preceding, red, black-margined, the costal stripe much broader, *bomilcar*, particularly towards the apex. Guiana. — **pullula** *Stich.* (134 l) is a smaller form, in which the red of the *pullula*, forewing is still more displaced by the black.

M. croceella *Bat.* (134 k) originates from Central America; ♂ more miniate than bright red, ♀ some- *croceella*, times quite pale.

M. hyale *Fldr.* (134 m). Smaller, hardly as large as *pullula*, the distal margin of all the wings very *hyale*, broad black. Colombia.

M. hya *Ww.* (134 m) has a red or yellow disc of the wings and a broad black margin of the wings, *hya*, in which there stands a white spot of varying size. Amazon. — **fenestrella** *Bat.*, not exactly recognizable *fenestrella*, according to the description, seems to refer to the forms with a small white punctiform spot (as, however, they occur in most of the red *Mesene*-species) and differs from typical *hya* besides by a narrower black

paraene. margin. — **paraene** *Bat.* from Para has a still narrower black margin: a white dot is no more to be seen.
guttula. — **guttula** *Stich.* seems to denote a transition from *hya* to *monostigma*, being similar to the former, though
monostigma. with the red being reduced on the forewing. Paraguay. — **monostigma** *Er.* (135 b) has the forewing blackish-
ma. brown except a narrow inner-marginal spot, the hindwings being more yellowish-red than vermillion, but
leucophrys. the colouring is not constant. — By the denomination of **leucophrys** BATES understands both narrow-and
broad-margined red forms, with a red or black body, exhibiting a white nucleus only in the dark border
of the forewing; the diagnose is not applicable to a geographically definable form. — The white spot and
the black margin vary to such an extent at every habitat, that entirely equal specimens are not at all before
me; even specimens denoting the „Rio Songo“ as the finding-place, that are before me, exhibit a quite
narrow and a broader margin of the hindwing. Near Humayta on the Amazon this margin grows to be
3 mm broad. Apparently rather common.

epalia. **M. epalia** *Gott.* (135 a). Recognizable by the more stretched, one-coloured wings being quite narrowly
simplex. bordered in black. In typical *epalia* the ♂ is vermillion, the ♀ somewhat paler. — **simplex** *Bat.* has saffron-
philonis. coloured ♀♀ and in **philonis** *Hew.* the ♀ is orange-yellow. STICHEL regarded these forms as synonymous,
as he states later on, because he took the lighter specimens to be faded; but there occur such in all shades,
even in a pale ochre-yellow hue; the colouring probably depends on the red or yellow models (*Eudule* etc.)
flying at the same places. South America; more to the east.

epaphus. **M. epaphus** *Stoll* (134 m). Above like *epalia*, but beneath the black apex of the forewing exhibits
speculum. a white and a red spot. Guiana. — In **speculum** *form. nov.* appears an irregular marginal band of the hind-
wing, sometimes linguiformly radiating towards the centre of the wing, and the white preapical spot of
albiplaga. the forewing appears above in reddish-yellow; Cayenne. — **albiplaga** *form. nov.* shows this spot also above
glaringly white, whereby such a great resemblance is created with certain *Heterocera*, that the model and
the copy cannot be distinguished at all in the open air, while in the net they are difficult to discern, as
nola. they keep their wings quite uniformly *. — **nola** *H.-Schäff.* (134 m) is like *albiplaga*, but the black of the
apex of the forewing is cut off straight and the border of the hindwing more irregular. Amazon, Guiana.
mulleola. — **mulleola** *Stich.* seems to approximate *albiplaga*, but the black costal stripe is narrowed, beginning from
pyrrha. the cell-end; the black border of the hindwing is the broadest at the anal angle. Upper Amazon. — **pyrrha**
Bat. likewise approximates *nola*, being above abundantly orange-red, on the hindwing the middle of the distal
margin exhibits a leather-coloured spot; the apical third of the forewing is black, but its margin irregular
eupteryx. and in its lower part deeply indented; Teffé. — **eupteryx** *Bat.* likewise resembles *nola*, but it is more miniate
than orange-red; the black border of the hindwing is broken up into spots in the middle of the border,
but it extends at the anal angle yet for some distance up to the inner margin. The latter is also the case in
sertata. the ♀ (= *mydia* *Bot.*) which, however, has an ochreous-yellow ground-colour. — In **sertata** *Stich.* (135 a)
both the white and the red spots of the apex of the forewing appear also above and the hindwing exhibits
black marginal wedges also above like in *speculum*, but without counting these a very narrow border
of the hindwing. Western Amazon. — Of this species new modifications of the markings are probably found
at every new habitat; it seems to be distributed over the whole northern part of South America, but not
common.

nepticula. **M. nepticula** *Mschlr.* (135 b). Crocus-yellow, in the black apex of the forewing above 3, beneath 2
stigmosa. small spots of the ground-colour. Surinam. — **stigmosa** *Stich.* from the Amazon and Ecuador has in the
apical part also above only 3 small spots being white.

margaretta. **M. margaretta** *White* (135 a). Similar to an *epalia*-♀, but from the narrow black margin of the wings
numerous black rays run into the wing. Beneath, the spaces between these rays are in specimens lying
before me from Colombia of the ground-colour, in those from Venezuela (? = *oriens* *Btlr.*) white. In Central
semiradiata. Americans the rays are above very short. — **semiradiata** *Fldr.* (135 a) has a black apical part of the fore-
wing, with white rays through it; Colombia and Venezuela, but presumably at other flying-places than the
eromena. preceding. — In **eromena** *Stich.* (135 a) the forewings exhibit fewer white marginal rays, the hindwings of
the ♂ none at all. We figure ♂ from Colombia, ♀ from Bolivia, and it is doubtful whether both belong
together. I am inclined to believe that the figured ♀ is quite a different species of butterflies, the ♂ of which
sardonys. resembles the ♀, but it is not before me. — **sardonys** *Stich.* resembles *margaretta*, but the black marginal
rays are thicker, their intermediate rays whitish, and in the disc of the wings there are some small black
dots; Bolivia. Lying before me from Coroico (taken at an altitude of 1200 m), but in specimens ex-
hibiting black dots only in the cell of the forewing, not also in that of the hindwing (like STICHEL'S figure,
Gen. Insect., Riodinidae t. 261, fig. 55). — Homochromous to these forms are tiny red night-butterflies,
such as *Pseudom. coccinea*.

silaris. **M. silaris** *G. and S.* (135 b). Disc of the wings chrome-yellow, margin and apical part broadly black
leucopus. (in the ♀ somewhat narrower). The legs are yellow. Nicaragua. — **leucopus** *G. and S.* from Guatemala is
icterias. quite similar, but smaller, and the forelegs are white. — **icterias** *Stich.*, unknown to me, is said to be with
respect to the black margining like *hyale* (134 m), but smaller and the ground-colour yellow instead of red;
Venezuela, Peru.

* A secondary resemblance thereby arises also with certain *Aricoris*, such as *A. heliodora* *Stgr.*

M. capissene Hew. (135 b). Easily recognizable by the rows of discal dots traversing the narrowly *capissene*, blackish-margined red forewing before and behind the middle. South Brazil, rare. According to STICHEL, *M. strigulata* Schs. (being unknown to me) is said to be identical with it.

M. martha Schs. from Peru and Ecuador is about as large as *silaris*, but in typical specimens with *martha*, a narrower margin and fine black cell-end streaks and tiny spots on the under surface. — In **verecunda** *Stich.* (142 b) from North-East Peru the black costal stripe in the basal part of the forewing is thickened, *verecunda*, so that the red discal area appears narrowed and turned round into a tooth projecting costalwards behind the cell.

52. Genus: **Phaenochiton** Stich.

This genus is composed of 4 groups of butterflies (*cingulus*-, *sagaris*-, *bocchoris*-, and *phoenicura*-group) which STICHEL detaches from the red *Mesene*. These groups, however, greatly differ again among each other, and the great sexual difference of *Phaenochiton* mentioned by STICHEL in separating them does not prove correct in all their species. The differences in the veins (mentioned in *Mesene*), however, may very well justify the detachment, if they are to be applied to all the species. — I was able to ascertain a difference in the habits, since some *Phaenochiton* are animatedly swarming about in the sunshine in day-time (*sagaris*, *bocchoris*, *dukinfildia*), whereas I frequently chased up the *Mesene* s. s., though I never saw them swarming spontaneously, even at the places where they were common. This may be also the reason why the *Mesene* are mostly quite red, the *Phaenochiton*, however, of an inconspicuous black ground-colour.

Ph. cingulus Stoll (= *aerope* Ww.) (134 h). ♂ black with a vermilion basal half of the hindwing, *cingulus*, ♀ with a red median band, resembling *Crocozona* (134 e). From Surinam to Bolivia. — **trucidata** Btlr. is *trucidata*, presumably only a slight deviation of the ♀ with a broader margin of the forewing. Amazon. — Not common.

Ph. pyrsodes Bat. In the shape and size it approximates the preceding species, but the red of the *pyrsodes*, hindwing in the ♂ is also continued on the forewing, the disc of which is occupied by it almost as far as the subcostal. Teffé. The ♀ is unknown to me. — **eanes** Godm. (134 h) is probably only a somewhat smaller *eanes*, form with a lighter, more brightly marked under surface; Amazon.

Ph. debilis Bat. already reminds us somewhat of *sagaris* (134 h, i), but it is considerably smaller *debilis*, and more delicate. Both the sexes are above deep dark-brown. With an orange band running from the centre of the forewing or already from below the costa to the inner margin, where it continues on the hindwing at the base of which it is curved. The under surface is brown, finely speckled in grey; near the inner margin of the forewings a yellow spot. From the Tapajoz.

Ph. ignicauda G. and S. differs but little from *cingulus*-♂; recognizable by the scarlet abdomen and *ignicauda*, by the red of the base of the hindwing extending far beyond the cell. — In

Ph. ignipicta Schs. (134 h) the basal red of the hindwing extends only to the basal part of the cell, *ignipicta*, but it accompanies the inner margin almost to the anal angle; Costa Rica; the figured specimen was taken near Guapiles.

Ph. fuliginea Bat. Above entirely like the ♂ of *cingulus*, also the fringes white-speckled, but the *fuliginea*, red in the hindwing is absent; the latter is also quite velvety black. From Villa Nova (Amazon).

Ph. sophistes Bat. (= *pactolus* Mschlr.) (134 h). Resembles *cingulus*-♀, but the red median band *sophistes*, is narrower, especially on the hindwing, and the ground-colour lighter brown, traversed by parallel darker spots and stripes. Under surface lighter and more variegated, almost like in *eanes*, but the median band of the forewing broad. Amazon.

Ph. phoenicura G. and S. (= *noctis* Stgr.) (134 i). Ground-colour as in *sophistes*, lighter brown, *phoenicura*, traversed by numerous, darker, small transverse stripes; the red median band of *sophistes* is absent, but the end of the abdomen is broad red. Central America to Colombia.

Ph. mandosa Drc. Marking and colouring almost exactly as in the preceding, but larger, the ab- *mandosa*, dominal end not red and the under surface with a green lustre. Rio de Janeiro. Apparently rare.

Ph. arbuscula Mschlr. Similar to the preceding, above resembling a *Caria*, the marking above more *arbuscula*, faded, consisting of 6 transverse bands separated by spots, the 4th and 5th of which flow together in cellule 2. Beneath the greenish lustre is replaced by a dull, somewhat brilliant bluish black, the wings somewhat narrower. Described according to a ♂ from Paramaribo.

Ph. dukinfildia Schs. (134 i). This elegant animal from South Brazil looks differently at every habitat, *dukinfildia*. Nearly always recognizable by an orange belt cutting off the apical part and by a cell-end spot of the fore-

wing and a similar transverse stripe in the hindwing. In specimens from Castro in Paraná, a small fine transverse stripe is at the cell-end of the forewing; in specimens from Villaprudente in the State of São Paulo, a thick orange wedge stands here; in specimens from Ypiranga, the small band of the hindwing is as thin as a hair, almost obliterated etc. It is of no use to denominate all these forms. — Not rare.

bocchoris. **Ph. bocchoris** Hew. (134 i). Only an orange oblique band on the forewing, which is narrow and obsolete at both its ends, but better developed in *suavis* Stich. (134 i). South Brazil, rarer than the preceding species, but less local.

vittata. **Ph. vittata** Stich. Both the wings with a broad orange band running beyond the middle from the costa as far as in front of the anal angle. Amazon. I cannot decide whether this species not lying before me, as well as *suapure* Weeks (from Venezuela) being likewise unknown to me in nature, belong into this genus indeed.

crocostigma. **Ph. crocostigma** Bat. Shape as in *sagaris* (134 h, i), forewing speckled dark with black transverse streaks. On the hindwing a richly orange-coloured, oblong transverse spot runs through the disc. Guiana and Amazon.

apoplecta. **Ph. apoplecta** Bat. seems to be very similar to *crocostigma*; upper surface dark brown, speckled in blackish; near the border the dark spots form a submarginal row. Fringes at the apex white, otherwise black. From the disc of the hindwing to the inner margin runs a saffron-coloured spot; Rio Tapajoz.

basilissa. **Ph. basilissa** Bat. Black, in the cell of the forewing begins an orange band running to the anal angle of the hindwing; this band is indented at the cell of the forewing and at the inner side on the hindwing, which is not the case in *sagaris*. The animal hardly belongs into the same genus with *cingulus* etc., the body is strong and the shape of the wings already approximates that of *Symmachia* and *Caria* by the bulging costa of the forewing and the long straight inner margin of the hindwing. Was described as *Mesene*. Para.

sagaris. **Ph. sagaris** Cr. (♀ = *satnius*) (134 h, i). The typical form is rather small. In the ♂ an orange stripe begins directly above the middle of the inner margin of the forewing, running obliquely across the hindwing and also the abdomen, so that its middle is orange, the base and end, however, being black. The ♀ is entirely different, it has broad wings and only on the forewing an orange-yellow oblique spot. It is undoubtedly altered by mimicry, in the same way as also the ♀ of *Panara phereclus* looking quite different in the same sex; the model to both of them are presumably certain oil-secreting *Arctiidae*. Typical *sagaris* particularly come from Guiana and the Amazon. There occur, however, also larger specimens, as I took them

tyriotes. almost exclusively in South Brazil: this is the form *tyriotes* G. and S. (134 i). These generally have a narrower band extending on the forewing upwards in a twisted point beyond the middle of the forewing; but there are in South Brazil (probably also elsewhere) also specimens with a broader point ending more obtusely

majorina. in the forewing; these were again detached as *majorina* Stich. (134 h *), I remark yet that another sexual dimorphism consists in the oblique band of the forewing appearing in the ♀ also beneath, though that of the ♂ does not show through, the ♂ being beneath entirely black, only with a light (unscaled) inner margin of the forewing. — The name of *matronalis* Stich. seems to refer to an aberration of the ♀, in which here

phrygania. or there a small ochreous spot appears on the hindwing. — ab. *phrygania* Stich. from São Paulo in Brazil has narrower bands, otherwise like *satnius* (*majorina* Stich.), but the bands of the ♂ are still broader than in specimens from Curitiba. — The *sagaris*-♂♂ fly in the shade of the woods, on narrow roads, where the rays of the sun pierce the leafy roof. I took them near Santos at two places where, whenever I passed there, I always saw one male dancing about, which whenever I had captured it, was always replaced again on the next day by another flying at exactly the same place; I obtained the ♀♀ only on ransacking the bushes along the same road.

iasis. **Ph. iasis** Godm. (134 i). Larger than *sagaris* and easily discernible by the orange stripe on the hindwing not extending as far as to the posterior margin nor across the abdomen, but terminating obtusely soon below the middle of the hindwing. Besides the wings exhibit a beautiful dark-blue reflection on both surfaces. Of course, the same variations occur here as in *sagaris*; thus, for instance, the spot of the forewing in the specimen I figured is much rounder than in the one from GODMANS collection, figured in the Trans. Ent. Soc. Lond. 1903 t. 22 fig. 7. Whoever wants to disseminate diverse names as this has been done in *sagaris*, may introduce further denominations here.

pluto. **Ph. pluto** Stich. (142 b). Shape and size like in the preceding; but above in the middle of the hindwing there is a large hemochrome spot and the back of the abdomen is of a bright hemochrome behind the middle. Colombia.

* According to an investigation having been published in the meantime, STICHEL corrects his former explanation of this species by stating that *satnius* Dalm. does not represent the ♀ of typical *sagaris*, but that of his *majorina*; so that the name of *majorina* Stich. would have to be replaced by *satnius* Dalm. *tyriotes* G. & S. is said to be a form of *crocostigma*, without the orange band of the hindwing. — STICHEL supposes our figure of *tyriotes* (134 i) to be approximating *satnius* Dalm. (his *majorina*). In fact, the original was collected only 3 hours by train from the finding-place of typical ♂♂ of *satnius*, near São Paulo. From Curitiba there is a specimen before me (Paris Museum), in which the orange band is still narrower and, at the anal part of the hindwing, entirely obliterated; the more attempts are made to denominate all these deviations of the habitats, the greater grows the confusion.

53. Genus: **Cricosoma** Fldr.

The species of this genus are closely allied to those of the following, but they differ from the *Symmachia* by the costa of the forewing (particularly of the ♂♂) not being bulged out. The name of *Cricosoma* may by no means disappear, as long as only one species described as *Cricosoma* is regarded as belonging to no otherwise denominated genus. But besides, the forms described as *Cricosoma*, maybe with some exceptions, form a very well distinguished group which would at least have to be maintained as a subgenus.

C. irrorata Godm. (142 g). This species, unknown to me in its free state, and described from the *irrorata*. Carimang River in Guiana, is the smallest of the genus; the ♂ is dirty yellowish grey, at the margin lighter, both the wings dotted in blackish. According to STICHEL, the 1. subcostal vein of the forewing touches the costal for a short distance; this, however, is only an effect of the costa forming a crookback, the expanding precostal area pressing the costal near to the subcostal veins; this is a slighter degree of the development as we find it in the following genera in a still greater measure. The species seems to be rare, maybe because the resemblance to the *Charis*-species (*chaonitis*, *argyrodoines* etc.) occurring in crowds in the same country makes it difficult to discover them.

C. eraste Bat. (142 g). Smaller than the *irrorata*, the apex of the forewing more pointed, the colour *eraste*. dull red-brown, the black dots arranged more in transverse rows. According to STICHEL, the identification of the figure in the British Museum copied by us has taken place with BATES' original. Teffé on the Amazon.

C. batesi Stgr. (128 h). Somewhat larger than the preceding, the forewings not pointed at the apex; *batesi*. the dark spots in some places converge forming blackish clouds. Discovered by Dr. HAHNEL near Coary on the Upper Amazon. — **punctata** Btlr. differs probably only by a somewhat different arrangement of the *punctata*. dots on the upper surface. — Both occur in the Amazon district.

C. hippea H.-Schäff. (135 d) is an extremely variable species, the ground-colour of which is entirely *hippea*. blackish-brown, but it may also be so much interspersed with brownish-red that the upper surface appears almost red. It is always recognizable by the small light oblique band of the forewing which, however, runs sometimes more steeply, sometimes more flatly. Guiana. Not rare.

C. phaedra Bat. (135 e). Bright orange-red; the black small dots do not form any clouds, but they *phaedra*. grow somewhat larger towards the distal margin and represent thin transverse streaks in the cell of the forewing. In the forests of the Rio Tapajoz.

C. asclepia Hew. (128 h). Very much like the preceding, but the dark dots are absent in the disc *asclepia*. of the upper surface of the wings. Ecuador. — In **xypete** Hew. (128 h, 135 b), being somewhat larger, the *xypete*. dots are combined to distal-marginal chains or costal transverse streaks of the forewing, sometimes more, sometimes less. Here the ♂ is mostly darker red than the ♀. Central America. Rather common.

C. leopardinum Fldr. (128 e, as *leopardina*). Bright ochre-yellow, the black transverse streaks in the *leopardi-* num. costal part of the forewing still more abundant and dense than in *xypete*, but also the other surface of the wings densely covered with black dots. Bahia; rare. — **hilaria** Hew. Here the crowds of black dots become *hilaria*. condensed in the apical part of the forewing to a black cloud. From the Amazon.

54. Genus: **Pachythone** Bat.

The *Pachythone* are so easily recognizable that scarcely one of them has ever been brought into a wrong genus; in the *Erycinidae* this fact is rare and a proof for this genus being one of the most natural. Though the body is small, it is of a very clumsy structure; the head and thorax are almost globular, the abdomen relatively stout and short; the antennae shorter than in nearly all the other genera and at the ends with a short, knob-like, small club; the palpi are also short, with a very short, relatively stout terminal joint; the veins do not exhibit any peculiarities except the cell of the hindwing, which is otherwise short in many *Erycinidae*, being here almost as long as that of the forewing. — The *Pachythone* are mostly very rare butterflies, not differing in their habits, as far as is known nowadays, from the allied genera. In the structure of the body, they somewhat resemble *Mesene*, but also *Syrmatia* and *Symmachia*.

P. erebia Bat. (142 i) is a small, above jet-black butterfly with white fringes of the hindwing. Under *erebia*. surface paler, likewise without markings. Amazon. Rare.

P. pasicles Hew. (142 i). Dark brown, the margin of the forewing lighter with a series of dark dots. *pasicles*. Forewing above with dark transverse dots in the basal part and a curved stripe beyond the middle, hindwing with 3 shortened stripes in the basal part, 3 transverse stripes crossing the distal part of the wings, and a dark border. Beneath like above, the transverse stripes are absent or broken up to strigiform dots. Espiritu Santo. Rare.

P. palades Hew. (142 i). Sooty blackish-brown, darker markings than in *pasicles*, besides a light-yellow *palades*. oblique band of the forewing. South Brazil, rare. — **philonis** Hew. is quite a similar species from Colombia *philonis*.

and Panama, but the dark bands of the hindwings are not distinctly noticeable, and the oblique band of the forewing is narrower, beneath more pointed and more orange than bright yellow.

mimula. **P. mimula** Bat. In the inner half of the dark brown forewings stands a yellow triangle, and in the middle of the apical half a yellow longitudinal spot. The basal part of the hindwing is yellow as far as beyond the middle of the wing, this colour bending in into the dark distal margin; thus the appearance, so very favourite in South America, of one of the black-yellow *Cyllopodina* results therefrom. From Santarem.

gigas. **P. gigas** G. and S. (142 k). ♀ similar to the preceding, larger, the yellow increased, so that the appearance of certain Heterocera (*Atryia isis*, *Flavinia postica* etc.) is produced. ♂ more rusty-coloured Panama. Distinguishable from similarly coloured *Aricoris*-♀ by the short palpi.

thaumaria. **P. thaumaria** Stich. As large as *coccineata* (142 i), miniate with a black margin of the wings and a black, white-pupilled apical part of the forewing. It resembles certain *Mesene*, though secondarily; the model for both may be small, *Endule*-like Heterocera, flying in day-time and being rather common.

xanthe. **P. xanthe** Bat. resembles the preceding, but the colouring of the ground of the wings as well as of the apical pupil is saffron. Border of the hindwing narrow, irregular. From the black costa of the forewing 2 black triangles penetrate the cellular space. Teffé.

distigma. **P. distigma** Bat. Dark brown; in the hindwing, between the cell and border, is a rusty-brown transverse spot, not reaching the inner margin. This spot is obliterated on the paler-coloured under surface, but here we notice in front of the border a series of dark dots in a light area. Size like that of the preceding species. It resembles *Phaenochitoniu crocostigma*.

ignifer. **P. ignifer** Stich. is described according to a ♂ from the Rio San Juan in Colombia. Wings above reddish ochreous yellow. Forewings at the costal margin and border rather uniform, at the apex bordered more broadly. Here a circular patch of the ground-colour is cut off by an oblique stripe from the costal margin to the border; the border of the hindwing is black, bending somewhat round at the apex and inner margin. Under surface more light yellow.

lateritia. **P. lateritia** Bat. (142 i). Above brick-red, sometimes more sparsely, sometimes more copiously covered with small dark dots being arranged into straight rows in the basal part and in front of the border and forming a curved chain behind the cell. Under surface (♀ also above) with a dark distal margin of both wings.

coccineata. Northern parts of South America. — **coccineata** Kaye (142 i) I figure according to a specimen from Tabaguite (Central Trinidad). Here the disc of the forewing is above almost unspotted. Similar specimens occur also at certain places of the continent. Guiana-specimens are often very small.

55. Genus: **Symmachia** Hbn.

This genus is distinguished by a strong bulging-out of the costa of the forewing of the ♂♂, this characteristic bulge recedes in but few species, presumably owing to a mimetic transformation. This widening of the forewing is accompanied by a peculiar flight resembling that of *Thecla*, which becomes very conspicuous in the non-mimetic species, whereas in the mimetic species it is replaced by that of the casual originals to which reference is made in the single species, and which may more correctly be eliminated from the genus. They are more closely allied to the *Cricosoma* than the non-mimetic species, but we shall here give the precedence to the more typical forms. Many *Symmachia* are great rarities, and they are extremely peculiar in the shape as well as in the colouring. Of many there exists but one specimen in collections, for what reason our illustration of this genus is mostly composed of copies according to FELDER, HEWITSON etc. They fly in day-time, not continuously, and rest beneath leaves.

A. Non-mimetic species: Costal margin of the forewings bulging out in the basal part.

tigrina. **S. tigrina** Hew. (128 e). Similar to *Cricosoma leopardinum*, like the latter yellowish-red ochreous, the black costal transverse streaks flow several times together; in front of the border black dots. The convexity of the base of the costa being in reality great, is not prominent enough in our figure. — In *virgatula* **S. virgatula** Stich. the apical transverse stripes are confluent; Rio San Juan (Colombia).

suevia. **S. suevia** Hew. (128 e) is a species (or subspecies) similar to the preceding, the black marking being arranged to marginal rays also before the border.

arion. **S. arion** Fldr. (128 f). Considerably larger, the transverse streaks in the costal part of the wings rather straight, in the disc of the forewing dark shades, below the costa of the hindwing a broad, yellow ray. The patria of the only specimen (which I saw in the Tring Museum) is not exactly stated.

stigmatosissima. **S. stigmatosissima** Stich. seems to be allied to *tigrina*, but to be also similar to *Cricosoma leopardinum*. The species is said to be dotted like the latter, but to have black triangles at the costa of the forewing.

Under surface silky smoke-brown, dotted. The diagnose does not state whether the costa of the forewing is sinuous, as in *Symm. tigrina* or uniformly round (as in *Cricos. leopardinum*). Not lying before me. Bolivia.

S. virgaurea Stich. (142 c). Similar to *virgatula*, but whereas the latter has a more red-brown ground-colour, that of *virgaurea* is brighter red, so that it reminds us of our *Chrysophanus virgaureae*. The apical area of the forewing broad, the border narrow black. Between the 4 coniform, costal transverse stripes a fine striation. Larger than *tigrina*. Colombia.

S. praxila Ww. (128 g). Bright yellow dotted on a black ground, the small spots next to the base and border of the forewing red. The most conspicuous of it is the colouring of the hunch of the base of the costa, which seems to represent plastically a thick, curved appendage, looking like a feathered antenna laid over the costal margin of the forewing. South Brazil.

S. norina Hew. (128 g) greatly resembles the preceding, but it is smaller, the fine markings sparser and duller yellowish instead of white. Amazon.

S. calligrapha Hew. stands in the middle between the two preceding species, with respect to the size as well as to the copious light small spots. From the Rio Tapajoz; a somewhat duller spotted specimen from Guiana was regarded as the ♀ of the species.

S. calliste Hew. (128 h, as *hippea*) already resembles the following species *cleonyma* by most of the tiny spots of the upper surface being coloured in a bright red-brown; only above, at and below the cell-end they are yet of a light colour. — A somewhat smaller form of another flying-place, which, however, is not to be denominated and represents a transition to *norina*, we have figured 128 h; it was by mistake denoted as „*hippea*“ on the table, Brazil.

S. cleonyma Hew. (128 h). All the small spots of a bright red-brown; but besides the disc of the hindwing is rather extensively brightened up by red-brown. We figure a specimen from Nicaragua; HEWITSON supplies a rather deviating figure; we reproduce the copy of it 134 g, which was by mistake denoted as „*calagutis*“ on the table. — **leena** Hew. (128 g) is somewhat smaller, but otherwise quite similar, some of the small spots of the upper surface ring-shaped, as for instance at the base and anal angle of the forewing. Likewise from Nicaragua *). — **harmodius** G. and S. from Colombia is like *leena*, but the forewing without spots, the brown cloud in the hindwing, however, distinct. — **multesima** Stich. from Colombia is said to be similar, but to have a whitish costal spot, and in the forewing (like *leena*) a red-brown area.

S. pardalis Hew. resembles *praxila* (128 g), but it is very much more densely and brightly coloured in a reddish yellow, with red-yellow, small transverse bands in the costal part of the forewings. In the disc of the wings the small spots are lighter yellow. — The last 9 forms, together with **juratrix** Ww. being unknown to me in nature, are undoubtedly very closely allied to each other. Most of them are of only one very narrowly circumscribed flying-place, and known only in 1 specimen, and it is not unlikely that they are modifications of very few widely distributed, but throughout rare species.

S. menetis Drury (= *tacitus* F.) (128 d). A great part of the forewing and the whole hindwing bright red, the costal part of the forewing black with white spots. In the ♀ (= *eurina* Schs.) the red runs before the distal margin towards the apex. An extremely conspicuous butterfly already resembling in the flight certain Lithosiids (which are also imitated by Microlepidoptera) in which, however, the proximal half of the wings is red, the distal part being black and white, so that the resemblance disappears in the resting animal. South Brazil. — In **piliarius** Stich. (128 d) the black in the wing is increased, particularly the dark border of the hindwing is broader. Likewise in South Brazil. — The species is very rare.

S. rubina Bat. (= *irata* Stgr.) (128 d). The black-white part in the forewing towards the red not straight, but irregularly defined, moreover, the base of the forewing is broadly black. Mexico to Colombia. — In **technema** Stich. (128 d) from Guiana the hindwings are still broadly margined in black. — The latter is also the case in **maeonius** Stgr. from the Amazon, but here the black-white part of the forewing is so much developed that the bright red is confined to the inner-marginal part of the forewing. — Very rare.

S. titiana Hew. (128 f) is orange-yellow, with black margins of the wings and a black costal triangle embedded with white on the forewing. Ecuador. Very rare.

S. arcuata Hew. (128 e). The red is here more miniate and confined to the inner marginal part and the disc of the hindwing. In the black part of the forewing only sparse, small white spots. Amazon.

S. hetaerina Hew. (128 e), originating like *arcuata* from the Amazon, is a very closely allied species or form, in which the inner spot of the wings is dull bone-yellow. — **hesione** Stich. has the median area pale ochreous or pale reddish; Upper Amazon. — Rare.

*) GODMAN and SALVIN call our attention to a hair-pencil in the middle of the costal margin of the hindwing, by which *leena* is said to be distinguished from nearly all the other *Symmachia*.

- threissa*. **S. threissa** Hew. (128 e) is a larger species, the forewings without red, only in front of the cell-end a white cuneiform spot; in the hindwing the cell is red-brown. Nicaragua. Rare.
- jugurtha*. **S. jugurtha** Stgr. (128 f). Forewing black with much white forming in the centre of the wing a large costal triangle and behind it a macular band. The inner margin of the forewing and 2 thick rays in the hindwing bright red. Colombia. Rare.
- aconia*. **S. aconia** Hew. has the red inner marginal stripe of both wings like in *jugurtha*, but the white in the black forewing is reduced to some minute splashes, and the red wedge below the costa of the hindwing is absent. Bolivia. Rare.
- miron*. **S. miron** Sm. has the forewings quite similar to *jugurtha*, but the hindwing is uniformly red, only narrowly margined in black. Ecuador.
- accusatrix*. **S. accusatrix** Ww. (128 f). Forewing black (♀ blackish brown) in the costal part very much spotted in white. The ♀ has white and reddish dots in the disc, in the ♂ the costal part of the hindwing is scarlet red. Central America to the Amazon. Rare.
- probetor*. **S. probetor** Stoll (= *probetrix* Hbn.) (128 g). Quite black, only in the middle of the costa of the forewing a small white wedge, and along the costa of the hindwing a red stripe. — In the form **astiana** form. nov. *belli*. (128 g) the white is absent in the forewing; from Guiana and the Amazon. — In **belli** G. and S. being somewhat smaller than typical *probetor* the ♀ has reddish-yellow, instead of white, small spots in the forewing. Colombia. I do not know of any authentically patented model to this species, but in the form *astiana* (with quite dark forewings) the species already resembles some other *Erycinidae*, such as *Euselasia gelon*-♂ (= *sabinus* Stoll, t. 121 b) and *Xenandra heliodes*-♂ (131 i).
- championi*. **S. championi** G. and S. greatly resembles *probetor*, but the forewings are more blackish-green with a black-spotted base; the ♀ is on the whole darker. Mexico and the adjoining parts of Central America. Rare.
- falcistriga*. **S. falcistriga** Stich. (128 g) flies on the Lower Amazon and in Guiana together with homochromous *Caria*-species. It is black, above with a greenish lustre, hardly well discernible from a *Caria*. Thus the two last-mentioned species form the transition to the mimetic forms. The figured specimen of this species is in the Paris Museum and originates from the Maroni River.

B. Mimetic species. Forewing longer, more pointed, the costa bent uniformly.

- triangularis*. **S. triangularis** Thm. (128 h). By the oblique orange stripe on the black ground of the forewing it reminds us of numerous smaller *Arctiids* with the same scheme of colouring, and of just as numerous imitators of these *Arctiids*, several of which belong to the *Erycinidae*, but apparently also *Geometrids* which otherwise supply but few examples of mimicry are concerned in this imitation. Colombia.
- tricolor*. **S. tricolor** Hew. (128 g). Beside the median band running across the abdomen (as described in *sagaris*), we find here yet 4 small orange distal bands. Amazon and Colombia. — **hedemanni** Fldr. (= *niciades* Bsd.) (134 i) has all the bands lighter yellow and the distal ones shortened to oval spots. Central America. — These forms are homochromous with *Heterocera* as well as with *Erycinidae* from the genera *Baeotis*, *Nymphidium* etc. Rare.
- rita*. **S. rita** Stgr. (128 g). In the exterior it resembles *falcistriga* above, but the costal part of the hindwing exhibits a lustrous blue, whereby it becomes similar to certain *Thecla*, and, of the *Erycinidae*, to certain *Euselasia*. The tiny animals are rare. Beneath they resemble, like the somewhat similar *S. falcistriga*, certain species of *Charis*. The figure has been done according to a specimen from Iquitos.

56. Genus: **Caria** Hbn.

In the shape of the compact, robust body and of the costa of the forewing projecting arcuately before the middle, in the flight and habits, as well as in the veins of the wings, there is hardly any difference to be noticed between this genus and the chief group of *Symmachia* (i. e. those species that are not deformed by mimicry). GODMAN and SALVIN, however, emphasize differences in the sexual organs of the ♂♂, and ever since the two genera are separated afar in the catalogues. The *Caria* generally have a dark upper surface which, however, is more or less ornamented with golden scales of a magnificent green reflection; the under surface sometimes exhibits a conspicuous red, particularly in the cell of the forewing. The ♀♀ show a decided relationship of the genus with the *Emesis* which, however, deviate from them in a different direction of development, from the previously mentioned *Mesene*, so that the relationship cannot be described in a continuous line. The *Caria* described hitherto are probably only vicarious forms of few species. The animals sit, with their wings spread, on sandy banks and are rather timid.

- mantineia*. **C. mantinea** Fldr. (135 e). Beside *lampeto* the largest species. Above at the base of the forewing and in the disc dusted with a metallic bluish-green, and a faintly lustrous, straight line before the distal margin. Of a brighter bluish-green lustre is an undulated submarginal cloud at the hindwing. Under surface sooty

blackish-brown; cell of the forewing red, above it (in the bulged-out costa-bow) and behind it (behind the cell-end), at the apex and between both, metallic spots. Before me from Bolivia (Province of Sara) and from the Coll. BANG-HAAS from the Pachitea; described from Ecuador. — **amazonica** *Bat.* has a more copious metallic scaling, particularly beneath, where often the whole cell of the forewing is embedded in metallic spots, whereas the red in the cell is somewhat reduced; from Teffé.

C. lampeto *G. and S.* (135 f). Above almost exactly as the form *amazonica* of the preceding species, beneath, however, the metallic scaling is reduced to faint traces above the cell and maybe a small faint spot at the apex. Central America to Bolivia. Not rare, particularly near Muzo in Colombia.

C. trochilus *Er.* is smaller than the preceding, the ground-colour of the upper surface blacker, beneath there is no red in the cell of the forewing, but in the costal part are numerous metallic spots, especially also in the cell of the forewing itself. Guiana. — **arete** *Fldr.* (135 f) has the same under surface, but above less gold which is more prominent almost only in the anal part of the hindwing; the submarginal metallic line of the forewing is absent altogether; Amazon to Peru and Ecuador.

C. castalia. The most common form is **marsyas** *Godm.* (135 e) recognizable by the under surface of the forewings, where the cell being filled out with red is interspersed with small metallic spots. Above similar to the preceding species, but with a faint metallic line before the border. South Brazil and Paraguay. In the typical **castalia** *Men.* (*tabrenthia* *Schs.*) from Brazil and Peru the ♂ has no red at all in the cell of the forewing beneath. — ab. **philema** *Stich.* is the name of a specimen with a red-yellow stripe beneath before the border. — **smaragdina** *Godm.* (135 e) is above very brightly scaled in green, the light metallic stripe before the border on the forewing broad; under surface without red in the cell of the forewing. Bolivia. — The species is not rare.

C. colubris *Hbn.* (= *paridion* *Dalm.*, *argiope* *Godt.*) (135 f). Easily recognized by the bridge which runs through between the green of the base and the disc on the middle of the forewing being narrow, jet-black and filled up narrowly with brown. Before the apex mostly a bright orange spot. Beneath similar to *lampeto*. — ab. **fulvimargo** *Lathy* (135 e) is the denomination of a light specimen being bordered by orange-yellow above on the hindwing, beneath also on the forewing; a colouring often occurring in the ♀♀ of the other *Caria*-species. Interior of Brazil to Peru. — In **plutargus** *F.* STICHEL presumes a ♀ of „*argiope*“; the figure of this form, being supplied by DONOVAN, exhibits a rough dotting which presumably scarcely answers to nature. Brazil.

C. domitianus *F.* (135 f) has on the upper surface of the forewing the golden green exactly in the middle of the wing, i. e. at the place, where it is absent in *mantinea*, *lampeto* etc. Easily recognizable by the yellowish-red under surface exhibiting metallic spots in the costal part of the forewing, while it is otherwise covered all over with black spots. Guadeloupe. — **ino** *G. and S.* from Mexico deviates especially by the absence of all the golden green scales on the upper surface; — **melicerta** *Schs.* which extends still farther to the north as far as Texas, with very few dispersed golden scales, forms a transition between the two forms; — **galbula** *Fldr.* is, on the contrary, the southern form, described from the Province of Caracas (Venezuela), looks above almost like a small *castalia*, but is immediately distinguished by the red-yellow under surface. In this form the golden-green strewing of the upper surface is the most copious.

C. rhacotis *G. and S.* (135 f) exhibits in the median area of the forewing an accurately defined, irregular spot of a golden green lustre; the under surface is deeper red-brown, particularly in the ♂, with black dots of which those along the costa of the forewing exhibit a dull leaden lustre. Honduras to Colombia. — **harmonia** *G. and S.*, described according to 1 specimen, from the Isthmus, may only be an aberration without the leaden spots on the under surface along the costa of the forewing.

C. stillaticia *Dyar* (143 e, f). Upper surface almost quite blackish brown with jet-black spots; metallic bluish-green scaling is noticed almost only in the anal region of the hindwings, and a metallic line may run along in front of the border of the hindwing or also be absent altogether. Very characteristic is the dark red-brown under surface by nearly all the black spots of the hindwing and all those of the costal half of the forewing being brightly centred in silver. Mexico; the specimens before me originate from Guerrero.

C. melino *Dyar.* Dark leaden grey with tiny black spots of a greenish lustre. Forewing with a spot in the cell, behind the latter a series of small spots and in front of the border a double row. On the hindwing dispersed small spots scarcely forming a row, whereas the double submarginal row is almost formed by lines between which there is a copper-like tinge. Under surface dull red, the spots like above and more distinct, scattered across the base of both wings; above the apex of the forewing lies a broad shade and a narrow one runs along the border of the hindwing; the inner margin of the forewing grey. 22 mm. Tehuacan in Mexico; discovered in 1911 by ROBERT MUELLER.

C. chrysame *Hew.* (135 g). Distinguished from all the species enumerated so far by the fact that not the median area but the whole wings are above coloured in golden green; only the marginal area is blackish grey, bordered by bright bluish-green metallic lines, of which the outer one is as fine as a hair, sometimes interrupted in typical specimens from Bolivia; — in Peruvian specimens — **psittacus** *Hpfpr.* (= *scurra* *Stgr.*) — it is broad and distinct, almost like in *sponsa* (135 g). Under surface earthy-grey with rows of dark dots which may be numerous and distinct, but also be absent. Common.

sponsa. **C. sponsa** Stgr. (135 g). Similar to the preceding, but also the distal area is golden green, except a narrow border, a dark submarginal line and a dark large spot before the apex of the forewing. On the Jurimaguas.

57. Genus: **Chimastrum** G. and S.

The small, delicate butterflies of this genus consisting of but 2 species exhibit an alliance to the *Mesene* and *Esthemopsis*, and are placed before the *Symmachia* by STICHEL *). They differ from these two groups by white wings of a silken gloss, from the latter genus by the gently curved, not bulged-out costa of the forewing. The body is more delicate than in *Caria* and *Esthemopsis*, approximating more the *Baeotis*.

argenteum. **Ch. argenteum** Bat. (= hewitsonii Bsd.) (128 b). Silky-white with a rusty-yellow base of the wings and a black margin. Central America, particularly on the Chiriqui; single, though not rare.

carnutes. **Ch. carnutes** Hew. (128 b, as *carnutus*). Silky white, from the black distal margin black tips extend towards the base, two of which intersect each other in the shape of an X on the forewing. Colombia, not common.

58. Genus: **Baeotis** Hbn.

Tiny, black and yellow, sometimes also white and black butterflies flying about in the sunshine during day-time, with a delicate body, a somewhat projecting apex of the forewing and an extraordinarily short cell of the hindwing, which is not even half as large as the cell of the forewing. About a dozen of species are known.

felix. **B. felix** Hew. (134 f). White with a broad black border, the lemon-coloured base of both wings separated from the white ground-colour by a black stripe (from the middle of the costa of the forewing to the middle of the inner margin on the hindwing. Bolivia and Peru). — In *felicissima* Thm. (134 f) from Ecuador a lustrous light-yellow line runs through the black margin. — A specimen in FASSLS collection, from Co-roico in Bolivia, has a lemon-coloured ground-colour, without any white at all; I call it ab. **citrina** ab. nov. — Not rare.

nesaea. **B. nesaea** G. and S. (134 f) looks like the ab. *citrina* of the preceding species, but it is somewhat smaller and has a twice as broad black margin traversed by a yellow thin stripe running between 2 metallic lines. Costa Rica, Chiriqui. — **bacaenita** Schs. (134 f) exhibits the yellow median area narrowed, particularly in its costal part of the forewing, but otherwise it is allied to *nesaea*. Peru and Bolivia, taken yet at an altitude of 300 m on the Juambari. — **euprepes** Bat. from the Rio Tapajoz is not before me; it has likewise 3 yellow stripes through both wings, the foremost of which, however, is more remote from the base of the wing.

bacaenita. **B. bacaenita** Hew. (134 f). Smaller than the preceding, the yellow basal stripe and the submarginal line as thin as a thread, the median area of both wings forms a white, conjoint oval. Ecuador. — **elegantula** Hpffr. (134 f) scarcely differs, the stripe at the base more ochreous-yellow as well as the line in the black distal margin, this line being expanded towards the costa of the forewing. Peru and Bolivia. — Common.

prima. **B. prima** Bat. This species, not lying before me, has likewise 3 yellow transverse stripes; the first runs along the inner margin of the hindwing, the middle stripe being oblique, the subapical one fine. On the under surface one yellow stripe in addition and the outer one in the anal part of the hindwing forked. One of the largest species. The forewings have a complete metallic line before the border. From the Rio Tapajoz. — This species is perhaps approximated by **orthotaenia** spec. nov. (134 f) from Bolivia, in which, however, the median stripe in the forewing stands straight, while the hindwings have a metallic line before the border, the forewings, however, only indications of such a line before the apex. — **dryades** Dogn. is presumably also allied to this species, but it is smaller, the median stripe reaches neither the costa of the forewing nor the inner margin of the hindwing, it is strangulated in the middle, while the distal stripe is intersected in such a way that it is broken up on each wing into 2 spots (near the costal margin and the inner margin).

creusis. **B. creusis** Hew. (134 e). Very easily recognizable by the common median stripe being white, above and below tapering and slightly bent like an S. Bolivia. — In **creusina** Stich. (134 e) lying before me from Cuzco (Peru) the submarginal stripe is as fine as a hair and often even obsolete for some distance. — Not rare.

hisbon. **B. hisbon** Cr. (= hisboena Hbn.) (134 g). Much smaller than *creusis*; the median stripe slightly curved like an S, as in *creusis*, but on all the wings the distal stripe is greatly shortened, above and below. South Brazil, rather rare. — In **zonata** Fldr. (= simbla Bsd., libna Btlr.) (134 g) all the yellow stripes are considerably widened, particularly in the ♀, and behind the (shortened) outermost stripe of the forewing, which is mostly fusiform, we notice another small yellow spot in the anal angle of the forewing. Mexico to Colombia. Common. — **expleta** Stich., on the contrary, denotes specimens in which the yellow spots in the distal part of the wings have disappeared altogether or to some traces of them. Described from Honduras.

capreolus. **B. capreolus** Stich. (134 g) approximates the preceding species, but the fusiform distal spots are coherent with the yellow median band by means of a broad pedicle. Colombia.

*) Genera Insectorum, Riodinidae p. 227.

B. melanis Hbn. (134 g). In typical specimens the median band is still narrower than on our figure; *melanis*, instead of it, however, also the hindwing exhibits yet a shortened and often darkened piece of the distal stripe, as for instance in specimens from Rio de Janeiro. The figured specimen originates from Petropolis; here only faint shades of the distal stripe are still noticeable. In specimens from São Paulo the distal stripe has entirely disappeared above, and the basal stripe is in no case visible above; beneath, however, all the stripes are to be seen, though they are often narrow.

B. johannae E. Sh. (134 g). I cannot tell for sure whether this species is justified to be placed into *johannae*, this genus; the wing-contour and the structure of the body deviate from the other *Baeotis*. We see here only yet a pale-yellow median band running broadly through the dull blackish wing. North Brazil. — In a ♀ from Ceara the median band is extremely narrow, but there are traces of a submarginal stripe to be seen; I denominate this form **cearaica** *form. nov.* (134 g). — We must remark yet that the width of the *cearaica*, median band, as well as its shape vary greatly according to the district. In the form **truncata** Stich. from *truncata*, Minos Geraes it is even obsolete for some distances. — Not common.

B. barce Hew., which is not before me, seems to me to be only an aberrative form of a *Baeotis barce*, approximating *johannae*. Here the yellow median band is present only on the hindwings, whereas on the forewings it is obsolete except a tiny median spot and a faint beginning at the inner margin. It was described from Mexico, but I did not find anything similar in the copious collections from Mexico, which I examined.

B. barissus Hew. which has been placed here, but which probably is more correctly taken to the *barissus*, following genus, is a small dark-brown butterfly with 6 parallel, yellow transverse stripes; it pretty exactly resembles the ♀ of *Argyrogramma trochilia*, as we figure it t 135 d, but the light dots in the dark distal margin are absent. Ecuador is stated as its patria. The species is considerably smaller than *A. trochilia*.

59. Genus: **Argyrogramma** Stich.

This genus already approximates the *Charis*-group to which its species had formerly been placed. They all are small, extremely delicate butterflies, the structure of which is allied to that of the *Caria*, and of the *Phaenochiton* which are likewise mostly dealt with as *Charis*. At the palpi the first joint is conspicuous for its great length being uncommon in *Erycinidae*. In the veins we have to mention the relatively long cell of the hindwing, being only little shorter than that of the forewing. From the subsequent Anteros it deviates by the shape of the hindwings. STICHEL places 12 distinct species here, which are allied to the genera dealt with last in the habitus and the colouring.

A. trochilia Ww. (135 d). The ♂ is of a brilliant sky-blue with black transverse stripes and a dark *trochilia*, distal margin being finely filled up by orange. The ♀ has 5 yellow stripes on a dark ground and a metallic line often reduced to tiny spots before the border. Under surface of both sexes striped like a zebra. On the Lower Amazon the species is not very rare. — **leptographia** Stich. of which only the ♂ is before me, is *leptographia*, of a very bright sky-blue sapphire-lustre, with a broader orange filling in the border and a blackish dotted instead of striped under surface; taken by FASSL near Muzo in Colombia.

A. saphirina Stgr. (135 d) is considerably larger; the ♂ reminds us of *Voltinia theata*-♂ (126 d), but it *saphirina*, has a lighter blue lustre, and an under surface resembling exactly the upper surface of its ♀; in the latter both surfaces are almost alike, blackish brown with broad yellow stripes and a metallic line before the border of the forewing. Before me only from Colombia, but it is also mentioned from Peru and Bolivia. — In *subota* *subota*, Hew. from Ecuador the distal bands being interrupted in *saphirina* are complete.

A. glaucopis Bat. (142 g). From Teffé on the Amazon. Here the ♂ has behind the middle of the fore- *glaucopis*, wing a broad smalt-like transverse stripe, similar spots in the cell, and one in the distal part of the forewing; at the base of the forewing and at the inner margin of the hindwing dark red oblique spots. Before the border a blue metallic line. The under surface with numerous black chequered spots and an interrupted metallic line before the border. The ♀ which is not yet described and which we figure, resembles somewhat a small *saphirina*-♀; the transverse stripes of the forewing are complete, those of the hindwing interrupted; the yellow is darker, more ochreous, at the border of the hindwing even bright orange. Under surface with black spots which, however, are arranged to stripes.

A. barine Stgr. (135 c, as *barsine*). The ♂ has behind the middle of the forewing a smalt-like spot *barine*, placed on the inner margin, and dark small spots in the disc of both wings; the ♀ is lighter, yellowish-grey, with darker macular bands and a blackish distal marginal part of the forewing with a blue spot before the middle of the border. From the Rio San Juan in West Colombia.

A. amalfreda Stgr. (135 c). Here the whole hindwing, except the border, and the proximal half of *amalfreda*, the forewing are red with small fine black spots. In the black distal half of the forewing is a smalt-like spot; before the border a metallic line. Pebas. The ♀ is unknown to me. — **nurtia** Stich. (142 g) entirely *nurtia*, resembles the preceding, but it is larger; above the blue spot of the forewing is yet another blue, small spot; the border of the hindwing broader black; Bolivia, Peru. — In **physis** Stich. (137 f, as *rhesa*), on the contrary, *physis*.

- the blue spot is much smaller than in *amalfreda*; Colombia. — *physis* exactly reproduces the appearance of *Lemonias rhesa* Hew., but the latter has a broader black apical part of the forewing and, before the border, a silvery line. — In *phyton* Stich. from the Amazon the blue spot is oblong, larger than in *physis*, smaller than in *nurtia*, and the antemarginal lines of the hindwings are broken up to small streaks.
- occidentalis*. **A. occidentalis** G. and S. (= *juanita* Stgr.) (135 c). As large as *amalfreda*, but the inner part of the wings more miniate than vermillion, more dotted in black, and in the distal part no blue spot. According to STICHEL, the ♀ resembles *A. venilia* Bates. Colombia. — *placibilis* Stich. from Peru has a less intensely darkened distal part of the wings, so that here the black markings are more distinctly prominent.
- venilia*. **A. venilia** Bat., from the Lower Amazon, is somewhat lighter yellow, otherwise similar to **crocea** G. and S. (135 c) from Central America, but just as densely and coarsely spotted. Both the forms are larger than *occidentalis*, with broader wings, and the darkened margin is narrower. Not common.
- stilbe*. **A. stilbe** Godt. (= *perone* Ww.) (135 c). Here the distal part of the wings is no more darkened at all, the dull ochreous-yellow upper surface exhibiting dark panther-like markings. Brazil.
- holosticta*. **A. holosticta** G. and S. (135 c), from Central America to Peru, is almost exactly like *stilbe*, but light lemon-coloured. Mexican specimens have smaller and more sparse dots.
- sulphurea*. **A. sulphurea** Fldr. from Mexico is just as bright light yellow, but the dark spots are larger, particularly at the margins of the wings. — **macularia** Bsd. (= *ochreas* G. and S.) (135 c) from Central America and Colombia has the spots thicker also on the disc of the wings. Not rare.

60. Genus: **Anteros** Hbn.

The species of this genus are immediately recognizable by the under surface in which small, brown or black-bordered spots with metallic centres stand on the light yellow ground. The upper surface is mostly black with a yellowish central spot. Morphologically, the species are distinguished by two characteristics: by a beard consisting of long cilia at the anal angle of the hindwing and by dense, brightly coloured flocks of hair at the legs. Most of the species are not common; they mostly rest on the under surface of leaves with their wings spread out, but sometimes they clap their wings together above the back. The flight is somewhat Lycaenid-like. Of *renaldus* forming already a transition to the *Ourocnemis* I saw the ♂♂ sometimes on open spaces in the woods, playing with each other and dashing up and down in enormous oscillations so rapidly that it was quite impossible to recognize them during their flight; it is the same peculiar habit I also noticed in some Indian butterflies of other families, in the Lycaenid *Bindahara phocides* and the Hesperid *Tagiades atticus*.

- chrysoprastus*. **A. chrysoprastus** Hew. (133 f). Under surface very pale yellow, the small spots dispersed and tiny, without a true brown halo. Upper surface blackish brown, the hindwings margined in bone-yellow. From Guatemala to Bolivia. The ♂♂ of the southern habitats mostly have in the forewing a tiny light median spot, specimens from Panama, the Chiriqui and Paramba are above without any small white spots at all. = **roratus** G. and S. (133 f); specimens from Bolivia (Rio Songo) form the intermediary, i. e. there is a faint trace of the median spot of the upper surface. Not rare.
- roratus*. **A. roratus** G. and S. (133 f) entirely resembles the preceding and may be of the same species; the median spot on the upper surface of the forewing more distinct; beneath a dark beam above the cell-end of the forewing, and in the ♀ intense, dark spots with metallic centres above the anal angle of the forewing which are smaller or absent in ab. **cumulatus** Stich. (133 f). Chiefly at home in Colombia, where it is rather common; rarer in Central America and Ecuador.
- allectus*. **A. allectus** Ww. (133 f) Forewing above with a very large yellow spot occupying in the ♀ the whole centre of the wing; beneath, both wings with a very large dark median cloud. Lower Amazon. May be only a collateral-form of the preceding species.
- otho*. **A. otho** Ww. (133 f). Forewing above with a very large yellow spot occupying in the ♀ the whole centre of the wing; beneath, both wings with a very large dark median cloud. Lower Amazon. May be only a collateral-form of the preceding species.
- formosus*. **A. formosus** Cr. (= *croesus* F., *valens* F.) (133 f). Somewhat larger than the preceding, but the under surface densely covered with spots of a red-brown margin and a golden-centre. — The form **micon** Stich. (133 f, g) has beneath less, **lectabilis** Stich. (133 g) more brown spots; the former occurs more in the north, the latter in the south of the range. From the northern coast of South America to South Brazil and Peru, mostly not rare, but very local. *stramentarius* Stich. from la Paz in Bolivia, *maculosus* Stich. from Panama and *theleia* Stich. are transitions or insignificant deviations. — **cruentatus** Stich., according to a damaged and, as it seems, much flown specimen, is not before me and seems to me to be only a more sparsely spotted example of this species; from Colombia.
- acheus*. **A. acheus** Stoll (= *ampyx* Drc., *troas* Stich.) (133 g). Considerably larger than the preceding; under surface variable, but on the whole rather densely spotted, the spots arranged similarly as in *formosus*. In

typical specimens the forewing has a tiny central spot; in **kupris** *Hew.* (133 g) being mostly still larger a large *kupris*, rhombic spot stands in the centre of the forewing, above, behind or below which may be yet accessory small spots. *aureocultus* *Stich.* is the name for Bolivians being beneath very much spotted. From the northern coast of South America to Bolivia and South Brazil; not very rare.

A. bracteata *Hew.* (133 g). Under surface like that of the preceding species, but the upper surface *bracteata*, unspotted, black, of a blue lustre. Amazon to Bolivia; apparently rare.

A. carausius *Ww.* (= medusa *Drc.*) (133 h). In this species the dark marking of the under surface *carausius*, has increased so much that it has removed the light yellow colour except some traces before the apex. Upper surface dark brown with 2 vitreous spots. Mexico and Central America. — In the smaller form **principalis** *Hpffr.* (= *carus* *Godm.*) (133 h) lying before me only from Bolivia, the under surface of the hindwings is marked more indefinitely and the forewings exhibit yet a third, very tiny spot. — In FELDERS collection in Tring there is a transition without the patria being stated. Apparently rather rare.

A. renaldus *Stoll* (133 h). Tiny vitreous spots, mostly only 1, comma-shaped, at the cell-end. Wings *renaldus*, above deep dark blue except at the black apical part. Under surface earthy-brown with faintly lighter and darker shades. The name *indigator* *Stich.* denotes specimens in which the blue of the upper surface is narrowed. Central America to South Brazil. — **notius** *Stich.* (133 h) are South Brazilians with a more indefinitely marked under surface. — The butterflies are not rare, but very local and difficult to capture, as they fly rapidly. *notius*.

61. Genus: **Ourocnemis** *Bak.*

Approximating the preceding genus, but immediately recognizable by the shape of the wings. The forewing more pointed, with a strongly bent costa, a more pointed apex and a slightly curved border. The hindwing projects not only in the anal part, but also in a faint tooth at the places where the lower median veins terminate. The palpi are long, with thick, club-shaped, projecting ends, the legs less long haired. The species are apparently extremely rare.

O. bouletti *le Cerf* (133 h). Under surface rather similar to that of *A. carausius*; upper surface blackish, *bouletti*, the wings in the disc with a dull blue gloss, without vitreous spots, hindwings at the anal part of the distal margin faintly tinged in a rusty colour. The type I figure and which the Paris Museum had lent me, is denoted by „Matto-Grosso“; FASSL sent another specimen from the Rio Songo.

O. axiochus *Hew.* (133 h). The type has a dark, less variegated under surface, the booth at the end *axiochus*, of the lower median vein is more obtuse, the blue lustre of the upper surface duller, more diffuse, the border of the hindwing not rusty red in its anal part. „Brazil“; before me from Cuyaba (Coll. BANG-HAAS).

62. Genus: **Sarota** *Ww.*

Differing from the preceding genera by the less hairy legs (which, in *Anteros*, look like hairy tassels) and by the hindwings of some species terminating, like in *Helicopsis*, into a series of divergent tail-points. The butterflies are brown, above without metallic colours, beneath, however, with a variegated marking decorated with metallic fillets, which somewhat reminds us of that of the Indian *Hypochrysops*. In contrast with the preceding genus the species of which number among the greatest rarities, the *Sarota* are not rare where they occur.

S. chrysus *Cr.* (133 h, i.). Blackish brown, hindwings lighter; ♀ above lighter with many large spots *chrysus*, of the forewing, ♂ darker with less and small spots of the upper surface. Typical *chrysus* have light diffuse spots in the variegated marking of the under surface, of which the one before the middle of the distal margin is particularly large, rectangular, transverse. — In ab. **dematria** *Ww.* (133 i) the spots of the under surface *dematria*, are reduced, particularly the large, light, transverse spot is not prominent. — ab. **polypoecila** *Stich.* are very *polypoecila*, light ♀♀ with remarkably many light spots. — ab. **neglecta** *Stich.*, on the contrary, has none or scarcely *neglecta*, any light spots of the upper surface. — From Mexico, where the species flies near Misantla in very large dark specimens, through Central America and Colombia to the Amazon; in many districts common.

S. acanthoides *H.-Schäff.* Recognizable by sabre-shaped, feathered small tails being placed at all the *acanthoides*, terminations of veins at the border of the hindwing. Typical specimens from Guiana and the Lower Amazon have shorter tails, those from the Upper Amazon (Pebas) longer tails (= **spicata** *Stgr.* 133 i). The latter have *spicata*, also a darker under surface and more distinct black spots between the metallic stripes of it. — Rare.

S. acantus *Cr.* (= *acanthus* *F.*) (133 i). This species greatly resembles *gyas*; both are above blackish- *acantus*, brown, beneath with varyingly red and smaltly-lustrous transverse stripes. *acantus*, however, differs from *gyas* by having black forelegs, while *gyas* has reddish-yellow ones. Guiana to Bolivia; not rare.

- gyas*. **S. gyas** Cr. (133 i). Mostly smaller than the preceding species; besides recognizable by the yellowish-red forelegs which are black in *acantus*. The marking beneath similar as in *acantus*; some ♀♀, however, have above a yellow border of the hindwing (= *lasciva* Stich.). Central America to Brazil.
- myrtea*. **S. myrtea** G. and S. replaces *gyas* to the north of Nicaragua, as far as Mexico, but differs by the black forelegs. Beneath the second submarginal metallic band, which in *acantus* runs almost as far as the costa, ends already at the median. Rarer.
- gamelia*. **S. gamelia** G. and S. (133 i) has like *gyas* yellowish-red forelegs, but the forewings have here beneath oblong submarginal spots which are absent in *gyas* and *myrtea*. Otherwise the species greatly resembles the latter, but *myrtea* has black forelegs like *acantus*. Common, Central America.
- psaros*. **S. psaros** G. and S. Similar to the preceding, at the border of the hindwing there are small tips at the ends of the veins. The under surface is lighter, particularly in the disc of the wings, where it is almost whitish, the markings and spottings of the allied species are here scarcely indicated. This species was based upon a single ♀ from Guatemala. — **psaronius** Stich., based upon 2 South Brazilian ♀♀, is beneath almost white, in some places dusted in grey, and it has a red border of the wings, being also larger than *psaros* from Guatemala.

63. Genus: **Charis** Hbn.

This genus comprises a great number of tiny butterflies, all of which exhibit metallic lines before the border of the wings, which is pointed at the apex, the distal line running closely in front of the border of the wings, the second line 1 to 2 mm before it. The upper surface is rather unicolorously black or dark brown. The bodies are mostly very delicate. The butterflies, in contrast with most of the *Erycinidae*, are nearly all very common, sitting with their wings extended or spread out high (as if pinned) on umbels or compositae, mostly in their centres, which they do not like to leave. They then rise in a somewhat buzzing flight, usually only to the next blossom where they settle down again. Like many *Erycinidae*, they seem not to fly much spontaneously.

- anius*. **Ch. anius** Cr. (= *anius*, *avius* auct., *eleodora* Godt.) (134 a). The many hundreds of specimens lying before me of this common species vary scarcely; they are recognizable by the under surface of the ♂♂ with a magnificent deep blue reflection. The ♀ has not so distinctly white fringes of the hindwings and somewhat more pointed forewings than our figure which was depicted according to a very much flown specimen and retouched by a mistake in an exaggerated way by the artist. Also the speckling of the fringes of the forewings is always present, but often scarcely noticeable. From Central America to Brazil, Ecuador and Bolivia. — We may add here **calagutis** Hew. without the patria being exactly stated, exhibiting above only 1 silvery line, the under surface being dull dark grey instead of metallic blackish blue.
- cleonus*. **Ch. cleonus** Stoll (= *timaea* Dbl.) (134 a). Similar to *anius*, but recognizable by the white fringes of the hindwing and by the under surface of the ♂ being about like the upper surface, black with 2 parallel, blue-metallic lines in front of the border and white fringes of the hindwing. The ♀ has on both surfaces between the silvery lines a red-brown, dotted marginal band. Guiana to Brazil and Bolivia. Common. — **caryatis** Hew. (= *cleonus* Godt. nec Stoll) has a black under surface, with but 1 silvery line, being on the forewing widened like a band; from the Amazon.
- gynea*. **Ch. gynea** Godt. Similar to the preceding, but much narrower fringes being mostly speckled on both wings, and differing by the ♂ being coloured like the ♀, i. e. dusted with red-brown. The metallic lines are above before the border quite thin, often only the distal line is preserved here, and quite faintly. South Brazil, preferably sitting on yellow compositae so persistently that one may take it away with the poison-glass, if done cautiously. — **zama** Bat. (134 a) from the Amazon is above more rusty brown, the leaden lines more intense, the spaces between the veins parted by dark; the under surface reddish-fawn-coloured. — **candiope** Dre. is above more greyish-brown, beneath red-brown, on the whole larger; from Colombia. — Common.
- argyrea*. **Ch. argyrea** Bat. resembles the preceding, but above it is still darker than *candiope*, with indistinct dark dots above. The fringes are not white-speckled, there are on those of the forewings at most few white dots; the space between the silvery lines is not red-brown, but dark brown. From Teffé; perhaps only a form of *zama*. — **aerigera** Stich. seems to approximate this form, but it is beneath dull yellowish-grey and the proximal silvery line is cut through by the veins. South Brazil. Unknown to me.
- jessa*. **Ch. jessa** Bsd. is a species which is said to originate from „Brazil“, unknown to me; there does not exist any description of it; STICHEL places it near *hermodora*; according to the figure it might belong to one of the species already quoted.
- hermodora*. **Ch. hermodora** Fldr. (134 b) is a small species from Colombia, Venezuela and Panama. It greatly approximates *anius*, but the under surface is here not of a lustrous blue, but like the upper surface, except that there is beneath only 1 silvery line. Not rare.
- thedora*. **Ch. thedora** Fldr. (134 d). Above similar as *anius*, but the proximal metallic line on the hindwing is expanded to a band being broader in northern specimens, narrow in southern ones. Brazil, Bolivia and Peru.

— *stilbos* *Stich.* (134 d) is the representative of the species from Colombia, in which the proximal metallic *stilbos*, line is broader also on the forewing and, on the hindwing, so broad that it is partly confluent with the distal one. — On compositae common.

Ch. panurga *Stich.* has an under surface similar to that of *anius*, but it is considerably larger and *panurga*, has only 1 silvery line and white fringes; the upper surface is blackish-grey with a blue lustre, similar to *hermodora*. I do not find the patria being stated.

Ch. lypera *Bat.*, from the Upper Amazon, has already the size of the following form and also its *lypera*, dark brown upper surface; the black discal spots are partly confluent to a median line, the reddish distal marginal band is defined by a silvery line, traversed by a row of dots. Upper Amazon; very closely allied to *chaonitis* (134 d).

Ch. chaonitis *Hew.* (134 d). Very similar to the preceding species, but instead of the black line formed *chaonitis*, of fine streaks, a sinuous nebulous band runs through the centre of the wings. From Guiana to Bolivia.

Ch. chelonis *Hew.* stands in the middle between *chaonitis* and *epijessa*. The distal silvery line is ab- *chelonis*, sent altogether or it is exhibited only in single, small silvery scales, the proximal line being also duller. Also the colouring forms the intermediary between that of *chaonitis* and *epijessa*, being in specimens from the lowlands (Rio de Janeiro) yet rather violettish-brown, in those from the highlands more dark brown. Apparently very rare; specimens like those figured by HEWITSON are not known to me at all, but only such forming transitions to

Ch. epijessa *Prittw.* (= *calicene* *Hew.*, *calinice* *Stich.*) (134 b, as *chelonis*) from the summit of the *epijessa*, Corcovado and from the Organ Mountains; here, however, the ground-colour turns entirely fox-coloured, the silvery lines are entirely extinct beneath, while above they are so only here and there, the black dots in the marginal band are finer, but owing to the lighter ground-colour more prominent than in typical *chelonis*. Moreover both forms, exhibiting probably differences of the habitats (? elevation), are very closely allied to each other, but the ♂ of *chelonis* has broader forewings. — As a smaller, darker form from the south (Espiritu Santo) **charis** *Hew.* may be considered, in which the proximal silvery line is sometimes fairly well *charis*, preserved, but sometimes also hardly recognizable. This is probably also the place where **azora** *Godt.* belongs, *azora*, which is unknown to me, although I collected numerous *Charis* to be inserted here in its patria South Brazil; it may be only a subrace of *Charis charis*.

Ch. velutina *G. and S.* (134 c) has the shape of *chelonis*, but a darker, almost black colouring which, *velutina*, in the ♂, shows beneath a bluish tinge. Recognizable by the proximal metallic line being irregular, several times interrupted. Central America to Colombia. — **iris** *Stgr.* belongs hereto, according to the description, *iris*, though nothing is mentioned regarding the course of the proximal silvery line; it is denoted to be „the most closely allied to *cleonus* or *zama*“. *iris* is unknown to me; from the Chiriqui.

Ch. cadytis *Hew.* (134 c, as *cadytes*). Easily recognizable by the proximal silvery line being shaded *cadytis*, orange-yellow above at the costa. South Brazil, Paraguay. — **acroxantha** *Stich.* (134 d), likewise from South *acroxantha*, Brazil, is said to have „transformed the red submarginal stripe of the forewing to an ochreous-yellow, oblong subapical spot“; but as the author declares not to be able himself to tell whether our figure represents one or the other form, the name is probably better to be abolished.

The following species, mostly from North America, deviate from those enumerated so far in several details (genus *Calephelis* *Gr.* and *Rob.*); they have somewhat more obtuse forewings, but nearly always distinctly the silvery lines of the *Charis*-species.

Ch. borealis *Gr. and Rob.* (134 c). Above dark brown with very indistinct silvery lines, the proximal *borealis*, one being irregular and often interrupted. Under surface reddish-yellow, the discal, dark dots arranged in 3 or 4 arcuate rows. United States, more to the east and rare.

Ch. nemesis *Edw.* is presumably only the western representative of the preceding, from more arid *nemesis*, districts of Arizona and South California, considerably smaller (only as large as *caeneus*); across the middle of the wings above runs a dark, angular shade, more distinct than in *borealis*.

Ch. australis *Edw.* (= *guadeloupe* *Streck.*) (134 b) is likewise very closely allied to the preceding, but *australis*, it has darker markings than *nemesis*; the brown median band is more prominent, the wings are without the white dots of the fringes exhibited in *nemesis*. Mexico, Texas. — **costaricola** *Stgr.* exactly corresponds with *australis*, as it flies in some places of Mexico (Misantla). — **fulmen** *Stich.*, like the preceding from Costa Rica, *fulmen*, is unknown to me; it is said to have the form of *iris*, but a black band across the middle of the wings and speckled fringes. Under surface light rusty brown.

Ch. caeneus *L.* (= *pumila* *Bsd.*, *virginiensis* *Gray*) (134 c). The name is assigned to a somewhat du- *caeneus*, bious species of LINNÉ, as which, however, the butterfly belonging here was generally considered, although the name was several times misspelled as *caenius*, *cenea*, *ceneus*, *cerea* etc. Fresh specimens exhibit the brown, black-spotted upper surface finely strewn with isolated blue, somewhat metallic, small silvery scales being

united to groups at some of the small black spots and forming beneath (sometimes also above) two lines parallel to the border. The small silvery scales are much too fine to be reproduced on a figure. Not rare in Florida; to the north as far as Virginia, to the south as far as Texas. — *argyrodines* *Bat.* (134 b) is the South American form, darker, sometimes above almost black, the ♀♀ also larger; the upper surface dotted more distinctly, the silvery lines of the under surface more prominent, the proximal one running also somewhat differently. Between the ranges of the two forms there occur intermediate forms, as for instance *laverna* *G.* and *S.* from Mexico and Central America, with a somewhat more pointed apex of the forewing, and *nilus* *Fldr.*, from Venezuela, with a more deeply coloured upper surface, a grey macular marking and dull-lustrous leaden lines. — The forms can neither be strictly separated from each other nor be arranged according to patriae. The animals rest spread out, as if pinned, on yellow compositae resembling our *Leontodon*, close at the soil, and can be taken off with the poison-glass. On being chased away, they fly beneath the nearest leaves of the bush and soon return to their flower again. Very common. — Regarding a species unknown to me and not recognizable according to the description, *azora* *Godt.*, which is said to originate from South Brazil, though I did not discover it, I doubt whether it is allied hereto as the southernmost form, or — as STICHEL wants — to the South Brazilian *epijessa*, resp. *calicene*, where we have mentioned it. — *xanthosa* *Stich.* (142 g) is certainly allied hereto, a bright red-yellow form, the silvery scales are presumably extinct; type from the Coll. SCHENCK VON SCHWEINSBERG at Darmstadt, now in the Berlin Museum, presumably from South Brazil.

aphanis. **Ch. aphanis** *Stich.* (142 g) from Uruguay is larger and of a grey ground-colour.

ocellata. **Ch. ocellata** *Hew.* (134 b). I was not able to find the type in HEWITSONS collection. It seems to be an aberration of a *Charis*, in which the silvery lines are absent and the red-brown, black-dotted band lying otherwise between them has turned a chain of eye-spots in which single eye-spots are especially distinctly prominent. It is scarcely a *Symmachia*, as HEWITSON supposed; much rather an unfringed *Ch. zama*. From Venezuela.

64. Genus: **Crocozona** *Fldr.*

The structure of the body, the very delicate, outside broad wings with a long-stretched apex and a very much rounded border, the metallic lines or small scales ally this genus immediately to the *chaonitis*-group of the preceding genus. The inner margin of the forewings is almost as long as the costal margin, the hindwings are very broad. The colouring is black with scarlet or orange-red bands which are partly bordered in metallic lines. Only 3 or 4 species are known occurring in the northern part of South America, where they are not rare; FASSL found them early in the morning drinking from the dew on the leaves.

caecias. **C. caecias** *Hew.* (134 d, e). Both the wings are traversed by a scarlet transverse stripe running rather parallel to the border. Beneath it is in the ♂ greatly widened and tapering at both ends. Bolivia, Peru and on the Amazon; near Pozuzo (Huanuco) and on the Chanchamayo at an elevation of up to 1000 m not rare.

arcuata. — **arcuata** *Godm.* (134 e) deviates by the red stripe of the forewing running more inwardly towards the costa. Colombia, not rare. The red stripe varies, moreover, according to the finding-places not inconsiderably in width, particularly beneath.

pheretima. **C. pheretima** *Fldr.* (= *caciparis* *Hew.*) (134 e). The red stripe of the forewing lies obliquely, that of the hindwing is absent. On the under surface the whole disc of the forewing is red as far as to the base. In Colombia, in some parts not rare; taken by FASSL in December in the Canon del Gallo, at an elevation of 1600 m, and near Muzo (1500 m).

fasciata. **C. fasciata** *Hpfgr.* (= *clusia* *Hew.*) (134 e). Larger than the preceding; the spot of the forewing is shortened to a more transverse oblique spot. Peru and Bolivia; La Merced in August and September.

65. Genus: **Astraeodes** *Schatz.*

A comparatively large butterfly deviating entirely from all the other *Erycinidae* in its exterior, but distributed over a great part of South America, forms this genus. The veins do not differ essentially from those of *Baetis* and the other allied groups. The body is delicately and gracefully built, the wings are very broad, with a metallic line in front of the border. Nothing has become known to me with respect to its habits.

areuta. **A. areuta** *Ww.* (128 i). Orange-yellow, with 3 dark transverse stripes, a golden line before the border and a row of dots in front of this. From East Brazil through the Amazon Valley to Peru and Bolivia. The variation of the different finding-places refers to the more lemon-coloured or pale ground-colour, to single dark spots before the border of the hindwing beneath, and the thickness of the transverse stripes. Everywhere rare.

66. Genus: **Amblygonia** *Fldr.*

After eliminating the species placed here by FELDER, the name of the genus remains for the following species. A tiny, square-built butterfly with a robust body and broad wings traversed by a yellow band. Silvery lines are absent; remarkable are 4 larger spots of the wings occurring in the ♀ — a form of the sexual dimorphism being otherwise not common.

A. amarynthina *Fldr.* (= monogramma *Bat.*, barzanes *Hew.*, ♀ = quatrinitata *Btlr.*) (132 h). A small *amarynthina*. species. Blackish brown with a small orange-yellow, above often darkened median band, the much rarer with one light yellowish-white dot in front of the middle of the distal margin on each wing. The ♂♂ are not rare in almost the whole of South America, from Argentina to Colombia. The band varies considerably in width and intensity of colouring, but it is in the ♂ beneath always broader and brighter than above.

67. Genus: **Amarynthis** *Hbn.*

This genus has likewise only one, very singularly coloured species. Larger than the preceding species, less robustly built, the wings very delicate; the veins deviate from those of the *Amblygonia* only by the 3rd subcostal vein not rising immediately before the cell-end, but immediately behind it. The species forming this genus is very widely distributed.

A. meneria *Cr.* (132 f). Black with a narrow red transverse band and sparse light, small dots: *meneria*. in the cell of the forewing a red cuneiform streak, behind it a small red spot. — In **superior** *form. nov.* (132 g) *superior*. flying near Humayta and lying before me in great numbers, the red band, particularly beneath, is more than twice as broad and the dots are of a bright white, larger and increased; the form itself is very large. — In contrast with it, ab. **maecenas** *F.* (132 g) is without any small white dots. A form being especially in the female sex extremely broad-banded and rather small originates from Nouveau-Chantier in French Guianais *maecenas*. **coccitincta** *form. nov.* (132 g), but already in Cayenne there occur again narrow-banded specimens. This character is local, but not temporal, for I possess homogeneous specimens from April, October, December and February. — **stenogramma** *Stich.* (132 g) contrasts with *coccitincta* by the red band being here as thin as a *stenogramma*. thread, even extinct in some places; from Ecuador, where, however, there occur also specimens hardly distinguishable from Peruvians. — **micalia** *Cr.* (132 f) is the common form living in almost the whole northern *micalia*. part of South America, with a distinct, unabridged, but moderately broad band, in which there is in the cell-end a small red spot isolated from the basal streak, which is confluent with the latter in ab. **conflata** *Stich.* *conflata*. *meneria* is not so common as we might be induced to believe according to the numerous specimens in the collections (before me are about 300); but it is one of the most conspicuous butterflies, being equally keenly collected by European and native collectors. — I call the reader's attention to a strange coincidence: at the same place ((Humayta on the Amazon), where *A. meneria* exhibits a broad, coloured band and a conspicuously copious white dotting, the same symptom occurs also in another, but very distantly allied *Erycinidae* (*Riodina lysippus* L.) *).

68. Genus: **Exoplisia** *G. and S.*

This genus was formerly united with the preceding to which it is very closely allied, but its members have somewhat shorter palpi. Certainly the total appearance greatly deviates from that of the *Amarynthis* by the entirely different colouring, but the anatomical structure makes it doubtful whether *Exoplisia* is to be separated from *Amarynthis*. From the following *Nelone*, *Exoplisia* is separated by the finer clubs of the antennae, the appressed palpi, the shape of the wings, particularly the stretched costa of the forewing, the fringes at the anal part of the hindwing being prolonged to a regular beard. Only one species.

E. hypochalybe *Fldr.* (= praxithea *Bsd.*) (132 g). Above dark brown, beneath of a lustrous light blue, *hypochalybe*. with black veins; on both surfaces numerous straight black transverse stripes. Reported from Central America to Peru. — **muscolor** *Weeks* (132 h) differs scarcely above, beneath, however, the distal transverse stripe running parallel to the border of the forewing is absent. Bolivia. Not rare. *muscolor*.

69. Genus: **Nelone** *Bsd.*

Distinguished from the *Exoplisia* by the projecting palpi, the more strongly clubbed antennae, the quite different shape of the forewings exhibiting an arched distal margin, a curved border, a rounded anal angle and a longer proximal margin, and by the absence of a regular beard at the border of the hindwing, where only longer fringes are formed; the marking is quite different, the veins exhibit metallic rays before their termination, the fringes are speckled. As the species are not congeneric with *hypochalybe*, this being,

*) This symptom which has presumably nothing to do with mimicry, is denoted in the zoology as a local character of variation.

however, the type of *Nelone* to which they are transferred in STICHELS catalogue, a new name for the genus would be necessary, if *Nelone* would give way to the (dispensable) *Exoplisia*.

cadmeis. **N. cadmeis** Hew. (132 h). Above sooty brownish-grey, more darkly clouded, beneath of a steel-blue reflection, on both surfaces with black transverse stripes, with a row of dots in front of the border and, on the forewings, speckled, on the hindwings, white fringes. A series of comma-like streaks in front of the distal margin are distinct particularly on the hindwing. Panama to Peru and South Brazil. Rare.

incoides. **N. incoides** Schs. (= *myrtis* Drc.) (132 h). Scarcely half as large as *cadmeis*; above similar, but the fringes of the hindwing likewise speckled, the streaks in front of the border shorter and noticeable only in a certain exposure to light. Beneath like above, not steel-blue. North Argentina, the adjoining Bolivia and Peru; the figured specimen from Tucuman (North Argentina).

hypochloris. **N. hypochloris** Bat. has the size of *cadmeis*, white fringes being scarcely speckled on the forewings; also the upper surface of it is dark steel-blue, with black markings; beneath like *cadmeis*, without the small black transverse streaks of the latter, but the whole surface of the wings darkened except the distal marginal part being of an intense blue lustre.

70. Genus: **Callistium** Stich.

In the structure of the body it approximates *Amarynthia*, but the shape of the wings is quite different. Undoubtedly allied to *Lasaia* from which it forms the transition to *Charis* as which the only species was originally described. Head uncommonly stout with protruding, furry eyes. The veins do not exhibit any deviations. In its exterior similar to the preceding genus. Only 1 species.

cleadas. **C. cleadas** Hew. (135 i) resembles *N. cadmeis* so much that STAUDINGER took it to be the ♀ of it; but the ♂ is beneath not blue, but shows the same colouring and marking as above. The transverse streaks are thicker than in *N. cadmeis* and differently arranged. On the figure (according to a specimen from Onoribo) we see very distinct white costal spots which, however, are absent in specimens from other districts. Guiana, Amazon. Rare.

71. Genus: **Lasaia** Bat.

Of the shape of *N. cadmeis*, but the lustrous blue colouring is exhibited here on the upper surface, while the under surface is marbled brown and grey; ♀ above greyish-brown. Head and thorax are robust, the abdomen short and small, the antennae long, scarcely thickened at the ends, the wings slightly dentate, particularly the hindwings. Costa of the forewing somewhat curved. The butterflies fly in day-time on flowers, where they sit with their wings spread out horizontally, and they come to wet places on the road; the blue colour glistens brightly in the sun, just like the *Tharops* in the company of which the *Lasaia* are often found. Like the *Charis*, they belong to the more common species. As they sit very tightly on the flowers, they are easy to capture as soon as they are drinking.

meris. **L. meris** Cr. (135 g). Recognizable by a white spot at the middle of the costa on the upper surface of the ♂ hindwing, in which there is mostly (not always) a small black dot. The typical, smaller, darker form being brightly coloured beneath inhabits the district from Mexico to the Amazon; the larger form being beneath more unicolorous, **arsis** Stgr. (135 g), goes from there to the south as far as Paraguay, Bolivia and Peru. The ♀♀ are above smoky-grey with a slight greenish tinge. — Not very common.

sula. **L. sula** Stgr. Almost exactly like the preceding, though more sparsely marked in black; the costal area of the hindwings above dull honey-yellow. Mexico to Colombia. The ♀ is not before me.

agesilas. **L. agesilas** Latr. (135 g, h). Above not so very black as the preceding, the small black transverse streaks more united to chains, the costa of the hindwing without a white spot, blackish. The ♀♀ are unicolorously dark grey, on both surfaces very similar to *Call. cleadas* (153 i). South Brazil and Paraguay. —

narses. **narses** Stgr. (135 h), from the Amazon to the north as far as Central America, has a more blue than green ground-colour of the ♂♂ and a black half-band behind the cell. — Common; nor are the ♀♀ drinking from blossoms like the ♂♂ rare. The butterfly figured by us t. 135 i as „*sessilis*“, differing from *narses* only by a greater regularity of the half-band behind the cell of the forewing and a clearer, less black striated discal part of the upper surface of the ♂, is not that species, but merely the Mexican form of *narses* which needs scarcely be denominated specially. Whereas

sessilis. **L. sessilis** Schs. (142 f) which can probably scarcely be separated from *sula*, is smaller, above more obtuse and more violettish-blue, the small black transverse streaks being very regularly arranged. It has a characteristic under surface being dirty fawn-coloured in the ♂, both the wings are traversed by a faintly iridescent, mother-of-pearl white band. Mexico, near Misantla and Guerrero common.

moeros. **L. moeros** Stgr. (= *rosamonda* Weeks) (135 h, as *pura*). The species is larger and of a brighter bluish-green reflection than the preceding, the black streaks finer, regularly united to rows, the under surface purer and more one-coloured, the distal part without any black speckles. Peru. — **kennethi** Weeks (135 i) from

Bolivia to South Peru has the wings above traversed by regular lines, particularly the hindwing is very much marked. — **merita** Godm. (135 i) has no more black markings on the hindwing, except a row of dots in front of the border; the under surface is tinged reddish; from Coroico (Bolivia).

L. oileus Godm. (135 h). Only half as large as most of the other species. Above dirty dark-brown, clouded irregularly, speckled in black, before the apical part of the costa 2 very small whitish vitreous spots. Beneath in the costal part of the forewing blackish, otherwise dull bluish-white, with dark speckles. In the (larger) ♀ the ground-colour shows a yellowish-brown hue. Widely distributed, probably at home in the whole tropical South America, but rather rare.

72. Genus: **Amphiselenis** Rôb.

An isolated species which is sufficiently characterized by the shape of the wings. The apex is prolonged in the shape of a sickle, and the middle of the border exhibits an obtuse, lobular tooth. In the exterior the animal greatly resembles certain *Achlyodes* with which it corresponds also in the colouring.

A. chama Stgr. (128 h). Dark-brown, the forewings with indentations at the apex, the inner angle, before and behind the middle of the border; the hindwing with an obtuse tooth; both wings are crossed by dark nebulous lines, the distal one of the ♂ beneath being faintly metallic. The ♀ is above more brownish yellow, beneath yellowish, almost entirely without metallic lines: in the Cauca Valley in Colombia and in Venezuela; but not common.

73. Genus: **Calydna** Dbl.

The essential difference of this genus from most of the other genera of the *Erycinidae* consists in the constancy of its forms, resulting in the specimens of one species, even from very remote habitats, not exhibiting any differences. I consider this persevering adherence to the typical form to be an effect of the great power of flight and a reduced adherence to localities. The *Calydna* are robust animals with strong wings and a power of flight and diffusibility comparable with that of the Hesperids of which the *Calydna* remind us also in their habits. They have, moreover, the habits of the other *Erycinidae*, coming to wet places and blossoms, they have an almost buzzing motion of the wings and a compact shape. The antennae are of medium length with a feeble club, the head is broad with a flat forehead beyond which the palpi do not project, the thorax is in many species, such as *caieta*, stout almost like in night-butterflies and decorated with variegated markings. The wings are often densely dotted and marked with transparent spots, the legs are rather short; in the forewings only the first subcostal vein branches off before the cell-end out of which the 2nd and 3rd rise. — In the hindwing the veins do not exhibit any deviations; frequently, however, the anal part of the hindwing is slightly lobate and the apex of the forewing produced. MENGEL includes 29, STICHEL 24 species in this genus.

C. thersander Stoll (135 i, k). One of the largest species, blackish-brown, marbled in slate-blue, spotted darker, the forewings with small white vitreous dots, the hindwings in the ♂ with a sky-blue, in the ♀ with a slate-blue distal-marginal part. Guiana and Brazil. Not common.

C. charila Hew. (135 l). The ♂ resembles the *thersander*-♀, but the small vitreous spots in the forewing are somewhat larger, and the blue united to festoon-like arcuate lines, particularly in front of the border. The ♀ is quite different, similar to the ♀ of *caieta* (135 l), but in place of the uniform yellow spots of the latter there appear small fenestrae bordered by red-brown and alternating with opaque red-brown spots, between which blue-metallic intermediate spots are embedded. Upper Amazon, as far as into Peru (Pachitea); rare.

C. caieta Hew. (135 l). The wings are densely covered with whitish-yellow (♂) or honey-yellow (♀) spots; beneath like above, the spots slightly larger. Reported from the Upper Amazon; before me are typical specimens of both sexes only from Venezuela (Rio Caura, Suapure). Rare.

C. chaseba Hew. (136 a). On the upper surface the reddish iron-grey ground-colour is crowded with white vitreous dots which turn to streaks in the cell of the forewing. Beneath the hindwings are dusted with a mealy white colour. The ♂ is almost exactly like the figured ♀, but the small spots are a little finer and the forewings somewhat more pointed. Before me are typical specimens only from South Brazil (Rio de Janeiro, Espiritu Santo), but it is described from the Amazon. Rare.

C. punctata Fldr. (136 a, as *punctula*) resembles the preceding species, but it is smaller, the ♂ above jet-black, the ♀ yellowish-brown, the small dots fine like the stings of a needle, the under surface not powdered in white. Ecuador, Peru, Bolivia. The finding-place „Santa Catharina“ is probably due to a confusion with the preceding species. Less rare. It reminds us of *Cremna actoris*.

C. calamisa Hew. (135 l). ♂ black with bands and spots of a magnificently deep-blue lustre, between them white vitreous dots. Under surface dark brown, finely striated and chased, the small vitreous spots here of a mother-of-pearl lustre. ♀ entirely different, on both surfaces like the ♂ beneath, copiously striated; the small vitreous spots are somewhat larger. The ♂ somewhat reminds us of *Cremna meleagris*, just like *Calydna caieta* of *Cremna eucharila*. On the Amazon, from Santarem to Peru.

- lusca*. **C. lusca** Hbn. (135 k). ♂ similar to *charilla*-♂, smaller, the forewings with some larger vitreous spots at the costa, the hindwings angular in the middle of the border. ♀ similar to that of *calamisa*, but the small vitreous spots scarcer and in some places larger, the ground-colour intermixed with red-brown. Colombia to Peru. — *venusta* G. and S. is the northern form going as far as Mexico; here the ♂ is more brightly marked, the fenestrae larger, the black ground-colour more intermixed with lighter bows. ♀ brown, otherwise like the ♂. Rare.
- euthria*. **C. euthria** Ww. (135 k). Quite similar to the preceding, but scarcely more than half as large, much more unsteadily marked, on each wing only 1 larger vitreous spot. Amazon; some more finding-places are doubtful.
- micra*. **C. micra** Bat. approximates the preceding, is velvety brown, irregularly speckled in brown and spotted in black, before the border a number of black, brown-tinged spots are arranged to a band. Numerous vitreous dots, those in cells of the wings larger, as well as some near the apex. Amazon; rare.
- sturnula*. **C. sturnula** Hbn.-G. (135 k). Similar to the preceding, larger, the dark-brown ground-colour exhibits numerous red-brown embeddings, the forewing behind the cell with a larger vitreous spot and several dots as fine as the stings of a needle. Guana to North Brazil. — *hegyas* Fldr. from Central America and Mexico chiefly differs by the small white spots being not so distinctly prominent. — Rare.
- sinuata*. **C. sinuata** Fldr. This species described from Actajac in Mexico is said to be like *hegyas*, but smaller by one third, with a somewhat sickle-shaped apex of the forewing and a dentate border; the hindwings more gnawed out, the colouring above more dark ashy grey, the fringes speckled in a dirty white.
- calyce*. **C. calyce** Hew. (135 k). Differing from the preceding by the basal and distal parts of the hindwings being brownish-yellow in the ♂, more honey-yellow in the ♀, the centre being dark, though decorated with several small vitreous spots. The under surface similar to the upper surface. Amazon; we figure it from Santarem.
- cabira*. **C. cabira** Hew. (135 k). ♂ black, ♀ brown, both recognizable by the two white vitreous spots behind the cell-end being joined to an oblique band. Amazon. Not common.
- cephissa*. **C. cephissa** Hew. This species from the Upper Amazon has on a blackish-brown ground honey-yellow spots in, behind and below the cell-end as well as before the anal angle of the forewing and behind the cell-end of the hindwing. — Before the distal margin a series of fine vitreous dots, as small as the sting of a needle. The under surface somewhat resembles that of *Apodemia erostratus* (141 a) or of certain *Phyciodes*, but it has no brownish-yellow at the base of the wings. From the Upper Amazon.
- maculosa*. **C. maculosa** Bat. Unknown to me; is said to have the shape of *cabira* (135 k), but a less produced apex of the forewing and a less angled border of the hindwing. Above fawn-coloured with many dark square spots in a yellowish-brown corona and many small whitish spots, one of which is in each cell of the wings, below the rising of the first median vein, and a series of 7 or 8 behind the cell. Fringes darker and with lighter brown speckles. Likewise from the Upper Amazon.
- caprina*. **C. caprina** Hew. (136 a). Larger than the preceding, but blackish-brown with a white oblique oval of the forewings, beneath fawn-coloured, with a darker tinge, at the costa of the forewing and the inner margin of the hindwing lighter and striated in black. North Brazil.
- catiena*. **C. catiena** Hew. Similar to the preceding, but the upper surface unicolorously dark brown, except the white oblique oval of the forewing. Beneath dark fawn-coloured, striated dark and with some scattered black dots. Apex of the forewing pointed, border not gnawed out. Brazil.
- carneia*. **C. carneia** Hew. (136 b). Very near to *cabira*, but the white transparent band formed by the double-spot behind the cell-end is angled, as the lower spot extends towards the border. Larger than *cabira*. Beneath at the base of the forewing a reddish-yellow spot. Amazon. Rare.
- catana*. **C. catana** Hew. (136 b). In the ♂ the two white fenestrae of the forewing are moved apart, so that the black ground-colour passes through between them. On the hindwing appears a small white subbasal band. In the (brown) ♀ the two spots of the forewing as well as the spot near the base of the hindwing are considerably smaller. Venezuela and the adjoining district of the Amazon (Humayta).
- hiria*. **C. hiria** Godt. (= *calitas* Hew.) (136 a). The forewings exhibit only yet a white square spot and above it, below the costa, another dot, the hindwings near the base a bottle-shaped spot. In the ♀ all the spots are smaller and stand on a yellowish-brown speckled ground. Widely distributed. Specimens from Peru (Pachitea) are considerably larger than those from the Amazon or from farther to the north. Rare.
- cea*. **C. cea** Hew. (= ? *zea* Schs.) (136 b). Forewings like in the preceding species; but the hindwings have no white basal band, but in the ♂ a sky-blue distal margin. Before me are only ♂♂ from Bolivia.

74. Genus: **Emesis** F.

Whereas the preceding genus was composed of almost unexceptionally rare butterflies, the *Emesis* consist of almost universally common species. In the Erycinidae, rarity and commonness may very well be connected with their habits, whether they fly in day-time or not. In single *Emesis* there prevails the habit of hiding beneath leaves during day-time, and I have, for instance, often beaten out *Emesis fastidiosa*. *E. mandane*, however, is always found on blossoms and swarms in the hot sun of the forenoon. *E. fatima* mostly rests beneath leaves, but it often comes forth to visit flowers. When, at one occasion, a *fatima* ventured to come out of its hiding-place within sight of me, it was immediately pursued by a *Colaenis julia*-♂ dashing upon it and so unmercifully belaboured with its feet and wings, that its delicate wings were broken and the poor animal at last lay in the dust incapable of flying. On the whole, we may say that the stout *Emesis* (such as *mandane*) are good flyers, the slender ones (such as *fastidiosa*) are bad flyers. The colour of the *Emesis* is mostly brown, with a dark undulate marking, the antennae are long and stretched straight forward by the living animal. The moderately long palpi are so closely appressed to the forehead, that their tips are not to be seen from above. The legs are strong, but not very hairy, the wings entire, with a frequently produced or sickle-shaped apex, in the veins there is no difference from the general type of the Erycinidae. About 50 forms have been distinguished.

E. lucinda. The typical species is the largest of the genus and at the same time one of the largest Erycinidae altogether. — The most common form in the European collections is the South Brazilian *fastidiosa* Mén. (136 d). Above dark-brown, undulated in black; the ♂ has a rusty-yellow apex and a red-yellow under surface, the ♀ a white-spotted apex and a pale-yellow under surface; this under surface is in both sexes richly decorated with brown transverse streaks and chains of bows. — *aurimna* Bsd. (136 d, e) from Central America to Colombia, is above more deeply black with a faint steel-blue lustre. — ab. *albida* ab. nov. (136 e) has in the female a drab upper surface which is almost as vividly marked as the under surface; from Central Brazil (Bahia). — *opaca* Stich. (136 d) exhibits in both sexes the wings very dark and without a distinct brightening at the apex; from the Upper Amazon (Iquitos, Pebas). — *lucinda* Cr. (= *dyn-dima* Cr., *lassus* F.) (136 b, c) exhibits above a blue reflection in the ♂♂ being beneath rusty-red, while the ♀ is brown with an oval white subapical spot; from Guiana and Venezuela. — *spretia* Bat. from Teffé on the Amazon is in both sexes slate-grey, at the apex of the forewing is an indistinctly defined red-brown spot which in the ♀ replaces the otherwise mostly white subapical spot. — *saturata* G. and S., described according to 1 specimen from South Mexico, is above bright and intensely brown, in the basal part are some indistinct transverse lines, in front of the border a broad, lighter line; beneath rusty-red, ruled with black lines, with a similar submarginal band. The palpi are rusty-red. They are recognizable by the colour of the upper surface. — *liodes* G. and S. is smaller, the ♂ above quite unicolorously dark brown with a scarcely noticeable transverse marking, the ♀ with a dull bone-yellow subapical spot of quite the same shape as in the ♀ of *lucinda* (136 c). — *eurydice* Godm. (136 c) is a form from Ecuador the ♂ of which is above preponderantly bluish-grey beneath claret-coloured, on both surfaces with very dark markings; the ♀ is above dull brown, beneath yolk-coloured. — *castigata* Stich. from Peru and Bolivia does not differ considerably in the female above from specimens of *lucinda*, but it is darker and beneath more reddish; ♂ usually larger than the typical subspecies (*lucinda*), with the apex of the forewing being produced somewhat more pointedly. — *lucinda* and its forms are rather common, at open spaces in the woods, where they sit beneath leaves.

E. tenedia Fldr. (136 g). ♂ of the shape of the preceding species, but the upper surface mostly brown; the ♀ may be quite ochreous brown, but it may also exhibit on the forewing a whitish or yellow, band-like brightening which is differently shaped, mostly also differently coloured at every habitat (= ♀-form of *fasciata* Strd.). Beneath both sexes exhibit, instead of the coherent transverse lines of the preceding species, more scattered comma-streaks. From Mexico across Central America and the eastern parts of South America as far as South Brazil and Paraguay. Mexicans as well as quite southern animals are often much smaller than the figured ones. The species varies greatly. — *melancholica* Stich. is said to be larger than the typical form, above unicolorously intensely smoke-brown, the undulated transverse lines not very conspicuous, the median area scarcely darker, under surface lighter rusty brown, the transverse lines more distinct. South Brazil. Unknown to me. — *lupina* G. and S., described from Central America, though not bound to a certain district, shows a more grey upper surface, Mexicans from Misantla are of a bright red, the specimen figured by us forms the intermediary between the two. — *ravidula* Stich. is denoted by its author as a „faintly differentiated subspecies“, „on an average lighter, dull greyish-yellow to pale smoky-brown, with a somewhat rounder contour of the hindwing“. In the south of the range. — *cilix* Hew. described from Ecuador is smaller than *tenedia*, with more pointed, almost sickle-shaped forewings, a uniformly sooty-brown upper surface and a reddish-yellow under surface; the dark transverse stripes on both surfaces scarcer than in *tenedia*. — *sinuatus* Hew. with still more curved borders of the wings, likewise from Ecuador, may belong hereto.

E. angularis Hew. (136 g, as *angulata*). Recognizable by the wing-contour; the forewing somewhat concavely indented below the pointed apex, and the middle of the border on both wings projects geniculatedly. Ecuador, Bolivia and Peru.

- vulpina*. **E. vulpina** *G. and S.* is based upon 3 ♂♂ from Presidio in Mexico that are said to resemble *tenedius*, but to be of a brighter, red colour, almost like *fatima* (136 f). The wings above are scarcely noticeably ruled, the marking beneath is likewise obsolete.
- mandana*. **E. mandana** *Cr.* (= *polymenus F.*, *arminius F.*, ops. *Latr.*) (136 e). Entire with regularly shaped wings, above dark red-brown, beneath brownish-yellow with dark transverse streaks being united above to transverse lines. Specimens before me from Mexico (Guerrero) and those which I captured near Santos in South Brazil exhibit but quite faint differences (Mexicans are marked somewhat more distinctly). ♀♀ from Muzo and the adjoining Central America sometimes have a slightly geniculated border of the hindwing and more pointed forewings (*angulariformis Strd.*). — *furor Btlr. and Drc.* and *aurelia Bat.* from Maranhão likewise do not exhibit any difference worth mentioning. — *diogenia Prittw.* (136 e) from South Brazil are said to be smaller and lighter specimens, but it is just South Brazil where there occur especially large and dark specimens, and large and small ones are sometimes found resting on the same bush. — *mandana* is a common butterfly visiting particularly the flower-buds of blossoming bushes and flying all the year round in warm districts; from Mexico to South Brazil, Paraguay and Peru. — The ♀♀ are often considerably larger than the ♂♂. Beside typical *mandana* and *furor* there occur some more forms approximating *mandana* in Mexico; as for instance *tegula G. and S.* (136 f) which is about the most closely allied to *diogenia*.
- russula*. **E. russula** *Stich.* (136 f). Smaller than normal *mandana*, above duller and often darker, between the transverse lines „a grey, almost bluish-grey tinge“. Under surface light ochreous-yellow, the marking reddish-brown, finer than in *mandana*, the nebulous band before the border is absent, sometimes replaced by obsolete dots. The types originate from La Paz in Bolivia and from São Leopoldo in Brazil. — The marks are partly those of typical *mandana*, partly they are found in *mandana* from the most different countries; it is presumably scarcely a distinct species.
- fatima*. **E. fatima** *Cr.* (= *fatimella Ww.*) (136 f). Much more slimly built than *mandana*, with more delicate wings and of a burning brown-red (♂) or brown-yellow (♀) colouring. From Colombia to Brazil. Not rare.
- ocypore*. **E. ocypore** *Hbn.-G.* (136 g). Size and the shape of the wings of a small *mandana*, but the body much more delicate and the colouring on both surfaces dark nut-brown. Marking almost exactly as in *mandana*; Amazon, Peru. — *aethalia Bat.* from Central America and Colombia has a produced apex of the forewing and a similar anal angle of the hindwing and is beneath of a lighter colour than above; on the whole but little deviating. — *zelotes Hew.* originating from South Brazil and Paraguay has a red-brown ground-colour, similar as *mandana*; the ♀ entirely resembles a ♀ of *tenedius*, but it is more red-brown than dark yellowish brown, and the band in front of the distal-marginal part is not so very light. Whether *zelotes* is a subspecies of *ocypore* as which it has been dealt with, is doubtful.
- ovidius*. **E. ovidius** *F.* (= *fatima Cr. p. p.*, *cerea Hbn.*, *caeneus Stich.*) (136 h as *caeneus*). We choose this name of *Fabricius* being still vacant in the *Erycinidae*, because a yellowish-red *Emesis* has been undoubtedly figured by CRAMER as *fatima* and the name of *caeneus* was conferred on a small *Charis*, and therefore certainly a confusion would be inevitable. *ovidius* has, on a dark-brown ground, numerous silvery arcuate streaks which are united to a bossy chain. At the costa, before the apex of the forewing mostly a honey-yellow, light patch. From Guiana and Venezuela to Peru. Not rare.
- neemias*. **E. neemias** *Hew.* (137 a). Like the preceding species with silvery-blue arcuate streaks above, but dark blackish-brown, and easily distinguishable by the under surface being without any silver, whereas in *ovidius* also beneath the dark transverse streaks are silvery. Brazil, Paraguay, Bolivia and Peru; not common.
- poeas*. **E. poeas** *G. and S.* (136 f as *psoeas*). Recognizable by red-brown bands alternating with bluish-grey ones above. On regarding fresh specimens in the sun, we find that the upper surface is covered with single sparkling silvery scales. In specimens, where the long fringes are preserved, these also exhibit a faint lustre and are speckled, what is not to be seen on our figure. Beneath red-brown. Mexico; in the Tring Museum also from Zamora (Ecuador).
- brimo*. **E. brimo** *G. and S.* (137 a). Size of the preceding; forewing with a somewhat more pointed apex; upper surface dark brown. In the cell and the distal marginal part some lighter, faintly yellowish-brown patches, the disc of the ♂ with a cloud of a slight violet reflection. Very fine and sparse single, small silvery scales are scattered across the surface of the wings. Under surface rusty yellow, covered with dark punctiform streaks, except the distal marginal part. Colombia, and on the Chiriqui; often contained in the „Bogotá“-parcels. — *progne Godm.* (137 a) is somewhat smaller, the cloud with the violet reflection in the disc more lustrous, lighter, the distal margin of the under surface dark brown. Peru, Bolivia. Not rare.
- emesia*. **E. emesia** *Hew.* (= *yucatanensis G. and S.*) is not much larger than *progne*, has a strongly produced basal part of the costa, like a *Symmachia*, but almost exactly the colouring and marking of a *tenedius*-♀, except that the cell-end is traversed by a small bone-white band consisting of 3 adjoining spots. Mexico and the adjoining Central America; not common.

E. peruviana Lathy (137 a). Size of the preceding, but the upper surface of the wings greyish-brown; beneath the colouring of the forewings is rusty-red in the apical and costal parts, otherwise greyish-brown. The black transverse streaks and dots mostly arranged in rows. Peru.

E. temesa Hew. (137 a) is still somewhat smaller, the upper surface darker, so that the dark transverse streaks are less distinct. Distinguishable from the preceding by the bright brown-red under surface which is coloured almost like in *progne*, but darkened at the distal margin. From Ecuador. — **emesine** Stgr. *emesine*. are specimens from Pebas (Peru) with a red-brownish apex of the forewing above.

E. zela Btlr. (136 h). This common Mexican species being reported also from Colombia and Venezuela and, therefore, probably also occurring in Central America, has very pointed forewings and also a pointed anal part of the hindwing. Recognizable by the postmedian band above being brightened up in the forewing by a light greyish-brown, in the hindwing of a rusty-yellow colour. Under surface yellowish-red, similar as in *mandana*.

E. ares H. Edw. (136 h). Forewing dark brown with numerous small dark transverse bows; in the hindwing the whole costal half is of a burning red-yellow colour. North Mexico, Arizona. — **cleis** W. H. Edw. (136 h), also from Mexico and the adjoining Arizona, is lighter and more sparsely striated, but hardly different. — Here to may also belong **toltec** Reak., unknown to me, in which the costal-marginal part of the hindwing is no more rusty red, but similarly coloured as the rest of the wing. Likewise from Mexico; common.

E. cypria Fldr. (136 i) has the shape of *tenedia* (136 g), the forewing, however, exhibits a honey-yellow oblique band ending in the ♂ taperingly, in the ♀ broadly in the anal angle. North-western parts of South America; common. — **paphia** Fldr. is the northern form from Central America and Mexico, the oblique band brownish, broader, always regularly defined. In the ♀ the dark transverse markings above, at least those near the base, are less distinct and the oblique band is duller ochreous. — ab. **capnodis** Stich. (137 a) is a not rare aberration with a dull brownish oblique band of the forewing; in some places, as for instance near Onaca (Sa. Martha, Colombia), it flies together with typical *cypria*.

E. lacrines Hew. Here the oblique band of the forewing is bright yolk-coloured, a small oblong-ovate band extends from the costa to the upper median vein; the shape and size is that of *mandana*. Under surface bright brownish-yellow, towards the base greyer; ♀ similar to the ♂, duller, the oblique band more ochreous than orange-yellow. From Chontales (Nicaragua).

E. guppyi Kaye (142 a) has somewhat the exterior of a small *cypria*, but the oblique band of the forewing is here not orange-coloured, but dark brown, only quite faintly lighter than the ground-colour. On the under surface, however, the oblique band is distinctly orange-yellow on a red-brown ground. The black transverse dots only insignificant. Colombia, Venezuela; described from the Isle of Trinidad.

E. heterochroa Hpffr. (136 i). As large as *cypria* or larger, easily discernible by the yellow band of the forewing being broadened as far as near the distal margin, but being lengthways intersected by a dark nebulous band. Peru, Bolivia; not particularly rare.

75. Genus: **Siseme** Ww.

This genus contains extremely variable species. *S. alectryo* which is before me in about 200 specimens varies at every habitat in constant deviations, so that dozens of new forms might be described among the material before me consisting of far more than 1000 *Siseme* from the most various habitats. The *Siseme* are all small, elegantly marked, but mostly dark-grey coloured butterflies with a median band through both the wings. The head is broad, the forehead flatly arched, the eyes large, the palpi long but closely appressed to the head, so that they are not distinctly projecting on being seen from above. Antennae of more than half the length of the costa, gradually thickened at the ends to a feeble spindle. The *Siseme* are lively animals fond of flying in the sun on the slopes of mountains, where they come to the water in the morning and are easily taken there.

A. Border of the hindwing convex bulging out.

S. peculiaris Dre. (133 a) blackish greyish-brown; the forewings with small white oblique bands, the hindwing with a white longitudinal oval showing a different shape at every habitat. Peru, particularly on the Pozuzo not rare at altitudes of 800 to 1000 m. The white spot of the hindwing mostly extends beneath to the base.

S. alectryo Ww. (133 b). Blackish bluish-grey, in the centre of both wings a joint white fusiform band; between it and the apex of the forewing a small white oblique band being often indistinctly defined, between it and the border of the hindwing a similar, small, band-like spot; in the anal part of the hindwing 2 red, often confluent maculae. Colombia and North Brazil, as far as Bahia. — **tantilla** Thm. (133 b) has instead of the white distal spots only light grey, more linear brightenings traversing the whole hindwing as blurred lines; it also flies in Colombia, but different habitats from those of typical *alectryo*, as for instance

near Villavicencio. Here the small oblique band of the forewing is still fairly preserved; in a specimen captured by FASSL on the Rio Negro (East Colombia) also the white oblique band on the forewing is transformed into a grey line, the small fusiform band being very narrow. — *megala* *form. nov.* (133 b) is a form of almost double the size of *tantilla*, with a very distinct marking, deep colouring, and a broad median band; Monte Tolima and the Aguaca Valley. — In *spectanda* *Stich.* (133 b) the median band has turned a broad oval, the small oblique band of the forewing, however, to a small narrow stripe, the white distal spot of the hindwing only beneath distinct. Peru, Bolivia, Ecuador. — *transiens* *form. nov.* (133 b, c), a mountain-form from Bolivia, is smaller, with a still broader median spot, the small white oblique band of the forewing, which in *spectanda* is yet distinct and oval on the under surface, being here also nearly vanished. — It forms the transition to *lucilius* *Hpf.* in which the median band occupies almost the whole disc of the wing as a broad, below rounded oval, whereas the small white distal bands are absent altogether; this form is likewise found in Peru and Bolivia. — Not rare.

aristoteles. **S. aristoteles** *Latr.* (133 d). The two dark wings are traversed in the distal part by a band of short light rays which are particularly beneath distinctly prominent, in front of it a yolk-coloured median band being above and below pointed. Colombia (Monte Tolima). — In *ochrotaenia* *form. nov.* (133 d) from Loja in Ecuador this yellow band is broad and terminates broadly at the costa; — in *minerva* *Fldr.* (133 e) from the Rio Negro (Colombia) it is preserved as thin as a thread on the forewing, on the hindwing it has almost disappeared; — in *leucodesma* *form. nov.* (133 e) from the Rio Dagua (type in the Tring Museum) it is snow-white instead of yellow, in *sprucei* *Bat.* (= *nigrescens* *Mengel*) (133 e) it is shaded by grey. West Colombia. In Colombian *sprucei* the basal part of both wings is beneath light silvery blue; in *saturata* *Thm.* (133 e) from Ecuador, scarcely differing above, the whole under surface is dusted with dark (on our figure the two under surfaces of *sprucei* and *saturata* have been mixed up). Rather common.

B. Border of the hindwing between the apex and anal part drawn in or serrated.

S. pallas. This species resembles in different local forms almost all the forms of the preceding group of *Siseme*, so that on the whole the typical *pallas* corresponds with *lucilius* or *spectanda*, *pomona* with *sprucei*, *xanthogramma* with *ochrotaenia*, *albescens* with *leucodesma* etc. All the *pallas*-forms, however, are at once distinguished by the border of the hindwing being distally not round, but rather drawn in. — *pallas* *Latr.* (= *aristoteles* *Stgr.*) (133 c) is the form with a fusiform, in the middle broadly white median band; from Venezuela and North Colombia. — In *angustior* *form. nov.* (133 c), from considerable altitudes (Monte Tolima etc.) in Colombia, the median band is narrowed almost to one half, sometimes to one third. — In *pomona* *G.* and *S.* (133 c) lying before me from the Rio Negro (Colombia) the band is shaded with grey. — In *xanthogramma* *Bat.* (133 d) the median band is yolk-coloured, from the Rio-Negro in Colombia. — *atrytone* *Thm.* (133 d) exhibits half the median band yellow (Bolivia) or ochreous with a whitish brightening in the middle (Pozuzo, Peru), sometimes also nearly all white (*albescens* *Stich.*) from Ecuador and the neighbouring districts. — With respect to the width and pointedness of the fusiform median band, the species at every habitat exhibits certain, quite constant peculiarities. The butterflies are common.

neurodes. **S. neurodes** *Fldr.* (133 c). Very similar to the preceding species; smaller, recognizable by the broader red anal band and by the much more intense and longer white rays in the distal part of the under surface of the hindwings. I know this form only from Peru. — From Bolivia and Colombia, as well as from the Pozuzo (Peru) a more dark slate-blue form is known with the anal part of the hindwing being more extended and ending into a sharp tooth; to this form, *caudalis* *Bat.* (133 e), however, there are transitions found. — Common.

pedias. **S. pedias** *G.* (133 d) does not entirely belong to this genus and might form a connection with the *Ancyluris*-group. The total appearance reminds us of *pallas*, but the light patches, particularly beneath, show a bright hyacinth-blue reflection; the small red anal band of the hindwing varies in shape and width. Before me only from Bolivia; mostly from the Rio Songo. Apparently rare.

pseudopal-
las. **S. pseudopallas** *Weym.* (= *hellotis* *Thm.*) (133 b). Greatly resembles *pallas*, but the median band of the forewing is more bone-yellow, above not pointed, but broadly reaching the costa. Beneath in the distal part of the forewing instead of the band formed of rays a white transverse line. Peru. — In *hyperion* *form. nov.* (133 a) being only half as large, from Huayabamba, the median band is anteriorly greatly narrowed and terminates behind in the middle of the hindwing. Not rare.

Note. *A. Siseme* from Argentina has not become known to me. Regarding *S. hothurus* *Bg.* cf. Additions.

76. Genus: **Drepanula** *Röb.*

The genus is not closely allied to any other. The species described first was dealt with as *Lemonias*, but RÖBER combined its characteristics deviating from the *Lemonias*, already in 1892. From *Ematurgina* to which STICHEL allies the genus the subcostal system deviates essentially, the neururation corresponds rather with *Siseme* which, however, shows again a greater variability of the veins, although it undoubtedly represents

a well defined genus. *Drepanula* resembles *Baeotis* particularly by the shape of the wings, the structure of the body and the habits, though there is no close connection between the two genera.

D. calvus *Stgr.* (133 e) from Peru has a very falciform apex of the forewing and a unicolorously slate-grey upper surface; the distal margin, a median blurred spot at the costa and a costal triangle before the apex darker; in front of the border a series of white dots. Under surface marked very white, in the median area shaded in grey. Peru.

D. gerres *Thm.* (133 f) entirely resembles the preceding, above the dark clouds are more defined, the hindwings somewhat brighter. Quite different is the under surface, being unicolorously bluish-white with numerous small black dots. Colombia, before me from Muzo and Cananche.

D. lencates *Hew.* is smaller and the forewings are above quite sooty black except a small light longitudinal spot at the middle of the inner margin; the hindwings are in the middle entirely white only the base and the distal-marginal third are black. Unknown to me; may not belong into this genus; described without the patria being mentioned.

77. Genus: **Dinoplotis** *Stich.*

The genus is established for a small species unknown to me, having about the shape of the preceding genus, „but somewhat more circular hindwings“. One species from STAUDINGERS collection described from the Amazonas. In the veins of the forewings there is a conspicuous anastomosis between the costal and the second subcostal vein, in which may be seen the stunted remainders of the first subcostal vein.

D. orphana *Stich.* Size of *D. gerres*; upper surface quite unicolorously drab, only in the apical part of the forewing deeper blackish. Beneath the forewings exhibit small white spots at the border below the falciform apex and at the cell-end; the hindwings are beneath yellowish-grey, with a light median band shaded in black. From Massauary.

78. Genus: **Parnes** *Ww.*

The two small brownish-grey species belonging hereto are very much alike each other; they are above blackish-brown, beneath in the apex of each wing is a black eye-spot provided with 2 white pupils. The costal of the forewing runs for some distance together with the first subcostal vein. The animals are not common; nothing is known to me about their habits.

P. nycteis *Ww.* (138 f). This is the smaller species; fresh specimens have an entirely unicolorously black upper surface; only in much flown specimens the colouring of the under surface shows faintly through, as in our figure. This colouring is dark brownish-grey, finely striated in yellow, before the apex in the forewing and hindwing small, white-pupilled eye-spots. Panama to the Amazon.

P. philotes *Ww.* (138 f). Larger, above sooty black, beneath dark grey, with 1 large eye-spot with 2 white pupils near the apex of all the 4 wings; some more small dotted eye-spots at the distal margin of the hindwing. Guiana, Amazon.

79. Genus: **Zabuella** *Stich.*

This genus is based upon a rather unicolorously grey animal which was described as *Lemonias*, but has evident connections with *Ematurgina*. The most conspicuous mark in the animal is a very thick knob of the antenna, which is hollow in the shape of a spoon, like in an *Argynnis*. Otherwise the shape is like that of the following genus, and both these genera belong to the southern part of the neotropical region.

Z. tenella *Burm.* (138 k). Dirty greyish-brown with a series of dull dotted eye-spots in front of the border and an irregularly curved median shade across both wings. Under surface dirty grey with black-pupilled, small eye-spots near the base and the border, and a chain of dark spots across the centre. Argentina, local, but numerous at the flying-places, as for instance near la Soledad in the Misiones and at other places.

80. Genus: **Ematurgina** *Röb.*

Three species, one of them greatly deviating, form this genus. They have long, projecting palpi, feebly thickened, not very long antennae, remarkably broad wings, the forewing with a stretched costa and four-branched subcostal, the two last branches of which form a fork with a long stalk. The compact abdomen reaches the anal angle of the hindwings, though it does not project beyond it. The butterflies are not common.

E. bifasciata *Meng.* (= *mabildei* *Röb.*) (140 e). Blackish-brown, with 2 parallel, ochreous oblique bands, being several times interrupted, through both wings, and with small ochreous spots before the border. Beneath like above. South Brazil and Paraguay. — In *ochrophlegma* *Stich.* the yellow markings are expanded; Argentina. Our ♀-figure, according to a specimen from GOYAZ, forms a transition to it.

- axenus.* **E. axenus** *Hev.* (140 e). Very similar to the preceding species, the bands above broader, in the ♀ also lighter yellow. The under surface, however, not like above, but the costa of the forewing and the base are also yet yellow, so that this colour outweighs the dark one. South Brazil.
- leucotopus.* **E. leucotopus** *Stich.* This species inserted here by its author has a white discal and submedian spot of the greyish-brown forewings and white hindwings bordered in grey. The under surface has more white. We figure a ♀ from Buenavista (Bolivia), which has a small white spot in the anal angle of the forewing and a light patch in the border of the hindwing (= subsp. **emphatica** *Stich.*) (140 e). Typical specimens as they lie before me from Tarapoto (Coll. BANG-HAAS) have this light patch somewhat duller, and the white spots of the forewings are smaller.

81. Genus: **Apodemia** *Fldr.*

This genus consists of about a dozen species showing a remarkable, though only superficial resemblance with *Melitaea*. A likeness with the genus *Stalachtis* seems to be due to mimicry, though it is distinct enough to deceive even eminent experts, so that one species was described as *Stalachtis*. The genus is absent in the supertropical forest-district, occurring only from Mexico to the north and again far to the south. The veins do not exhibit any deviation from the general type of the American *Erycinidae*.

- nais.* **A. nais** *Edw.* (141 g). Reminds us of a *Melitaea* of the *didyma*-group, also beneath; a distant resemblance with our *Nemeobius* may be only secondary. Bright reddish-brown, spotted in black, behind the middle below the costa, in the ♀ mostly also above the proximal margin, small whitish spots. — The green, turban-shaped egg with an hexagonally netted upper surface yields the larva which, being full-grown, is drab, across the dorsum with whitish-yellow spots and fluffy hairs, the shape being something like that of a wood-louse, flat and posteriorly pointed. It feeds on wild plums. Pupa dark brown, fastened by the cremaster and held loosely by a belt. Mexico and the southern states adjoining to the north of it. Not rare; fond of the open country.
- mormo.* **A. mormo** *Fldr.* (= *dumeti* *Behr.*, *mormonia* *Bsd.*) (141 d). Somewhat smaller, with copious white dots on a blackish-brown ground, the disc of the forewing reddish-brown. Beneath the hindwings are almost white, with blackish markings. California to New Mexico; not rare. — **virgulti** *Behr* (♂ *sonorensis* *Fldr.*) (141 e) has above in the hindwing a reddish-yellow band and on the under surface of the hindwings intensely blackish-brown shades; South California and Mexico. — **cythera** *Edw.* (141 e) has almost the whole ground of the hindwing tinged with reddish-yellow; the white spots are enlarged and assume, particularly on the under surface of the hindwing, an oblong, more radiatiform shape. Arizona and Mexico. — **druryi** *H. Edw.* (= *druryi* *Edw.*) (141 d) is above lighter yellowish-red, the black and white spots are reduced. New Mexico. — **maxima** *Weeks* (141 e) which may perhaps deviate little or not at all from **mejicanus** *Behr* being unknown to me, is not only larger than the other forms of *mormo*, but also than the *nais* resembling it. Here the whole ground of the wings is yellowish-red, the white spots not radiatiform, but like in *druryi* bordered intensely in black, the black being united to irregular bands. North California. — Local, mostly not common.
- palmerii.* **A. palmerii** *H. Edw.* (141 e, f). Much smaller than the preceding, about comparable with the European *Melitaea asterie*. Blackish-grey, finely spotted in white, between there are small red-brown spots on the hindwing. Under surface marked like the upper, but of a dull ochreous-grey, white-powdered ground-colour. — **hypoglauca** *G. and S.* (141 e) not lying before me in nature, is reported to belong hereto *); it has above an iron-grey ground-colour, without white spotting; beneath yellowish-white, with rows of dark spots and lines. — The larva looks almost like a small *nais*-larva; on *Beleperone californica*. Western parts of the southern states and Mexico. — Local, but not rare.
- hepburni.* **A. hepburni** *G. and S.* (141 f). The smallest species of the genus; forewings reddish iron-grey, sparsely spotted in white, the under surface almost ochreous-yellow with white spots being faintly bordered in dark; differing from *palmerii* by the lighter, more reddish upper surface, a sparser white spotting and a paler under surface. Mexico, the figured ♀ from Sonora.
- walkeri.* **A. walkeri** *G. and S.* (141 f). Above grey, the bands and spots somewhat lighter, but not white; under surface with quite a faintly pale ochreous tinge. Mexico, local, but in some places very common. Specimens from Oaxaca are beneath more intensely marked in black; in those from Tehuacan the pale-yellow tinge is nearly altogether absent.
- multiplaga.* **A. multiplaga** *Schs.* (141 e). Much larger than the preceding, the spots of the upper surface of a pure white, the anal angle of the hindwing forms in the ♂ an apex provided with a fringy beard. Basal half of the hindwings beneath almost white. New Mexico. Rare.
- carteri.* **A. carteri** *Holl.* (141 a) from the Bahama Islands deviates somewhat from the other *Apodemia*, like the following species. Our figure most exactly reproduces the original. Under surface more dark greyish-brown with small blackish transverse spots in the forewing and small transverse streaks in the hindwing. In the anal angle of all the 4 wings a large, round, black spot.

* It probably belongs rather to *walkeri*.

A. stalactioides *Btlr.* (141 f, misprinted into *stalachtoides*). Forewing somewhat less pointed, other- *stalactioides*. wise of the shape of the preceding, but above the black wings exhibit white spots, with a brown base of the wings and a brown antemarginal stripe. Ground-colour of the under surface preponderantly red-brown, much more copiously and densely spotted in white than the upper surface. São Paulo, Rio de Janeiro. — **canidia** *Drc.* is the smaller, more northern form (Central Brazil) with a preponderantly black ground-colour. *canidia*. — The species is always recognizable by the abdomen being above of a silky lustrous white beginning at the third ring. It imitates *Stalactis susanna* from the same habitat. Rare.

A. castanea *Prittw.* (141 f) somewhat resembles above *Calydna punctata* (136 a) and *Cremna actoris castanea*. (126 h) with which it flies together, but the light dots are transparent like glass, not so brightly white, as they appear in our figure. Beneath something like *Zab. tenella* (138 k) of which it has also the same faint median shade of the upper surface noticeable in a certain exposure to light. South Brazil; rare.

82. Genus: **Hamearis** *Hbn.*

Butterflies with an exterior like small *Phyciodes* and certain Hesperids flying in their patria. The genus is only with difficulty separable from *Apodemia* with which it is combined by some. The body is robust in the larger species, the abdomen of the ♀♀ stout and long. In the ♂♂ the upper surface is mostly yellowish-brown with dark spots; the under surface of the hindwings is adapted to bark or stones. The palpi are long with a long, thin, styloid terminal joint projecting anteriorly beyond the head; the veins of the wings not deviating from those of *Apodemia*. They inhabit the Pampas in the south and the Llanos in the north, being mostly local and varying greatly already at short distances, but not rare at their flying-places.

H. epulus *Cr.* (141 b). This is perhaps nothing else but the *zachaeus* *F.* Above blackish, with few *epulus*. small white spots in the disc of the forewing and a dull red-yellow macular series in front of the border. Guiana. In specimens from Para also the ♂♂ exhibit much more red-brown, so that this sometimes occupies the greatest part of the disc of the hindwing. — **campestris** *Bat.* (= *propitia* *Stich.*) (141 b as *propitia*) has *campestris*. somewhat larger discal spots of the upper surface, which are also increased and all brown-red. From Itaituba and São Paulo di Olivença. — Bolivian specimens have the spots above bright light orange-coloured, almost like *erostratus*; also the under surface of the hindwings, forming in *campestris* on a violettish-brown ground in the middle a faint cloud out of tiny yellowish, mostly round spots, is in Bolivians more variegated, but more confused. — In **signata** *Stich.* (141 b) the small spots above are increased, but nearly all, also those *signata*. in front of the border, are whitish instead of reddish-yellow; South Brazil, North Argentina (Salta). — Still more white-spotted, and with another under surface (hindwings beneath whitish, finely shaded by grey and brown) are the very small **minuscula** *Giac.* (142 h) from la Rioja, in West Argentina, of which there *minuscula*. is before me a form being somewhat more variegated beneath, from San Ignacio (Misiones, East Argentina). In the open grass-districts, not rare.

H. notialis *Stich.* is known to me from *STICHELS* figure; above like *erostratus* (141 a) duller brown- *notialis*. red, of the yellowish-red band in the apical part only dull marks are noticeable, the hindwings beneath yellowish-grey, in the middle a whitish, black-tinged, tooth-like spot. Argentina.

H. erostratus *Ww.* (141 a, b). Above yellowish-red, with a blackish-brown distal part in which a *erostratus*. yellowish-red oblique band extends in front of the apex and behind it in front of the border a yellowish-red macular chain. The under surface of the hindwings exhibits on a brown ground 2 yellowish-white transverse bands converging at the proximal margin. Venezuela (on the Orinoco), Colombia, Panama, on grass-plots, very common. — Near Merida in Venezuela occurs a form of double the size, in which the light transverse bands of the under surface of the hindwings begin to be divided into large whitish spots; it is **antaeus** *form.* *antaeus*. *nov.* (141 b), presumably only an alpine form of the preceding. Type in the Tring Museum.

H. chilensis *Fldr.* (141 b). Light yellowish-red, the whole apical part of the forewings black with nar- *chilensis*. row, adjacent, small bands of the ground-colour; the under surface white, with confused grey and brown embeddings. The Andes of Chile and Argentina.

H. cisandina *sp. nov.* (141 d) is larger, in both sexes resembling the preceding above, but beneath *cisandina*. much darker, so that the yellowish-red on the forewings beneath and the white on the hindwings beneath appears only inserted in smaller spots. Argentina (Chaco de Santiago del Estero, on the Rio Salado).

H. middletoni *E.-Sh.* (141 a). Above more or less dull brownish-red, with blackish spots, the distal *middletoni*. margin likewise black. Immediately recognizable by the under surface of the hindwings, in which numerous bone-white, partly black-pupilled, small oval spots are arranged to 2 or 3 regular arcuate rows. South Brazil and Paraguay.

H. dovina *Schs.* (141 c). One of the largest species, above red-brown, forewing in the disc spotted *dovina*. dark, hindwing with a dark base, both wings have in the broadly blackish marginal area a chain of black-pupilled eye-spots of the ground-colour. The under surface reminds us of that of *middletoni*, but the white spots and markings are larger and not so numerous. Argentina and Bolivia.

- domina*. **H. domina** Bat. is just as large a species, above the ♂ likewise red-brown and similarly spotted; the ♀ before the apical part with a whitish-yellow macular band. Under surface marked somewhat differently; the species has hitherto only been known from Central America.
- aurinia*. **H. aurinia** Hew. (141 a) resembles the preceding species, being also about the same size, but blackish above; the forewings white and with rusty-red spots, recognizable by the brown, not white-spotted under surface of the hindwings. Brazil. — **incana** Stich. from Peru is larger, the hindwing above lighter ochreous, beneath we see instead of insignificant black transverse markings in the brown, in the ♀ light-clouded disc, distinct black, oval rings. — **gauchoana** Stich. from Uruguay is not before me; it is said to be smaller, on both surfaces lighter, with a red-yellow ground-colour of the forewings, the hindwings with smaller submarginal spots, otherwise nearly one-coloured, only in the basal and costal areas somewhat darker. Transitions of it also in Rio Grande do Sul.
- colchis*. **H. colchis** Fldr. (140 h). This species is on both surfaces considerably darker than *aurinia*; the spots in the ♂ ♂ are above sparse, also the under surface of the forewings very sparsely spotted at the apex and distal margin; the hindwings beneath dark brown with smaller eye-spot markings. Brazil.
- albinus*. **H. albinus** Fldr. (140 h, 141 a). Very variable, deviating at every habitat, particularly Panama-specimens (our figure of the under surface) differ entirely from those from Sa. Marta (141 a, upper surface) which are by far larger and beneath marked rusty-yellow instead of dark brown. Recognizable by the almost white upper surface of the disc of the wings. Not rare at its habitats; Panama to Venezuela.
- ochracea*. **H. ochracea** Mengel (141 d). Our figure exhibits specimens from Sapucay. Beneath the wings are cancellated in black almost like *Melitaea*; a median macular band of the hindwings is bone-white in the ♂, in the ♀ rusty-yellow. Paraguay; the butterfly seems not to be common; it flies in the company of certain *Stalactis* (*sontella*) which it apparently imitates.
- theodora*. **H. theodora** Godm. (142 g), described as a probable *Riodina*, is inserted here by STICHEL. The ♂ differs from the figured ♀ by an oblique stripe being above yolk-coloured, beneath bone-white and running from the middle of the costa of the hindwing to its proximal margin. From Chapada in Brazil.
- albofasciata*. **H. albofasciata** Godm. (142 g) resembles the preceding, but the spots of the forewings are white also in the ♂, the discal ones placed more medianly, the oblique streak on the hindwing above distinct only in the costal part, beneath, however, running broadly to the middle of the inner-margin. Smaller than the preceding species. Corrientes and Cordoba in Argentina; Paraguay.
- cinericia*. **H. cinericia** Stich. Described according to a single ♀ from Argentina, is neither figured nor compared with a noted form. „Shape like that of the preceding“ (*notialis* and *albinus*); the size seems to approximate that of *epulus*. Upper surface dark ashy-grey, forewing with 3 small black spots in and behind the cell, between the distal ones the ground-colour is brightened up by whitish; distally from the cell a strongly angled row of whitish spots. Hindwings almost one-coloured, only at the border somewhat lighter and with a row of indistinct black dots. Beneath grey, forewings partly somewhat dull ochreous-yellow, the spots as above, more distinct. Hindwings with indistinct dark transverse lines, median area lighter, distal area costally somewhat grey, otherwise greyish-brown, gradually shaded lighter with a fine black marginal line and indistinct submarginal dots. — Unknown to me.
- guttata*. **H. guttata** Stich. according to a single ♀ from Mendoza in Argentina. Seems somewhat to resemble the ♀ of *epulus*, but is said to have conspicuously short palpi. Scheme of markings similar to that of *epulus*. — Unknown to me.

83. Genus: **Metacharis**.

Like in *Ematurgina*, also in *Metacharis* the anterior radial vein most peculiarly branches off only from the 3rd subcostal vein, instead of from the anterior cell-end, its basal part being grown together for some distance with that of this subcostal vein. Remarkable is the very long costal margin of the forewing; also that of the much smaller hindwing is relatively long. The ends of the veins are in nearly all the forms marked with greasy-lustrous pencil-streaks. The species mostly are common; in day-time they sit on the under surface of leaves with their wings spread out and the palpi stretched straight forward; on being chased away by beating they only fly for some paces following the forest-road, and are thus easily taken. 10 species are known.

- nigrella*. **M. nigrella** Bat. (= *sylves* Hew.) (137 c). Above blackish olive-coloured (♂) or dark olive-grey (♀) with small black transverse streaks and marginal dots. The dot in the apex of the forewing is the thickest and often (in the ♀) on a rusty-red cloud. Venezuela, Colombia to Peru. Not rare.
- cuparina*. **M. cuparina** Bat. (137 c) is smaller, above deep red-brown, beneath in the ♂ uniformly lustrous blue.
- victrix*. Colombia to Peru. — **victrix** G. and S. (137 c) are ♂♂ from Central America, the almost black upper surface

of which exhibits a wonderful ultra-marine blue lustre and often also orange-red, small distal spots. — **xanthocraspedum** Stich. (137 c) which we figure from Cachabé, are ♀♀ with a faintly olive-brown tinge on the upper surface and a broadly yellowish-brown distal band of the hindwing. — Not rare.

M. regalis Btlr. (♀ = *auria* Drc.) (137 b) has the upper surface similarly coloured as *victrix*; but the ♂ is beneath similarly coloured as the ♀ on both surfaces, i. e. red-brown, with black spots, whereas the ♂ of *victrix* looks blackish-blue beneath. Venezuela (Suapure), Colombia (Villavicencio) to Bolivia and Peru. Colombian specimens are beneath lighter red-brown than Peruvians. — **indissimilis** Weeks (137 d) is a form being above olive-brown, from Colombia, with a rusty-yellow (*rabutana* Stich.) or ochreous-yellow diffuse spot in front of the apex of the forewing.

M. ptolomaeus F. (= *agrius* Dalm., *sylvestra* Mén.) (137 b, misprinted in *ptolemaeus*). Here both sexes are above red-brown, the under surface, however, in the ♂ black, with a blue reflection, the basal part of the wings powdered with a whitish blue. *ptolomaeus*-♂ is coloured contrarily to the preceding species, since the upper surface of *ptolomaeus* resembles the under surface of *regalis*, and the under surface of *ptolomaeus*-♂ the upper surface of *regalis*-♀. From the Amazon to South Brazil. Common.

M. lucius F. (= *nicaste* H.-Schäff., *batesi* Btlr.) (137 b). Above coloured and marked almost like *lucius nigrella*, but much smaller, the forewings posteriorly broader and the border of the hindwing almost straight. ♂ beneath grey-blue, with a lilac reflection, ♀ beneath rusty-yellow, similar to that of *ptolomaeus*, but the base of the wings not powdered with white as there. Guiana to Brazil. Common.

M. chia Hbn. Smaller than *lucius*, the pencil-streaks of the veins thicker and shorter, the upper surface deep dark-brown, but at the lower distal end of the disc of the forewing is a small orange spot. The under surface is light yellowish-brown, the wings dotted in black and broadly margined in dark. I only know HUEBNER'S figure which was inserted here by reason of the pencil streaks, but which otherwise resembles a *Crocozona*. Guiana.

M. exigua Bat. is said not to be the ♀ of the preceding species, but closely allied to it. Above brown with small, cornered darker brown spots, and with less numerous, small orange spots between them; in front of the border a series of darker orange-brown bordered spots. Beneath brownish-yellow, spotted like above. Size of *lucius*; described according to 1 ♀ from the Tapajoz; unknown to me.

M. erotylus Stich. (137 k). Blackish, hindwings in the basal part covered with red-brown; recognizable by the orange spot of the forewing, the base of which occupies the whole inner margin, and which then extends anteriorly, twists inwardly and grows narrower, in order to end taperingly at the middle of the costa. On the under surface the forewing is similar as above, but the hindwings are dusted greyish-brown and covered with dark commastreaks. The pencil-streaks on the ends of the veins are in the ♂ distinct only on the hindwings above; in the dark-brown, yellow-spotted ♀ they are on both wings. Peru, Bolivia.

M. erythromelas Sepp (137 d). The ♀ already greatly resembles some ♀♀ of the next genus (e. g. *Leimonias emylus*). Dark, with an ochreous-yellow, irregular oblique band of the forewing. Behind this oblique band there are 3 to 5 small white diffuse spots, which occur also in the ♂, though only beneath. The ♂ is above black, only the basal half of the forewing (except the costa) and a slight flush at the base and inner margin of the hindwing are miniate, at least I myself consider such butterflies from Guiana to be the typical ♂♂ of *erythromelas*. — In the form **erythraea** Stich. from Espiritu Santo, unknown to me, the red is more extensive, and the description mentions a yellow ring-spot near the apex.

M. poeciloptera G. and S. (137 d) has in the ♂ somewhat more red than the preceding species, so that the proximal half of the wings may be called red, the distal one black. — **melusina** Stgr. (137 d) differs scarcely from it. The ♂ has the greatest part of the hindwing black. — Larva white, fluffily haired in white, on *Viscum verticellatum*; the pupa brown, fluffily haired in white (Sepp).

84. Genus: **Lemonias** Ww.

This adopted name is to be preferred to the *Polystichtis*, as no other genus of animals is called so, and it can by rights not pass as such. Neither the veins, nor the legs nor antennae call for a division into further genera; nor does the formation of the palpi give sufficient reason for a separation; according to STICHEL an examination of the copulation-organs resulted in „insufficient conclusions“. There remain, therefore, merely exterior differences of the habitus to which we attach little importance. Thus the genus remains on the whole in the limits assigned by WESTWOOD and the older authors, such as BATES and KIRBY. — Hereto belong graceful, mostly brightly coloured, rather small butterflies with a long, slender body, mostly rather glaring colours of the upper surface and a one-coloured, often white under surface decorated with tiny dots and streaks. The ♀♀ mostly greatly deviate from the ♂♂, frequently with an oblique band of the forewing. The under surface and still more the shape and colouring of some ♀♀ exhibit a close alliance to *Echenais*; sometimes to such an extent that one might be inclined to regard the separation of the two genera to be not quite natural.

- rhodope*. **L. rhodope** Hew. (137 e) resembles *Metach. melusina* above, but the under surface is marked very similarly to that of *emylus*, though it is duller violettish-green. The ♂ is unknown to me; the specimen figured as *ancile* by HEWITSON may perhaps belong as ♀ to *rhodope*; the forewings are similar, more orange-coloured, but the hindwings are unicolorously blackish-brown and the under surface is marked differently. I was not able to obtain two equal ♂♂; the boundary between the black and red of the upper surface varies at every habitat. Amazon. — *bubo* Btlr. has near the anal angle before the black distal margin a small white spot, while the ♀ (according to BUTLER) has a kind of a light spot in the middle of the dark-brown hindwing. — *amphis* Hew. (137 d) are specimens with a greatly narrowed margin of the hindwing.
- cerealis*. **L. cerealis** Hew. (♂ = *cuprea* Btlr.) (137 g). ♂ brick-red in the cell and before the border, some specimens also in the disc with black markings. Before the apex little spots of a blue lustre. ♀ dull yellowish-red, with a panther-like, copious marking. Under surface of the ♂ similar to that of *emylus*, more one-coloured leaden-grey. Extremely inconstant, differently marked at every habitat, also the ♀ in which the spotting in the disc of the forewing may disappear nearly altogether (= *caecina* Fldr.). From the Amazon, rather rare.
- zeanger*. **L. zeanger** Stoll (137 g). Presumably scarcely specifically different from the preceding species which it replaces in Guiana. Typical *zeanger* resemble *cerealis*, but the bluish-lustrous apical spots of the ♂ are increased. Surinam. — *rhesa* Hew. has the blue spot larger, more metallic, more remote from the apex, whereby a certain exterior resemblance is created with *Argyrogramma amalfreda physis* Stich., so that the figure of the latter was denoted by mistake as *rhesa*, although the blue-silvery line in front of the border of the forewing shows that it must be a *physis* with which also the marking at the border of the hindwing corresponds. — *pirene*. **pirene** Godm. (137 g) from the Upper Amazon has the black apical part of the ♂ forewing increased and traversed by a broad blue band, and in *gyges* Stich. (137 g) from Humayta (Amazon) and Peru the blue spot is still larger, so that it occupies nearly the whole distal half of the forewing, and the dots in front of the border of the hindwing are partly confluent. Varying at every habitat and representing an almost uninterrupted series of transitions. Not common.
- parthaon*. **L. parthaon** Dolm. (= *thermodocë* Hbn.-G., *rhesa* Btlr. p. p., ♀ = *ancile* Hew. p. p.) (137 e, as *parthaon*). Here the red on the forewings has disappeared except a minute spot before the anal angle; the ♂ has blue, the ♀ white spots before the apex of the forewing; described from Guiana. — *pelarge*. (137 e) scarcely differs from *parthaon*; the blue spot of the forewing is said to be smaller, but it varies in both forms; as a chief difference the black colouring of the abdomen in *pelarge* (from Mexico and Central America) is mentioned, which, however, occurs also in Amazon-specimens. — Rare.
- florus*. **L. florus** Stgr. (137 k). Approximating the preceding species, but the red of the hindwing shaped into an oval disc before the distal margin. The forewing brown, with a diffuse, bluish-violet lustre, above the basal inner-marginal part with a reddish gloss. The ♀ with a pale yellow oblique band of the forewing. Ecuador to Venezuela.
- lasthenes*. **L. lasthenes** Hew. (137 i, k) greatly approximates the preceding, but in the ♂ the orange-yellow band of the hindwing, in the ♀ the bone-yellow band of the forewing is shaped differently. Central America. Rare.
- zeurippa*. — **zeurippa** Bsd. greatly resembles *martia*; on the forewing the violet reflection of the apical part does not extend proximally beyond the centre of the wing; the orange-brown anal spot of the hindwing is shorter, broader, rounder, the animal as large as *lasthenes*; the ♀ like in *lasthenes*, but the band of the forewing with a slight ochreous tinge and curved. Mexico and Honduras.
- martia*. **L. martia** Godm. (137 k) is allied to the preceding, larger; the ♂ with a more intense reddish tinge, the apical part of the forewing of a bright violet lustre. The ♀ is unknown to me. Described according to a single ♂ from Colombia (Rio San Juan).
- sudias*. **L. sudias** Hew. nec Stgr. (137 k). In the ♂ the disc of the forewing is entirely suffused by blue, the border of the hindwing broadly orange-yellow. The ♀ resembles those of *florus* and *lasthenes*, but the oblique band of the forewing is white and does not reach the anal angle, quite similarly as in the ♂ of *argemissa* (137 i). Mexico and Central America. Rare.
- apotheta*. **L. apotheta** Bat. From „Brazil“, without the habitat being more explicitly mentioned, unknown to me. Upper surface dark ochreous-brown, the wings traversed by few short, fine, darker streaks, the marginal part with a reddish tinge, in front of the border a regular row of dark, light-encircled dots. — *maeon*. **maeon** Godm. (137 h) from Guiana has a darker apical part of the forewing and a greyish-white under surface; — *maeonides*. in **maeonides** Godm. from Colombia (137 h) almost the whole forewing, except the narrow inner-marginal part, has a dark tinge, and the under surface is light slate-grey, without a very dark border. — *idmon* G. and S. from Panama and the adjoining Colombia entirely resembles *maeon* (137 h), but the darkening does not cover the costal and apical parts, but it extends also above along the distal margin and is not intense. The ♀ is larger, more dirty greyish-brown, uniformly coloured, with distinct black markings. Beneath like *maeon*, but the margins are developed more distinctly. Rare.
- arachne*. **L. arachne** Stich. I do not know; it is said to be like *idmon*, the wings above rusty-brown with 3 rows of black streaks; forewings with dark brown spots and obsolete whitish submarginal lunae, hindwings with

white posterior half and black marginal dots. Beneath marked just the same with a brownish-grey ground-colour in some parts mixed with white. Amazon.

L. argenissa Stoll (= *petronius* F., *sudias* Stgr., *staudingeri* Godm.) (137 i). In the ♂ the whole upper surface is suffused with violettish-blue, narrowly marked with black; ♀ greyish-brown with a white oblique band of the forewing ending broadly before the anal angle. Colombia, Panama.

L. fannia Godm. (137 i) is known to me only from GODMAN'S figure of the ♂. Above dark brown, the distal part of the hindwings violettish-blue; under surface with small blackish streaks in the disc, a dull band before the border and dark-pupilled eye-spots before the border of the hindwing. Guiana.

L. laobatas Hew. (= *labotas* G. & S. p. p.) (137 h). ♀ blackish-brown, in the apical part of the forewing and before the border of the hindwing sparsely spotted in white, in the disc of both wings small black dashes. ♂ very similar to the figured **andraemon** Stich. (137 i), but the upper surface of the ♂ more reddish than blackish-brown (= **trötschi** G. & S.), the under surface more shaded and streaked in dark. Colombia and Panama. — **simplaris** Stich. from the Amazon is smaller than *laobatas* and has no white intermixture in the forewing; in the hindwing the white is increased, but the blue is absent.

L. caligata Stich. Shape of the wings like in *idmon*, the anal angle of the hindwings somewhat more rounded. „Upper surface greyish-green, under surface light-blue, on both surfaces black spots, the position of which corresponds with the general scheme of markings of the genus.“ In the hindwing besides 2 more spots near the costal margin on a grey ground. Near the margin of both wings a scarcely appreciable silvery line. Beneath all the spots are smaller. Rio San Juan (Colombia).

L. antanitis Hew. probably does not belong into this genus (rather to *Pandemos*), in case HEWITSON'S figure really represents a ♂. Snow-white, forewing with a broad black marginal band ending broadly in front of the anal angle. A black wedge runs from the base of the forewing to the cell-end along the costa. Hindwing quite snow-white. Under surface with a brownish median shade being broad at the costa of the forewing, and an undulate brown line in front of the marginal part. It resembles on the whole a white *Dynamine* (101 A a). Bolivia.

L. byzeres Hew. (142 d). Above brown with fewer darker dots and streaks corresponding about with those beneath. Brazil.

L. luceres Hew. (142 d). I doubt whether it belongs hereto. The under surface like the upper one, but orange-red and the white subapical spot of the forewing larger. Ecuador. Somewhat homochromous with certain Geometrids from that region (*Devarodes*).

L. pione Bat. (137 h). Deep blackish-blue, above with numerous, small dark spots and dashes. It faintly reminds us of an *Emesis ocyptore* (136 g), but it is smaller and more lustrous. Para.

L. pulchra Lathy (137 h). Similar to the preceding in the shape, but much lighter blue, the wings at the base above dirty brownish grey, the disc almost without small black spots. ♀ unknown. Ecuador and Peru. Rare.

L. thara Hew. (♀ = *melia* Bat.) (137 g, h). ♂ blue, with rows of black spots, the base of the wings and the inner marginal part of the hindwing dirty yellowish-brown. quite different, whitish-yellow with black macular bands, the disc of the forewing like a band bone-white. GODMAN separates the Guiana-form as *nomia* from the (typical) Amazon-form. But 2 ♂♂ of my collection from Surinam deviate from each other more than from a Humayta-specimen. The ♀♀ from the Amazon are somewhat yellower than the figured ♀ from Cayenne, which belongs perhaps to GODMAN'S *nomia*; **martialis** Fldr. is presumably only a ♀-form from Surinam.

L. emylius Cr. (♂ = *crispus* Cr.) (137 f). ♂ vermilion with a black apical part and costal-marginal part of the wings, under surface silvery bluish-white; disc of the wings with blackish dots. The ♀ quite different, above dark-brown with an ochreous yellow oblique band of the forewing; before the apex and border small white spots. Guiana, Amazon. — **emyliana** Stich. (= *emylius* Stgr.) from Peru, Ecuador and the Amazon which I do not know is said to be larger and to have in the male increased and deeper red. Of my Peruvian specimens all the ♂♂ exhibit a lighter red which is more interspersed with black, the ♀♀ have a more irregular oblique band on a lighter ground-colour: = **crispinella** Stich. (137 f as *crispinellus*).

L. cilissa Hew. (137 f). ♂ quite similar to the preceding, but the light vermilion is replaced by orange red. The ♀♀ are quite wax-coloured with a broad dark brown margin of the forewing and a narrower dark margin of the hindwing. From Nicaragua to Colombia. Typical ♀♀ only have a border as fine as a line, the fringes of the hindwing being brown. In specimens from Costa Rica, as we figure them, the border of the hindwing is broadly brown.

L. asteria Stich., unknown to me, is placed between *cilissa* and *emylius*; ♂ above red-brown, the costa, the apical part as far as the cell-end, and the border broadly blackish-brown. In front of the apex 4 or 5 white

dots, the second being the largest. In the cell 2 or 3 sometimes indistinct transverse streaks, behind the cell 4 black strigiform spots. Hindwing with a white costal area, below it 3 rows of black strigiform spots, each of the two proximal ones with 2, the distal one with 6 or 7 spots, the latter row curved like an S. Colombia.

luciana. **L. luciana** F. (= *nepia* Ww.) (137 e). Copper-brown; costa, apical part of the forewing and distal margin of all the wings darker brown; under surface bluish-white with a dark shade in the apical area of the forewing. All the wings above and beneath finely dotted in black. ♀ has broader wings and is somewhat darker than the ♂. Panama, Venezuela. — **pseudocrispus** Ww. (= *crispus* Cr.) (137 e) has the apical part of the forewing shaded somewhat darker and more distinctly defined towards the copper-red; hardly deserves a denomination. Guiana to Bolivia; we figure a specimen from Para, in order to show the slight difference. Not rare near Bahia. — **concinna** Stch. from the Rio San Juan in Colombia is said to be distinguished by a broader dark border of the hindwing in the ♂♂ and quite dark hindwings of the ♀♀. — **nepioides** Btlr. (= *luciana* Hbn., *melanogyra* Bat.) (137 e), may be a distinct species, or may be only a district-form, from South Guiana and the Amazon, has the copper-red more fiery and the darkened parts of the wings distinctly defined towards this colour. Common.

telephus. **L. telephus** Cr. (= *alphaea* Hbn., *timandra* Ww.) (138 f). ♂ forewings black with some dispersed white vitreous dots, hindwings orange-yellow with a broad black border. Under surface blackish, the hindwings speckled bluish-grey. The ♀ has the vitreous dots and the under surface like the ♂, but it is above yellowish-brown, with a dark apical part of the forewing and a black-dotted disc. The species varies with every habitat. The couple figured by me originates from Paramba. Surinam-♀♀ are of a much brighter bean-yellow colour and have smaller vitreous dots than the figured one, while the ♂♂ from there have a darker yellow of the hindwings. There is a very interesting ♂ with quite black hindwings being only in the centre narrowly red-yellow, but with black spots in the orange part, like in the ♀, in the Paris Museum. Near St. Jean du Maroni (French Guiana) the ♂ exhibits yet a narrow orange band parting the black distal marginal band of the hindwing from the direction of the proximal margin. In Colombian ♀♀, being above very light ochre-yellow, only the apical part is distinctly defined black; in a ♀ the patria of which is not stated, in FASSIS collection, the distal margin of both wings is also broadly black, the proximal half of the wings, however, fox-coloured. As there are often different forms flying near each other, they are not to be regarded as subspecies. — A genus of its own (*Elaphrotis* Stch.) has been established for the species itself; but the habitus and particularly the under surface exhibit its alliance to the *emylus*-group of *Lemonias*. We must remark yet that the abdomen is always yellow, not brown as on the figure.

lyncestes. **L. lyncestes** Hew. Size and under surface almost exactly like in the preceding, but the upper surface quite dark-brown with black dashes, only the border is broadly red-brown, containing a series of white, proximally black dots. Guiana, Brazil; according to HEWITSON's figure the black marginal dots exhibit a white exterior which is absent in specimens I captured in South Brazil. Rarer than the preceding species.

bolena. **L. bolena** Btlr. (= *xanthobrunnea* Warr.) (138 k). Of a bright yellow, the base of the wings, a broad apical band of the forewing, the apex and anal angle of the hindwing resembling the colour of the trunk of a tree. Beneath dark-yellow on light-yellow, marked with dashes like the preceding species. South Brazil and Paraguay. Forms a transition to the genus *Echenais* which is not distinctly separable from *Lemonias*. The shape of the broad apical spot seems to be different at every habitat. In specimens from São Paulo it is the narrowest, similarly in Paraguay-specimens, in specimens from Espiritu Santo it is the broadest, in those from Rio Grande do Sul its lower part does not project so arcuately towards the base. Single and not common; flies in day-time and likes to rest on the trunks of trees.

85. Genus: **Echenais** Hbn.

Most of the species of this genus, the characteristics of which are still somewhat obscure and whose species vary in every district, have in the male sex the apical part of the hindwing white which gives a peculiar appearance to the butterfly particularly on the wing, as if it was hurt or wiped off behind. They rest in a Geometrid-like attitude on the under surface of leaves, but they come forth at some hours of the day in order to perform their gambols on the trunks of trees. ♂ and ♀ then sit on the trunk with their wings half open and execute short, skipping flights by ascending or descending the trunks in curves. *Echenais* is as little separable from the preceding genus as from the following, and might better be regarded as a group of the *Lemonias*; thus it happens that most of the species are sometimes quoted as *Echenais*, sometimes as *Lemonias*. The head is small, the abdomen long, that of the ♂ very slender and pointed, the forewings behind very broad; the hindwings rounded. The very long and capillary antennae are carried parallel and stretched straightly forward as the *Erycinidae* are used to do. The upper surface of the wings nearly always exhibits the dots and transverse streaks of the *Lemonias*, but mostly bordered light. Most of the *Echenais*, compared with other *Erycinid*-genera, are common butterflies.

tinea. **E. tinea** Bat. (142 g). The smallest species; by the speckled fringes it reminds us of a small *Calydna* as which it was also described. Dark brownish-grey; the black punctiform streaks of a dull lighter shade. Guiana and East Brazil, to the south as far as Matto Grosso; not rare.

E. eudocia *G. & S.* from Mexico resembles *tinea*, but it is often still somewhat smaller and darker, *eudocia*, quite unicolorous, with black markings, the light spotted margins scarcely appreciable, the dark fringes of the forewings at 3 places interrupted by white.

E. lampros *Bat.* is a little larger than the preceding, recognizable by the more violettish-brown *lampros*, colour of the forewings and the entirely violettish-blue hindwings of the ♂. From Teffé on the Amazon.

E. leucophaea *Hbn.* (138 i) dirty dark yellowish-brown, the upper surface copiously decorated with *leucophaea*, punctiform streaks, in front of the border of the forewing rows of black spots; there are mostly 2 of them, but the submarginal spots may also be single; such a ♀ was likewise figured, but erroneously termed *tinea*. Brazil, in some districts common; it approximates the following species.

E. aristus *Stoll* (138 f). CRAMERS figure is not distinct, but it seems to represent the most common *aristus*, species in Surinam, which we figure. Forewings almost like in *tinea*, dark, indistinctly marked in black, in front of the border a lighter line being particularly distinct in the ♀. Hindwings posteriorly white; this white colour may be narrower than on our figure (= *aristus*-♀ *E. Sh.*, *erecta* *Stich.*).

E. hübneri *Btlr.* (138 f), according to STICHEL unlike the preceding, has blue-marked (ringed) fore- *hübneri*, wings and the ♂ exhibits the greater half of the hindwing white; Amazon. — In *sordida* *Btlr.* the otherwise *sordida*, bluish marking is darkened. Amazon, Guiana. — **pauxilla** *Stich.* from Peru is said to be smaller and of intense *pauxilla*, colours.

E. alector *Btlr.* (= *violacea* *Btlr.*) (138 g, as *violacens*). Entirely like the figured form *mollis* *Btlr.*, *alector*, (138 g) except that in the ♂ the disc of the forewing above is traversed yet by a transverse macular band; in *mollis*, the ♀ of *alector* only the small white band of the forewing is somewhat darker and narrower than in the figured of *mollis*. — **glaucobithris** *Stich.* is said to be a „transition“ of the two, „but without the white hinder-marginal *glaucobithris*, diffuse spot of the forewing“. The species, moreover, greatly varies, particularly in the intensity and extent of the violettish-blue colour of the ♂ upper surface and in the shape of the small white band of the forewing in the ♀. From the Amazon to Bolivia, mostly common; in *asemna* *Stich.* the violet is almost entirely absent *asemna*, on the upper surface.

E. leucocyana *Hbn.-G.* This common species from Guiana and the Amazon forms the intermediary *leucocyana*, between the two preceding species: in the ♂ the lower half of the hindwing is white, in the ♀ not. This form differs from *alector*-♂ by its smaller size, more brownish forewings and by scarcely half of the hindwing being white, not as in *alector* the greatest part; the ♀ resembles a *leucophaea*-♀, but it is lighter brown.

E. hemileuca *Bat.* Like the preceding, but with narrower wings, lighter greyish-brown, and only the *hemileuca*, lower part of the hindwing of the ♂ white. The transition-area from brown to the white colour is tinged bluish. It is said to occur beside *leucocyana* in Guiana; it is presumably only a local deviation from the preceding. — STICHEL denominates another side-form from the Amazon **epixanthe** the hindwings of which are brown, like *epixanthe*, the forewings marked in violet.

E. aminias *Hew.* (138 f, as *alector*). Immediately recognizable by the forewing and hindwing being *aminias*, of the same design. A violet median band runs broadly through both the wings, being finely dotted and streaked in black. We figure the species from Venezuela, in which the violet is somewhat clearer, the black spotting of the median band somewhat scarcer than in the type from the Amazon. — From this, on the other hand, the form figured as „*catenifera*“ (138 h) differs; it is darker than the figure of *aminias* with HEWITSON, the violet colour very dim, the animal itself larger. The comparison with the type, however, resulted in these differences being insignificant, for which reason the name chosen in the table (*catenifera*) is better not introduced, but replaced by *aminias*.

E. balista *Hew.* (142 f). Dark-brown with black, sparse punctiform streaks and a lighter, black-dotted *balista*, margin. Beneath greyish-brown, the dotting in the disc more copious, the dots in front of the border with lighter rings around them. Upper Amazon, Ecuador.

E. argiella *Bat.* is known to me only from the author's description; apparently exactly like the *argiella*, preceding, also of the same size, but also above more copiously spotted; instead of the light, black-dotted marginal band, a series of light, dark-centred rings stands in front of the border. South Brazil.

E. sejuncta *Stich.* Unknown to me; it is said to originate from Neu-Freyburg and Rio, allied to *hübneri*, *sejuncta*, smaller, forewings relatively shorter. ♂ above greyish-brown, faintly tinged in a rusty red, towards the margin lighter and redder, spotted like the allied species. Forewings beneath greyish-brown, the spots surrounded by a light tinge, the median row only distally shaded in white; hindwings similarly spotted, the spots in the median area placed together to a zigzag-line. ♀ above somewhat lighter greyish-brown, the marking as in the ♂, forewings beneath very much powdered with white. Fringes greyish-brown.

E. malea *Schs.* is similar, but it differs by the hindwings of the ♂ being white in the lower half, and *malea*, by spots above, in the middle of the forewing, forming a dark nebulous band. Panama to Rio de Janeiro.

- densemacu-*
lata. **E. densemaculata** Hew. (= *debilis* G. & S.) (138 k). Above dark yellowish-brown, speckled ochreous, with brown spots encircled by ochreous ones which are connected with the distal margin. Beneath like above but paler. ♀ like the ♂. Apparently rare, but wide-spread; from Central America to Ecuador.
- zerna.* **E. zerna** Hew. (142 h). The figured specimen originates from Santos. Recognizable by the upper surface being marked greyish-green. Under surface bluish-white with black dots, forewing in the apical part with grey nebulous spots. Very local, but not very rare at its habitats. Brazil, Bolivia; from the latter country also the form *luteonaevia* Stich., with more white markings, hindwing with an ochreous-yellow marginal zone.
- luteonaevia.* **E. glauca** G. & S. (138 k) from Costa Rica is much more brightly marked in light blue, only the apical part of the forewing and 3 rows of small dashes arranged to transverse bands are black. Rare.
- glauca.* **E. curulis** Hew. (142 h). Very pointed wings, at once recognizable by the upper surface of a bright metallic sky-blue lustre, the colour of which almost comes near the splendour of *Mesosemia croesus*. STICHEL doubts whether *E. melitta* Thm., with a darker apical part of the forewing, is to be placed here. Bolivia (Ecuador). The figured ♂ from the Rio Songo.
- curulis.* **E. laius** G. & S. resembles on the whole a small ♂ of *Nymphidium ethelinda*, the head, thorax, forewing and the costal part of the hindwing are chestnut-brown, the rest of the hindwings is yellowish-white. Size of the *pulcherrima*. I only know the ♂ in the Coll. GODMAN. Guatemala.
- latus.* **E. pulcherrima** Btlr. (140 c). Rather similar to *penthea* in both sexes, but in the ♂ the white of the hindwing passes over into the proximal margin of the forewing, in the ♀ the whitish oblique band of the forewing does not terminate before the proximal margin, but turns angularly round on the lower median vein and is irregularly continued on the hindwing. Amazon. — **comparata** Stich. from Peru is more dark brown than red-brown, and the white spot at the proximal margin of the forewing is larger. East Peru. Common.
- pulcherrima.* **E. lilina** Btlr. (140 c). Forewing blue, with black spots, a large spot behind the middle of the costa and the proximal-marginal area white. Hindwings, except the dark-grey base, quite snow-white. Mexico to Panama. Our figure according to a ♂ from Costa Rica.
- lilina.* **E. icterica** G. & S. (140 d). Forewings yellowish-brown, some spots round the proximal margin yellowish-white. Hindwings dull yellowish-white with a brown base. Panama. Rare.
- icterica.* **E. penthea** Cr. (138 h). ♂ red-brown, with blackish spots, the lower half of the hindwing white with small blackish spots at the apex and anal angle. ♀ dark-brown with a whitish, irregular oblique band of the forewing and a submarginal row of eye-spots of the hindwing. — Typical *penthea* come from Guiana and the eastern coast of Brazil, they are rather small, the ♀♀ above with traces at most of yellowish-red. — **auseris** Hew., from the Middle Amazon, are larger, the ♀♀ more brightly coloured, in front of the row of eye-spots on the hindwing a distinct red colouring. — **penthides** Stich. (= *penthea* Stgr.) (138 h, i) is still larger, the band of the forewing of the ♀ is broad at the costa, the wings with bright red markings; from the western parts of South America. — **nitelina** Stich., according to 1 ♀ from the Yurimaguas, with a triangularly shaped band-spot of the forewing. — Of **echion** Stich., like the type from Guiana, the ♂ is darker brown, and a series of spots runs through the centre of the hindwing. In the ♀ the white band of the forewing is losing itself from the margin in a downward line. — **nilios** Stich. (138 i) which I figure according to specimens from the Itaituba (Amazon) shows in the ♂ the lower, otherwise white part of the hindwings almost entirely covered with brown arcuate bands, and in the ♀ the whitish band of the forewing is greatly narrowed. — At some places very common.
- nitelina.* **E. annulifera** Godm. (138 h). The ♂ has about the ground-colour of the ♀ of the preceding species, more dark greyish-brown than red-brown. In the hindwing the marginal part is broad white. The basal halves of the wings with thick, mostly round, light-ringed eye-spots. Only the ♂ is before me, from the Rio Mapiri; reported also from Guiana.
- echion.* **E. micator** Sch. (138 h). Like the preceding allied to *alector*; twice as large as *annulifera*, the basal halves of the wings spotted like in the latter, but the forewing with a broader curved white median band, the hindwings entirely white, with the exception perhaps of the basal third. Under surface like the upper, duller, in front of the border of the hindwing grey nebulous spots. From the Rio Pachitea in Peru. The ♀ is not before me.
- nilios.* **E. galena** Bat. (138 k). Above red-brown, the basal half with scarce dashes and bounded off from the purely red-brown distal part of the wings by a chain of such dashes. Beneath the black dots are more numerous and the whole proximal part of the wings is covered with small white scales, as if with powder. (The 2nd figure in the row t. 138 k is taken from beneath). Guiana and Western Amazon (Itaituba); local, but not rare.
- annulifera.* **E. senta** Hew. (138 i). On the red-brown wings there are alternating darker and lighter irregular bands. Before the apex of the forewing are two small whitish spots above each other, at the costa of the hindwing 2 next to each other. Beneath the boundaries between the lighter and darker bands are marked black. The figured specimen collected by BATES contains only the statement: „Amazon“.
- galena.* **E. senta** Hew. (138 i). On the red-brown wings there are alternating darker and lighter irregular bands. Before the apex of the forewing are two small whitish spots above each other, at the costa of the hindwing 2 next to each other. Beneath the boundaries between the lighter and darker bands are marked black. The figured specimen collected by BATES contains only the statement: „Amazon“.
- senta.*

E. borsippa Hew. from the Amazon is bright orange-red, almost miniate; the ♂ has a blackish-brown *borsippa*, apical part of the forewing and from the costa of the hindwing there extend the beginnings of black bands ending, however, incompletely in the centre of the wing. The under surface exhibits bluish-grey bands alternating with reddish-grey ones.

E. charessa Stich. is established according to a ♂ from the Rio Juruá. Small (12 mm); shape of the *charessa*, preceding, forewings red-brown, with black spots, similar to *pentheia*; in front of the border a series of black, oblong, small spots being proximally bordered in light. Inner marginal area grey as far as the submedian. Hindwings white, costal area and apex greyish-brown, at the border a fine black line, and in front of it small black spots. Unknown to me.

E. borsippina Btlr. A small species; only the ♀ known. On a dark-brown ground the forewings exhibit *borsippina*, 3 incomplete red-yellow macular bands before, in and behind the centre and a complete stripe before the border. Hindwings light yellow, costal part and apex brown, in front of the border some small black spots. From the Rio Tapajoz. Is not before me.

E. elpinice Godm. (♂ 142 f, ♀ 138 g). As the ♂ which was hitherto unknown and which I therefore *elpinice*, likewise figure, shows, a real *Echenais*. Under surface quite similar to that of *alector*-♂. ♀ with obtuser wings, the ring-marking not so distinct. Bolivia, Colombia; the figured ♂ from the Rio Songo (Coll. FASSL).

E. aemulius F. (= *geris* Dbl., *hemixanthe* Fldr.) (138 g). Similar to the preceding species, larger, *aemulius*, and recognizable by the broad orange distal band of the hindwings passing over to the anal angle of the forewing. South Brazil. In Rio temporally common, but local (e. g. near Botafogo). — **adelina** Btlr. (138 g) from *adelina*, Costa Rica to Ecuador has the hindwings, except the base, pale yellow which colour extends far on to the forewing.

86. Genus: **Calliona** Bat.

This genus is as little separable from *Lemonias* as the preceding. Its resemblance with *Aricoris* accepted by BUTLER only refers to the exterior. The ♂♂ do not resemble much the *Lemonias* owing to the large white discal spots on both wings, but anatomically there is hardly any difference. The *Calliona* are of a still more slender structure than most of the *Lemonias*, the palpi project greatly also in the ♂, the antennae are scarcely thickened at the ends; the ♂♂ with white discal orbs, the ♀♀, as far as is known, with a yellow oblique band of the forewing. The butterflies are apparently very rare.

C. irene Ww. (138 a). On each of the 4 black wings of the ♂ a white, roundish disc, the basal part *irene*, of the hindwings scarlet. Under surface greyish-brown with 4 white discs as above; in the basal part of the wings dark transverse bands. The ♀ looks entirely different, resembling somewhat *Mesene sagaris*-♀ (134 i), but the ground-colour is lighter brown and makes the same transverse streaks the ♂ also has appear in a dull shade Lower Amazon: Para, Humayta.

C. siaka Hew. (138 a). ♂ similar to *irene*, larger, hindwings along the costa red, along the border blue. *siaka*. Beneath in the basal part of the hindwings scarce dark small spots. I do not know the ♀. From Maipures on the Orinoco and Amazon.

C. latona Hew. (138 a). The ♂ has the forewings similar to the preceding, but it is smaller and its *latona*, hindwings have not a white, but a scarlet inner-marginal stripe. From the Amazon. — In *delia* Stich. the white *delia*, discal spot of the forewing is much smaller, the whole hindwing, except narrow margins, red and beneath there are no dark transverse streaks. Known to me only from STICHEL's figure and description; from Venezuela.

87. Genus: **Corachia** Schs.

This genus was based on a single ♀ which greatly approximates some ♀♀ of *Lemonias*. It has, however, a more strongly curved margin of the forewings and short, knobbed antennae. The upper median vein rises close at the lower cell-angle, the lower radial comes out of this, the cell-end vein is proximally convex, somewhat oblique. The hindwings are long, almost as long as the forewings, whereby nearly the exterior of an Indian *Gerydus* (*Allotinus*) is created.

C. leucoplaga Schs. (= *tablazonis* Strd.). ♀ quite similar to the ♀ of *Lemonias argenissa* (137 i), but *leucoplaga*, the white band of the forewing is broader with bulging margins and traverses the wing transversely, not obliquely. In the ♂ this band of the forewing is replaced by a faded, grey, costally parted discus-spot. Costa Rica, certainly rare.

88. Genus: **Nymphidium** F.

The uniformity of the veins argues against the branching-off of further genera such as *Peplia* Hbn., *Nymula* Bsd., etc. which have recently been again based upon differences in the palpi and the male exterior genitals. If the well done figures in the „Genera Insectorum“ are correct, I cannot find any essential difference between the palpi of *Peplia* and *Nymula*, and the clasping-organs vary also considerably in different undoubted *Nymphidium*. In the veins there is no difference. Some *Nymphidium* are obviously secondarily transformed

by mimicry, otherwise the almost exclusive colours are brown and white either of which being now and then preponderant. The wings have a normal shape without indentations, tail-appendages, lobing or coiling. The larva is known of but 1 species, shaped like a wood-louse, hunched, green with a yellow lateral streak, the neck-organ out of a transverse row of green spikes or bristles. It has a guard of ants. Papa green, fastened by a belt-like thread. The butterflies rest on the under surface of leaves and are chased up by beating the bushes, whereupon they fly like Geometrids for some paces, in order to hide themselves again. The swarming-time seems to be dawn, or the early morning, but I came across the ♀♀ yet in the sunshine of the morning on blossoms. They are easily taken and fly low.

- titia*. **N. titia** Cr. (= *tytia* F., *gnosis* Bsd., *eroe* Hew., *lytia* Kaye) (140 b). ♂ dark purple-brown with a small white spot below the costa of the forewing and a light-brown, blurred distal band of the hindwing. ♀ dark sepia-brown with 3 white spots of the forewing (in the disc, below the costa and before the anal angle), the hindwing with a white distal band. Under surface of both sexes similarly marked, but in the ♂ at the margin slightly brightened up, in the ♀ very much white-speckled. Guiana, near Cayenne not rare. — **arctos** Hew. (140 a, b) is larger, the ♂ with a very faint brightening before the border of the hindwing; the ♀ also lighter before the border of the hindwing, but without a real white band. Amazon. — ♀♀ from Teffé form the intermediary between the two forms; they have a very narrow white band. — ♂♂ from Ecuador and Peru are quite dark brown, without the brightening before the border of the hindwings, the small, white subcostal spot of the forewing being larger (= **ariadne** Stch.)
- orestes*. **N. orestes** Cr. (140 c). The butterfly occurs in 2 forms which, however, are not definable according to patriae. The typical form has above quite unicolorously dark red-brown ♂♂ being faintly dark-speckled, looking almost like the ♂♂ of *arctos* in which the brightenings below the costa and before the border of the hindwing are absent; the ♀ has an ochreous-yellow band of the forewing. — The second form, **arche** Hew. (140 b) has above an irregular transverse band being in the ♂ only slightly indicated, in the ♀ composed of large white spots. Guiana and the Amazon, common, also the ♀♀; according to STICHEL, also in Ecuador.
- candace*. **N. candace** Drc. Unknown to me in nature, mentioned from Rio de Janeiro. Size of the preceding, but the hindwings larger, rounder, the border not bevelled as in the preceding species. Above of a red-brown colouring without markings, beneath only faint traces of the numerous ring-marking of the proximal half. — Unless the patria be confounded, it must be very rare.
- sorana*. **N. sorana** Stoll approximates *orestes* and originates from Guiana; above dark red-brown, the oblique band of the forewing yolk-coloured, uniform.
- abaris*. **N. abaris** Cr. (= *tenes* Dbl., *sperthias* Fldr.) (140 c). ♂ above velvety brown, at the border, sometimes also across the centre, copper-red. Below the costa a small light spot may stand as in our figure, but it may also be absent altogether. The dark-brown ♀, however, always has this spot, and besides the anal angle of the forewing and the border of the hindwing is bone-yellow or marked thus. Guiana and Amazon, very common; in Trinidad apparently rare.
- phylleus*. **N. phylleus** Cr. (= *phyleus* Mschl., *phylacis* Godt.) (140 a as *phyleus*). ♂ with a red-brown forewing with fox-coloured bands and rings, and a fox-coloured hindwing exhibiting black antemarginal dots, a dark-brown base and a similar median band. Below the costa a bone-coloured spot. The ♀ is dark-brown, with a broad bone-white band of the forewing and disc of the hindwing and a similar stripe in front of the border. The ♀ varies extremely; the white bands are of a different shape at every habitat; we figure an aberration in which all the whitish bands are darkened by a brown scaling (artificial production?). — **apame** Hew. (= *magnifica* Stch.) scarcely differs in the male from typical *phylleus* except the red bands being narrower; in the ♀, however, the white is greatly narrowed on both wings; from the Amazon. — **praeclara** Bat. (140 a), on the contrary, has the bone-yellow colour increased at the cost of the dark-brown ground-colour; from Guiana. The species is not common.
- licinias*. **N. licinias** Stgr. (142 f). Dark-brown, in the marginal area red, in the basal area with black markings; both the wings are traversed by a joint band bent proximally towards the costa of the forewing, being in the ♂ of a bright golden yellow, in the ♀ lighter, more brownish-yellow. From the Rio San Juan in Colombia. STAUDINGERS figure of a ♂ which we copy corresponds well with a specimen in GODMANS collection. Apparently very rare.
- dorilis*. **N. dorilis** Bat. resembles *licinias* to which it belongs according to STICHEL; but the red-yellow median area has here the shape of the white band of *calyce* (139 e).
- nymphidioides*. **N. nymphidioides** Btlr. (= *labdacus* G. & S.) (141 c). Size of *phylleus*; ♂ with light small median spots in the disc of the red-brown forewing. ♀ white, the forewings with a brown border and a brown basal part, in the latter white, dark-pupilled rings. Central America, rare.
- ethelinda*. **N. ethelinda** Hew. (139 i). ♂ chestnut-brown, forewings almost without any markings; hindwing except the basal third and the apex yellowish-white. ♀ similar to that of the preceding species, but at the costa of the forewing a broad, at the border of the hindwing an interrupted, brown stripe. Central and South Brazil. Rare.
- nycteus*. **N. nycteus** G. & S. (141 c). ♂ similar to that of the preceding, but the hindwing, except the brown apex, snow-white, and this colour also passes over to the forewing before its anal angle. ♀ white, through the whole forewing runs a broad, brown, black-marked longitudinal band from the base to the border above the anal angle. Central America.

N. grande *G. & S.* (139 i). The largest species of the genus. A broad oval white or yellow band *grande*, begins behind the cell of the forewing and ends round before the inner margin of the hindwing. In front of the border a double row of small white spots, before it a red stripe. Beneath like above, somewhat duller, the small marginal spots larger. There occur ♀♀ with yellow as well as white bands. Colombia. Rare.

N. victrix *Rebel* (139 h). Conspicuous for the hindwings of the ♂ being pointed in the anal part and *victrix*, provided with a straightly cut off border. Dark-brown with a white, rather narrow, joint median band of the wings; behind it a small, curved, red-yellow band, behind this, before the border, an irregular white stripe. Rio de Janeiro, but presumably scarcely near the town, but farther in the mountains and rare. Is said to occur also in the Amazon district (?). The species seems to be transformed by mimicry.

N. phliasus *Cr.* (= *hewitsoni Rebel*) (139 h). Likewise subject to mimicry, reproducing an *Adelpha phliasus*, from its surroundings (*A. phliassa*). The orange spot behind the cell of the forewing projecting in a tooth towards the border passes over into the white median band without any separation. The width and shape of the band varies somewhat according to the habitat. Guiana. Rare.

N. maravalica *sp. nov.* (139 h, i). Only in the ♀ the *Adelpha*-resemblance is distinctly visible by a *maravalica*, separated orange spot standing before the white, though orange-ending median band at the costa of the forewing; it imitates the *Adelpha*-form *duceleia Fruhst.* The ♂ has the shape of the bands of *phillone*, but the upper tip of the band is faintly tinged orange. Isle of Trinidad, presumably also opposite in Venezuela.

N. enimanga *sp. nov.* (139 g as *paulistina*). Without the orange spot before the apex of the forewing; *enimanga*, the white median band is here so much broader that it covers the whole disc of the forewing and the whole hindwing except the border and base. The under surface is all white except a spotted costal stripe of the forewings and the moderately broad brown distal margin of both wings. Paraguay; the species is apparently not common *).

N. phillone *Godt.* (= *phliasus Rebel*) (139 g, h, as *paulistina*). At once discernible from the preceding group by the round border of the hindwing and a rusty-red tinge of the collar and sheaths (what is unfortunately not marked in the figure of the ♀. The white band of medium width varies at every habitat. In specimens before me from Neu-Freyburg the band ends obtusely in front (our ♀-figure), in the neighbouring Rio de Janeiro pointed (♂-figure). In specimens from Theresopolis (or San Pedro?) it is said to be narrower (= *pedronia Stich.*) and in specimens from São Paulo (= **paulistina** *Stich.* 142 g, not 139 g, h, as *phillone*) still *paulistina*, narrower, as narrow as in *victrix*. (The animal denoted as *paulistina* on t. 139 g is another species — *enimanga* — and does not belong to *phillone* *Godt.*, but it is allied to *victrix*, *phliasus* and *maravalica*). — Not rare.

N. velabrum *G. & S.* (139 i). Above the upper end of the white band, being common to both wings, *velabrum*, we notice an orange-yellow preapical spot. This creates the impression of an *Adelpha iphicleola* from Central America. Panama.

N. calyce *Fldr.* (139 d, e, as *calice*). Both sexes brown with black, light-bordered spots before the *calyce*, margin. The moderately broad median band ends in the ♂ above taperingly, in the ♀ broad; the latter exhibits in typical specimens before the border a red-brown band being on both sides shaded with dark-brown. — In the form *mesoleucum* *Bates* described from Baranquilla in Colombia this red-brown band is absent, but the forewings exhibit a white submarginal stripe instead. — From the northern coast of South America, inclusive of Trinidad, to the south as far as South Brazil nearly everywhere common. The butterfly, being an Erycinid, is an uncommonly good flyer which, however, must nevertheless in day-time be invariably beaten out of the bushes skirting the forest-roads. It varies but little in its immense range; in the figured couple (from Rio) the bordering of the white band is almost smooth, in specimens from Cuyaba the inner (proximal) border of the band is somewhat more dentate etc. From Peru there are specimens of both sexes before me, with a pale yellow median band; in a specimen taken in Peru at 2000 m, however, the band is purely white. — **brennus** *brennus*, *Stich.* I cannot distinguish from typical *calyce* neither regarding the description nor according to the ♂ before me having been denoted with this i. l.-name by *STAUDINGER*; of **manius** *Stich.* the ♀ is said to resemble more *manius*, that of *mycone*.

N. mycone *Hew.* (139 e) is, according to *STICHEL*, only a deviating form of the preceding species, *mycone*. The border of the forewing is more rounded, the hindwing of the ♂ somewhat more reduced in the anal part. ♂ above quite red-brown, without the white median band; the ♀ exhibits the latter and, therefore, greatly resembles that of *calyce*, but the band of the forewing is not so round above, but more obliquely cut off. Mexico and Central America as far as Colombia, where also *calyce* occurs.

N. gela *Hew.* (139 f). Very closely allied to *calyce* in the shape and marking, but the band pale yellow, *gela*. Typical specimens originate from the lower Amazon (Santarem); they are represented by our ♀-figure, exhibiting a red-brown base of the wings and a red-brown transverse stripe between the white band and the border of the wings. Specimens from French Guiana have a more blackish-brown base of the wings and, according to the habitat, they are large with a broad median band (opposite the Devil's Island) or small and with narrow bands (Cayenne). Common.

*) According to *STICHEL*, the figure of our *phillone* 139 g, h represents his *paulistina*. Before me, however, are the types of *STICHEL*'s *paulistina* (from the Coll. *RÖBER*) which I figure (142 g). By *STICHEL*'s quotation „*Hew.* 4, fig. 29” in the typical *phillone* *Godt.* we recognize in *paulistina* *Stich.* a very slightly narrower white-banded deviation which cannot be combined with the quite differently shaped *victrix* *Rebel*.

- pelops*. **N. pelops** F. (= *pittheus* Hfsgg.) (139 g). Spelled „*pelope*“ by HÜBNER; it has a much broader median band covering the whole hindwing except the brown border; recognizable by a trapeziform projection of the brown costal band of the forewing. In specimens from Venezuela (Suapure) this projection is broad and has bevelled sides (= *cavifascia* Btlr.), in specimens from Fonte Boa (Amazon) the corners of it are blunted off (♀-figure); Para-specimens exhibit it shortened and almost unspotted, copper-red margins of the wings; in those from Medina (Colombia) the margin of the wings is blackish-brown, nearly without any red etc. — Not rare.
- agle*. **N. agle** Hew. (139 g). Very closely allied to the preceding, but the dark border of the forewing with a red filling, not with red rings. Instead of the trapezoid projection of *pelops* we notice a small comma-spot at the cell-end, projecting into the white of the disc. Range as in *pelops*, Guiana and North Brazil. The distal band may be broader or narrower (= *furva* Stich.) and with more intense (= *quinoni* Weeks) or less intense (*menalcidas* (= *dirca* Stich.) markings. — Common. — **menalcidas** form. nov. (139 f, as *menalcus*) is larger, darker yellow, the margin above black, the marking above extinct, the dark marginal spots beneath smaller, more distinct; from the Kouron River, opposite the Devil's Island.
- chaonia*. **N. chaonia** Hew. (140 a, misprinted into *chionea*) is larger, yellowish-white and has a white crescent in the dark apex of the forewing, a white line embedded in the marginal band of the hindwing. Amazon to Bolivia; on the Rio Songo the subapical white spot is greatly reduced.
- ochra*. **N. ochra** Bat. (139 f) from Bolivia and the Upper Amazon entirely resembles *agle*, but the margin of the wing is black, not redbrown and is traversed on the forewing by a single, on the hindwing by a double, pale-yellow line connected by rungs. — In **sicyon** G. & S. from Central America the yellow line is absent in the margin of the forewing, but in the hindwing it appears treble, not double, and without the connecting rungs. — Rarer.
- regulus*. **N. regulus** F. (= *ebusa* Dbl.) (140 e). The yellow median band is bevelled at its anterior end and does not appreciably expand towards the inner margin of the hindwing. Behind it the forewing exhibits 2 oval spots, the hindwing a stripe parallel to it. Brazil. — Specimens from the Upper Amazon and Bolivia usually have a broader median band (? = *sylvarum* Bat.), but the form varies according to the habitats. Thus both *regulus* and *sylvarum* are reported from Para, but they are still said to be „subspecies“ of one species.
- lamis*. **N. lamis** Stoll (139 c, d). Very similar to *calyce*, but larger, the ♀ with broader bands, the band of the forewing is mostly also more irregularly defined. Easily discernible by the longer and slender palpi of the ♂ (whereas in *calyce* only the ♀ has long palpi) and by the abdomen which in *calyce* appears only white-pruinous at the sides and beneath, being also above white in *lamis*. Mexico to the Amazon, varying greatly. — **azan** Hew. (= *australis* Fldr.) (139 d) is the southern form from South Brazil to the north as far as Bahia, common in Santos where I collected the ♀♀ on blossoming bushes. From those of typical *lamis* they differ by the white band being nearly twice as broad. Among these ♀♀ there flew uncommonly large ♂♂ of *calyce* one of which is by mistake figured as *azan*-♂ (t. 139 d, 2 nd fig.), as I had taken it together with *azan*-♀♀ and, therefore, regarded as the ♂ belonging thereto. The ♀♀ do not only vary regarding the boundary-line of the white band; some have the brown margin of the hindwings filled with red, some not; these, however, are no geographical differences of subspecies. — **completa** Lathy (139 d) are ♀♀ from Peru with a single, medium-broad, regularly bent band. — **molpe** Hbn. (139 b, c) is presumably nothing but a small form of *lamis* occurring from Mexico as far as the Amazon, being mostly very common and living more in the open country than in densely wooded forests. — **caucana** Stich. has only the size of *molpe*, but an especially broad white band. Described from Colombia. — **ipsea** G. & S. are *molpe* from Nicaragua in which the median area is yellowish instead of white and rounded at its upper end. There exist, however, all the transitions to it, so that *ipsea* is hardly maintainable as a distinct subspecies.
- azanoides*. **N. azanoides** Btlr. (139 c). The ♂ entirely resembles that of *lamis*, but it is blackish-brown, the white band above pointed, smoothly defined, in the anal part of the hindwing a yellowish-red band being sometimes stunted to mere traces. The ♀, however, is quite different from that of *lamis* or *azan*, the white median band not broader than in the ♂, the red band in front of the border of the hindwing mostly broad and bright, the under surface variegated. Central America (Costa Rica), Colombia to Bolivia and Peru. In specimens from the two latter countries the bossy spots at the border are larger, higher, and the yellowish-red of the hindwing is reduced in the ♀, in the ♂ it has entirely disappeared above. Not rare.
- lisimon*. **N. lisimon** Stoll (139 b). Sometimes spelled *lysimon*, or *lisimaena* or *lisimond*, resembles *azanoides*, but it is scarcely of half its size, but the marking and colouring above is almost exactly the same as there, which is the case in both sexes. Guiana. — **platea** Ww. (139 b) is a larger form with a broad, not so taperingly terminating white band and a lighter red, occurring on the Upper Amazon and in Peru, where, however, it seems to be rare, while *lisimon* is common in Guiana. — **chimboraizium** Bat., discovered by SPRUCE at 3000 ft. on the Chimborasso, is an alpine form in which the hindwings exhibit red-yellow traces only yet in the anal angle; — in *hesperium* Stich., on the contrary, the red stripe is prolonged towards the apex; from Peru. — **erythroicum** Stich. are specimens with more intensely red markings, particularly such that have several small red spots

also in the cell of the forewing, otherwise they resemble *platea*; — the same small spots occur also in **plinthobaphis** *Stich.*; but there the red band of the hindwing is also expanded almost to the border; Peru.

N. olinda *Bat.* (139 b). Quite similar to *lisimon*, but above there is no red at all, and the white oblique stripe beginning narrowly from the inner margin of the hindwing, grows more and more narrow and dim, so that it is obliterated near the centre of the hindwing. The ♀ which has already the long wings of *mantus* (140 e), exhibits a broader and above less darkened oblique band. Central America, rare. — The Colombian form, **fulminans** *Bat.* (139 b), with a considerably broader median band, is much more common.

N. nealces *Hew.* (140 d). A very rare butterfly of which I have seen but few specimens. The forewings similar to those of *baeotia* (140 d), in the hindwings, however, the whole inner-marginal part is orange. Beneath forewings likewise greatly resemble those of *baeotia*, the hindwings, however, are in the ♂ quite light-yellow with 5 brown marginal spots in front of which a narrow, small, curved brown band winds from the apex towards the anal angle which, however, it does not reach. ♀ with a broad, pale-yellow median band. Known to me only from Cayenne, from where also the figured specimen.

N. baeotia *Hew.* (140 d as *baeotica*) looks almost like a small *olinda*. The light median band is sometimes darkened by grey, varies somewhat in width and its upper end is obtuse in the ♂. The ♀ mostly has also whitish fringes of the hindwings. Guiana, Amazon. — **minuta** *Drc.* (142 h) is a form with a much broader and brightly white median band, a broad white border of the hindwing in the ♀ and an almost snow-white, scarcely black-spotted under surface of it. Before me from Matto Grosso, but also from the Chiriqui. At some places very common.

N. mantus *Cr.* (140 e). Larger than *baeotia*, similarly marked, but with a reflecting light-blue costal area of the forewing and a similar distal half of the wings; the surroundings of the white band black. — **ab. thryptica** *Stich.* (140 e) has a small rusty-yellow semi-band proceeding from the inner margin of the hindwing. From Guiana and Venezuela to Brazil. Not common.

N. omois *Hew.* (139 e). A small butterfly from the Amazon, forewing dark brown with a white, large triangle placed on the inner margin; hindwing white with a black-spotted marginal band. In front of the marginal spots runs a distinctly though irregularly defined, golden-yellow band. Rare.

N. caricae *L.* (139 a). Dark brown, with a broad white band beginning taperingly behind the cell of the forewing and terminating broadly at the inner margin of the hindwing. Costal part of the forewing with orange-red spots, in front of the border of both wings an orange-yellow band, behind it, in the brown shade of the border, whitish bows. Abdomen white. According to the habitat and even to the season, the distribution of the red-yellow and black varies considerably, as well as the size which varies between 20 and 36 mm in my specimens from Cayenne and Colombia. **ab. carmentis** *Stich.* has the white increased, being continued lacini- formly at the upper end of the median band; — in **carissima** *Stich.* the marginal band of the hindwing is without the whitish bow-streaks. Guiana and Colombia. Here and there very common.

N. acherois *Bsd.* (139 a, only the ♂). Costal and distal parts of the hindwings blackish-brown, with broad orange-red fillings. Behind the upper end of the white median band a white subapical spot. — South Brazilian specimens exhibit a narrower golden-yellow border of the hindwing; the small white subapical spot may be stunted to traces, but also so enlarged that it is confluent with the median band. These forms ought not to be denominated, but the South Brazilians were separated as **erymanthus** *Mén.* (139 a, also the figure denoted as *acherois*-♀). Guiana to South Brazil; common.

N. balbinus *Stgr.* (139 a). Typical *balbinus* differ from our specimen originating from Chuchurras (Rio Polacaza) by a still broader red band of the hindwing, which, however, has no black dots and neither passes over to the forewing. The typical *balbinus* come from Rio San Juan in Colombia; only the ♂♂ are known.

N. haematostictum *G. & S.* (= *haemostaticum* *Stich.*) (139 a) from Panama and the adjoining part of Colombia resembles a ♀ of *acherois*, but it has more white which is slightly darkened by yellowish, and only in the marginal band of the hindwing there is yet an orange-yellow filling. Rarer.

N. onaeum *Hew.* (= *blakei* *Weeks*) (139 b). White with a dark-brown marginal band; cellular part of the costal stripe with red-yellow spots, before the marginal brown in the anal part of both wings there is likewise red-yellow. Central America from Honduras to Panama, Colombia and Venezuela; apparently not common.

N. chione *Bat.* (= *stilopteris* *Btlr.*) (139 f). Snow-white, with black margins, without any red-yellow, the white discal part irregularly defined. In the black marginal band white arcuate lines. Amazon to South Brazil.

N. menalcus. Of this species there exist 8 forms. In order to preserve the denominations, we might make the following differentiations: **cachrus** *F.* (= *damon* *Hbn.*) is a large form with a pale-yellow ground-colour, a copiously marked, proximally irregularly defined, jet-black marginal band. This form being especially common in Colombia, but occurring also in the Amazon District and Guiana, is represented by our ♂-figure; the ♀ of it is figured 142 h. — The animal figured 139 f as *cachrus*-♀ already forms a transition to the typical form of **menalcus** (= *onoba* *Hew.*) a couple of which is figured 142 h, being distinguished by a proximally smoothly

- defined marginal band and a paler ground-colour, as well as a narrower dark margin; common in French Guiana.
- heliotis*. — **heliotis** *Bat.* differs considerably by the ground-colour being a pale ochreous-yellow with a brownish tinge. —
- leucidiodes*. **leucidiodes** *form. nov.* (142 i) is a pygmean form of which a series is before me from different places of Guiana and which may be the inhabitant of particularly dry habitats. —
- ascolia*. **ascolia** *Hew.* (142 k) is a large form, closely allied especially to *cachrus* and *menalcus*, recognizable by the very broad margins and a small red band in the anal part of the hindwings. —
- ascolides*. **ascolides** *Bsd.* exhibits an entirely black abdomen which in *cachrus* is whitish at the sides and beneath, partly also above; otherwise not differing from *ascolia* worth mentioning; from Central America. —
- augea*. **augea** *Drc.* (142 k) differs from *ascolia* only by a greater extent of the red band of the hindwing reaching in the ♂ almost to the apex, in the ♀ even beyond it to the forewing. Most of these forms are connected with each other by transitions and may scarcely be assumed to be subspecies. Common.
- eutrapela*. **N. eutrapela** *Bat.* may also be only a form of the preceding species. Forewing with a dark-brown costal streak, a dark-brown base and a broad brown marginal band. From the costal stripe small transverse stripes extend into the white of the wing, which projects with 2 continuations into the brown marginal band; in the latter we notice the white arcuate streaks, being also distinct in *menalcus*, in front of the marginal band at the anal angle sometimes a little red-yellow. Recognizable by the abdomen being all white on both surfaces. Lower Amazon.
- ninias*. **N. ninias** *Hew.* (140 d, as *minias*). White, without the dark costal stripe, the apical part of the forewing broadly violettish-brown, with white markings and anteriorly shaded with an ochreous yellow; hindwing with a similar marginal band. Upper Amazon. —
- medusa*. **medusa** *Drc.* (140 d) which we figure from Humayta, but which flies quite similarly also in Peru, exhibits the marginal band of the hindwing reduced to few small dark marginal spots; — and in
- galactina*. **galactina** *Stich.* there is no marginal marking whatever on the hindwings; from Cuyaba in Matto Grosso and on the Amazon. — Beside such specimens with purely white hindwings, however, there are near Cuyaba also such with a complete black, proximally undulately defined marginal band of both wings; they also have the dark basal spot along the costa of the forewing further expanded and they would then also have to be denominated: **undimargo** *form. nov.* (142 i). — Not rare.
- leucosia*. **N. leucosia** *Hbn.* (140 d). Pale yellow, at the apex and above the anal angle of the forewing as well as at 3 places of the margin of the hindwing violettish-brown, white-marked spots. The base of the wings is likewise brown. Lower Amazon: Obidos, Santarem, Para. Rarer.
- kadenii*. **N. kadenii** *Fldr.* (140 d). This species unknown to me in nature resembles an *acherois* in which the white is increased, the dark marginal band reduced and the orange stunted to a small subcostal spot. In front of the border, the marginal band is traversed by a metallic line. Venezuela. — STICHEL thinks it probable that the species belongs to the following genus.
- cyneas*. **N. cyneas** *Hew.* (139 e). Yellow with a black, unmarked margin. A mimetic copy of a homochromous *Cylopodina* together with which the animal flies in Peru and Bolivia. The figured specimen originates from the Chanchamayo and has a broader margin than Bolivians. Beneath exactly like above. — The *Nymphidium* are not mimetic and it is, therefore, not likely that this species belongs here. The compact structure and the exterior borrowed from other butterflies much rather assign the species into the following genus, and the latter is again probably rather closely allied to *Esthemopsis*, *Ithomiola* or another of the mimetic genera than to the *Nymphidium*, being similar merely in the exterior.

89. Genus: **Imelda** *Hew.*

Only 2 or 3 distinct species are reckoned hereto, but presumably also the last species enumerated among the *Nymphidium* belongs to this genus, since it certainly does not represent a genuine *Nymphidium*. KIRBY inserts the genus between *Nymphidium* and *Lucilla*, MENGEL adds it to *Zelotaea*, STICHEL places it between the (newly established) genus *Elaphrotis* (*telephus* *Cr.*) and *Astraeodes*. The species have an uncommonly small head with a narrow forehead, a globular thorax and an abdomen that does not reach the anal angle of the hindwings. The wings, of a normal shape, exhibit the cell of the hindwing comparatively very long for an *Erycinidae*; the upper median vein of the forewing branches off far before the lower cell-angle.

- mycea*. **I. mycea** *Hew.* (= *glaucosmia* ♀ *Thm.*). ♂ whitish-yellow, ♀ mostly paler; in the black margin at the apex 3 small white spots and in front of the border a yellow, lustrous line. Colombia. —
- aenetus*. **aenetus** *Hew.* (= *oenetus* *Mengel*) (128 i) has the small apical spots smaller and the metallic line in the marginal band of the hindwing bluish-grey; Bolivia and Peru. — As
- leucophryne*. **leucophryne** *Stich.* (128 i) I figure a specimen from Marcapata (Peru, 4500 ft), beside a Bolivian specimen, in order to show on what slight differences this form is based. — Not very rare.
- glaucosmia*. **I. glaucosmia** *Hew.* (128 i). Dark blue, of a metallic lustre, parallel to the border 2 or 3 black lines; recognizable by the small white subapical band of the forewing. Ecuador. — In a specimen before me from Colombia (Pacho, 2200 m, captured by FASSL) the proximal lines are straighter, the small white band traversed by strong veins, and in front of the small band there is yet a tiny costal spot. I consider this to be only a local aberration; STICHEL denominates such Colombian specimens **terpna**. — *glaucosmia* shows a homochromism with *Mesosemia*, the preceding species with certain *Terias*.
- terpna*.

90. Genus: **Lucilla** Hew.

This genus is placed by KIRBY between *Imelda* and *Thisbe*, whereas STICHEL justly adds it to *Lymanas*. The shape of the body and wings resembles the preceding genus. As to the neurulation, the genus differs from *Imelda* particularly in the system of the subcostal veins of the forewings, and the cell of the hindwing in *Lucilla* does not reach the centre of the wing, as in *Imelda*. Only 4 forms, being closely allied to each other, are known. All the *Lucilla* are rare.

L. camissa Hew. (128 c). A true copy of a *Catagramma* of the *brome-* and *denina*-group with a large orange spot of the forewing and a blue lustrous spot of the hindwing. Ecuador. *camissa*.

L. aterra Sm. From Colombia. Differs from the figured *pomposa* Stich. (128 c) by a narrower red band of the forewing and by the rays of the hindwings which are more distinct and more sky-blue, particularly towards the margin. *pomposa*, not lying before me, is described from Peru. *asterra*, *pomposa*.

L. suberra Hew. Black, in the disc of the forewing a large, miniate disc, similar to certain *Heterocera suberra*, from the *Nelo splendens*- and *veliterna*-group, together with which the species flies in Ecuador. Very likely this homochromy, however, is only secondary, and the model of both, the *Lucilla* as well as *Nelo*, are *Actinote* from the *callianthe*-group, with which they swarm on the sands of the river-banks.

91. Genus: **Thisbe** Hbn.

The genus is so very much altered by mimicry that it is difficult to find out its real alliance. STICHEL places it between *Rodinia* and *Lemonias*; it has nothing in common with these two. STICHEL, however, has justly abolished the insertion of a *Thisbe*-species in the *Nymphidium*, which had proceeded from a mimetic mystification. The body is uncommonly strong, the head Nymphalid-like, the palpi projecting, the antennae very long, in the ♂ to $\frac{3}{4}$ of the length of the costa. The hindwings pointed at the anal angle, in *lycorias* even produced in a broad tooth. The butterflies are less rare than is the case in most of the other mimetic species.

Th. lycorias Hew. (140 f). Dark brown with a white oblique band, above and behind which there are white spots. Round the white median band are above red-yellow spots, beneath there are such only in the anal areas of both wings. Mexico and Central America. The typical form originates from Honduras and has in front of the margin of the hindwing another broad white stripe, as it is also found in all the Mexican specimens. — ab. **adelphina** G. & S. (140 f) shows this distal stripe obliterated. — **germanus** G. & S. (140 f) distributed from Colombia to Ecuador has the red spots much smaller, they are mostly also not so numerous in the cell of the forewing. — **incarum** form. nov. (140 f) from Peru, from a very dry habitat, deviates the most from the typical form; it has a lighter ground-colour, a very narrow median band, the orange spots are pale and dim, particularly the one above the anal apex of the hindwing. — *lycorias* is in some places common. *lycorias*, *adelphina*, *germanus*, *incarum*.

Th. irenea Stoll (= *belise* Stoll [♂], *belides* Stich., *atlantis* Stich.) (140 f, g). ♂ black with a white median band embedded in blue, above the upper end of which we see a small whitish oblique band. The ♀ is quite different, without any blue above at all and with a broader median band and another, second oblique spot behind the small subapical oblique band. From Guiana there generally come ♀♀ with narrower bands than from Colombia (*belides* Stich.), but these forms are not to be arranged according to patriae. We figure a narrow-banded ♀ from above, a broad-banded one from beneath. Both are from Venezuela. We can just as little assert that the Isle of Trinidad possesses a subspecies of its own (*atlantis* Stich.); the latter is said to have more blue in the distal area of the ♂-hindwing. Such specimens, however, are before me also from Suapure. Much rather Costa-Rica-specimens would have to be denominated, in which the median band of the ♂♂ exhibits only quite a narrow blue bordering. In a ♂ from „Bolivia“ the white subapical stripe is as long and broad as in ♀♀ from Surinam etc. Central America and Guiana to the Amazon and Bolivia, local but mostly common. Like the *Dynamine* (being imitated by the ♀), the butterfly mostly flies about at a hardly accessible altitude on the tops of young trees. *irenea*.

Th. molela Hew. (140 g). In the ♂ the blue median band of the forewing is not white-pupilled, but it has only at its upper end a tiny white spot. In the hindwing the white band of *irenea* is replaced by a dull, strigiform brightening which is often scarcely perceptible and grows distinct in some specimens (as the figured ♂ from the Amazon) only at the inner margin (ab. *palilis* Stich.). The ♀ resembles above that of *irenea*, but the under surface is marked quite differently, as the figures show. Not rare in Venezuela (Suapure). Guiana, Para and so on. *molela*.

92. Genus: **Anatole** Hbn.

The genus consisted only of 1 species to which 3 more were recently added as being congeneric. They are robust animals, of the structure of the *Nymphidium*, with a considerable sexual dimorphism. The veins do not exhibit any peculiarities; the 3rd subcostal vein rises with the 1st radial from the upper, the 3rd radial with the 1st median from the lower angle of the cell of the forewing. The species are common at their habitats.

- glaphyra*. **A. glaphyra** Ww. (140 h) greatly approximates the *Thisbe*, also in the shape of the wings (preanal tooth of the hindwing) and in the shape and marking of the ♀, so that it might better be added to *Th. molela*. ♂ similar to the ♀, the latter like *molela*, but the wings from the white band to the base of the wings bluish-grey. Under surface white, with golden-brown markings. South Brazil and Paraguay. — **campicola form. nov.** (140 h) from Corrientes differs by a bright yellowish-brown marginal band of both wings and by a considerable size. — **modesta** Meng. is smaller, the shades in the proximal half of the wings are duller and scarcer, and the white spots before the border of the hindwing are smaller; Paraguay and the adjoining part of Brazil. — Not rare.
- zygia*. **A. zygia** Hbn. (= caletor *Dalm.*) (140 g). Dark brown, with white and yellow dots, hindwing of the ♂ with a white colouring of the anal part, being continued upwards by golden-yellow; in the ♀ an irregularly shaped band runs from the centre of the forewing to the proximal margin of the hindwing. Guiana and Venezuela to the Amazon. Guiana-♂♂ differ from the (figured) Amazon-form by the yellow not being defined from the white of the anal part of the hindwing. The ♀ varies still more; in the form **chea** Hew. (140 g as *epione*) the band of the hindwing is narrow and that of the forewing continued to the costa by a small oblique band; Bolivia, Amazon, inhabiting with typical ♀♀ the same district, but other flying-places. — **caliginea** Btlr. is a Mexican butterfly known to me only from the figure; it exhibits above only yet traces of the white, i. e. small chains of postdiscal spots on the forewing and an obliterated median diffuse spot on the hindwing; its position is not quite certain, since the figure and description are not very exact. — ♀-form **egaensis** Btlr. (= *amasis* Hew.), occurring not only on the Amazon, but also beside the other forms in Guiana, has a dull brown ground-colour and a uniformly curved, uninterrupted white band from the middle of the costa of the forewing reaching close to the front of the inner margin of the hindwing. *epione* Godt. refers to South Brazilian specimens that do not differ more from those from the Amazon than the latter differ among each other; of 16 specimens before me from Itaituba there are not 2 entirely alike; some belong to the form *baroptenosa* Stich. (more yellow dots of the forewing than white ones, ♀ like a *chea* but the band of the forewing without the strangulation in the middle); *peristera* Stich.: in the forewing more white dotting, only the discal area slightly dotted in yellowish, without the blackish-brown spot in the anal angle of the hindwing; from Bolivia. — Many such forms could be established from the copious material at hand.
- agave*. **A. agave** G. & S. (142 i). Likewise very variable; greyish red-brown, with dark spots; the distal part of the hindwing mixed with rusty-red. Forewing with 2 white spots, the costal one being small, the discal one larger; hindwing with a broad white band not reaching as far as the inner margin. Costa Rica to Colombia, the figured specimen from the Chiriqui in the Coll. BANG-HAAS. The ♂ differs from the figured ♀ by the costal of the forewing being very small and the anal part of the otherwise brown hindwing snow-white. There are, however, also ♀♀ that resemble these ♂♂, but are larger and somewhat more greyish-brown than red-brown. Rare; in thinly wooded savannas.
- leucogonia*. **A. leucogonia** Stich. Unknown to me; is not compared with any of the species known. The description runs thus: 1 ♂ from the Rio San Juan in Colombia; wings above brown, basal half darker, proximal dots, an angled discal transverse line, a row of dark small submarginal dots, hindwing with an oblong white anal spot. Under surface whitish, forewing with grey scales; proximal dot, row of discal dots and submarginal spots dark.

93. Genus: **Tharops** Hbn.

The butterflies of this genus are characterized by the very robust structure, the broad thorax, the uncommonly compact shape, the relatively short costal margin of the thick and hard wings. Only in the Gen. diurn. Lep. some are placed to *Lemonias*, otherwise they have always been dealt with separately owing to their deviating habitus. They have a somewhat whizzing, Hesperid-like flight and, in day-time in the sunshine, they visit blossoms on which they sit with their wings spread horizontally. Most of them exhibit, at least in the male, bright metallic colours with a very glaring lustre in the sun; in contrast with most of the other *Erycinidae*, some *Tharops* are common butterflies.

- hebrus*. **Th. hebrus** Cr. (= *pelidna* Hbn.) (138 d). In the ♂ the forewings are above spotted in a metallic blue; the hindwings entirely blue except the black-marked costal margin and apex. In the anal region a white brightening which, however, is covered so much with lustrous scales that it also shines blue in the sun. The ♀ is sepia-brown, with a red-shining apical area of the forewings; before this a blackish cloud behind which, at the costa, there often stands a small light spot. Guiana and the Amazon District. In Colombian ♂♂ the white of the hindwing is increased; in Bolivian specimens the white does not only cover half the hindwing, but it is also purer and rectilinearly cut off towards the metallic-spotted basal and apical parts; this is **ergines** *form. nov.* — On the contrary, **ion** Ww. (138 d) from Para exhibits the white of the male hindwing confined to the anal fold, the black apex of the forewing being unspotted. — **gemma form. nov.** (138 d) is the extreme form; the forewings have an entirely black costal half and of the white of the hindwing nothing whatever is noticeable. This form differs also entirely beneath from the typical form being blackish-dotted on a whitish-grey ground; its under surface is bestrewn with rusty-brown squares. In very dry districts, such as near Carabaya. — **cicuta** Hew. is presumably also only a form of *hebrus*. The ♂ is above of a lustrous light-blue, sparsely dotted in black, the apex of both wings and the base of the hindwings thickly black; ♀ dark brown, like that

of *ion*, but without the rusty red in the apex and the cloud below the costa, but dotted in black and with a black submarginal band. Amazon. — The species is not rare.

Th. clotho *Stich.* (138 b). This species not lying before me is based on a single ♀; the black upper *clotho*. surface is interspersed with diverse light markings some of which are of a blue reflection. We figure the type in the Berlin Museum, from Peru. Under surface greyish-yellow, dotted in brown; in front of the border lighter with a series of dark longitudinal spots.

Th. felsina *Hew.* (138 a, as *felina*). Sepia-brown, the distal part of the hindwing dull white. Under *felsina*. surface quite whitish, only the apex of the forewing darkened. Above darker markings, beneath dotted in blackish-brown. In the ♂ the white of the hindwing has a very faint bluish lustre. South Brazil. This species is rarer.

Th. pretus *Cr.* (138 c). Above black with golden-green undulate and dentate markings. Under sur- *pretus*. face dirty greyish-brown, with whitish and dark red-brown markings. East Brazil. — Colombian specimens exhibit duller green markings and have a yellow under surface being only in the ♀ more copiously marked in dark. — **picta** *G. & S.* (138 d) has a much more brightly lustrous, but more bluish-green marking of the upper *picta*. surface, the under surface being more copiously decorated with whitish squares. Central America; Bolivia. The ♀ is above like the ♂, also of the same lustre, but it is larger. The butterflies are like all the *Tharops* fond of the open country, not of the woods.

Th. menander *Cr.* (= *petronius Godt.*) (138 b). Above very difficult to distinguish from the follow- *menander*. ing species, but easily recognizable by the grey under surface exhibiting across the centre of the wings a somewhat dentate, brown shade projecting under the cell-end towards the base. Northern part of South America.

Th. nitida *Btlr.* (138 c) is the name of greenish-blue specimens with few dark spots above. According *nitida*. to STICHEL they originate from South Brazil, though the specimens from there mostly have a violet and not green reflection. — **thallus** *Stich.* is also said to have „often“ a greenish-blue ground-colour; moreover, the *thallus*. black in the apical part of the wings being reduced, it exhibits more distinctly the dark marking of it. As its patria the western part of the northern districts of South America is stated, though the forms are presumably difficult to separate geographically.

Th. coruscans *Btlr.* (143 e). Above very similar to the preceding and like there it is sometimes smooth *coruscans*. and bright as a mirror, sometimes very much black-spotted, with a blue, green or purple glossy upper surface. Easily distinguishable by the under surface being grey, at the border darker and the disc of both wings being rather uniformly covered with greyish-brown dots and comma-stripes. Of the small marginal spots those below the apex and in the anal part of the hindwing often are particularly bright. Amazon, Bolivia. Common.

Th. purpurata *G. & S.* (138 c). Above blue, less spotted, in the anal part of the hindwing 3 dark macular *purpurata*. bands above each other. Under surface yellowish-brown with whitish dusting and chestnut-brown marking. Central America.

Th. glaucoma *Hbn. G.* (138 b). Somewhat like the preceding species, but the hindwings in the ♂ almost *glaucoma*. without any markings, except the broad dark margin; most characteristic is the under surface exhibiting on the forewing large, on the hindwing small ringed eye-spots in front of the border. Brazil, rarer.

Th. splendida *Btlr.* Larger, the ♂ with a very pointed apex of the forewing and a long-stretched anal *splendida*. part of the hindwing. The black spots are arranged in 3 or 4 rows on the metallic bluish-green upper surface. The ♀ has on the forewing, above the blackish-brown disc, dispersed metallic bluish-green patches; in the hindwing particularly the costal part is of a bright light-blue. Para. — **superba** *Bat.* (143 c) from the Amazon is *superba*. presumably scarcely a different species; the ♂ has more rounded hindwings, above of a bright metallic green, in the disc of the forewing and the costal part of the hindwing of a pure cyan-blue; beneath the ground-colour is a rusty yellow. The ♀ has no more blue at all on the forewing; on the hindwing this is confined to the costal part. Apparently very rare.

94. Genus: **Dysmathia** *Bat.*

Mostly attached to the preceding genus, but of a considerably punier structure, the wings more delicate, the forewings very broad, the antennae shorter. Only 3 or 4 species are known from the Amazon and Guiana. The butterflies seem to be rare.

D. portia *Bat.* (138 a). The very broad wings above dark-brown with copious black spots arranged *portia*. in rows; the inner-marginal part of the forewing and the whole hindwings are above of a delicate violettish-blue lustre, though not reflecting as in the *Tharops*. Under surface dark yellowish-brown, the marking similar to that of above, the dark spots smaller. Guiana and Lower Amazon. — **glaucogonia** *Stich.* is somewhat smaller, *glaucogonia*. the small dark spots above partly covered up by small blackish clouds, the marginal area of the wings lighter blue; Guiana.

D. cindra *Stgr.* (138 a). Above quite pale sky-blue with irregular black streak-markings. Under sur- *cindra*. face still lighter, with a dark-shaded anal part of the hindwing. Twice as large as the preceding species. Lower Amazon.

costalis.

D. costalis *Bat.* Above greyish-brown, the forewings with 3 dark streaks in the cell and some irregular blackish markings; towards the border the colouring turns reddish. Hindwing with 6 dark lines, the 4th of which is bent and interrupted. Under surface bluish-grey, the marking similar to that above. Teffé.

95. Genus: **Pandemos.**

This genus, the 3 hitherto known species of which must yet be regarded as not fully ascertained with respect to their homogeneousness, comprises only large and rare animals. One species, *godmannii*, is presumably — anatomically it is not known — well attachable to the *Tharops* dealt with last; but I do not know the ♀ which may look quite differently and may approximate an *Eurybia*. The two other species are entirely unlike this species as well as among each other. Head stout with large eyes and a medium-broad, flat forehead, palpi projecting but not very long, with a thin terminal stylus, wings differently shaped in each species, in the ♂ of one species with black scent-spots.

godmannii.

P. godmannii *Dew.* (128 k as *godmani*). Forewings similar to those of the ♀ of the preceding species, but the white costal diffuse spot extends as a small curved band almost to the anal angle and the ground-colour is more red-brown than dark brown. The blue of the hindwing, which in *Tharops superba* is mostly covered by black in the distal part, covers here the whole wing except the yellowish-brown inner-marginal stripe. Undoubtedly very rare. The figure according to the specimen in GODMAN's collection. Mexico.

pasiphaë.

P. pasiphae *Cr.* (= *arcos* *Cr.*, *ormenus* *Hbn.*, *perigone* *Godt.*) (128 k). ♂ with a less falciform, but still pointed apex. Here also the forewing is dusted with a dull violettish blue except the blackish apical part. Where the forewing and hindwing cover each other, there stands a black scent-spot. ♀ dull white with a broad dark margin of the forewing, of the exterior of a *Pieris orseis* (18 f). ♂♂ from Guiana have a blacker upper surface, those from the Rio Madeira a very bright blue one, and in ♀♀ from Colombia (Villavicencio) the border of the forewing has but quite a faint dark shade. Guiana to Colombia, Amazon and Peru.

*palaeste.**salvator.*

P. palaeste *Hew.* (128 k). ♂ above blackish-brown, the distal part of the hindwings with bluish-grey, sometimes greenish-lustrous longitudinal spots. Colombia. — In the form from Costa Rica, **salvator** *Stich.*, the bluish-grey radiate spots extend towards the base as far as beyond the centre of the hindwing, and before the anal angle of the forewing is a red semi-band. The ♀ is not described.

96. Genus: **Stalactis** *Hbn.*

The *Stalactis* are distributed from Central America to Paraguay and are almost all common animals. They are butterflies of more than medium size varying little in the shape, of a massive, in the ♀♀ clumsy structure. Head long, but not very broad; eyes large, palpi long, especially in the ♀, the end distinctly bent down. Antennae thick, filiform, at the end a scarcely noticeable thickened club. Thorax and abdomen strong, in the ♀ clumsy and so heavy that a flight like that of *Heterocera* or *Danaiid* is produced thereby. Legs stout and strong. Wings broad with a rounded border, shaped like the wings of *Actinote* or *Ithomiini*. In the veins the uncommonly long cell of the forewing is worth mentioning; the cell seems to some degree still more prolonged by the posterior discocellular reaching the 3rd radial only far beyond the rising of the upper median vein, which is also the case on the hindwing. The construction of the veins thereby makes a somewhat tugged impression, as if the wing had been stretched into a shape dissimilar to its original one, by secondary influences. This influence might be explainable by the effect of models (*Acraeini*, *Ithomiini*) which have influenced all the *Stalactis* known without any exception. The larvae are very differently represented; the actual shape is presumably that of a compact, cylindrical body with small fine spines across the dorsum and at the sides; the pupa is fastened to the cremaster similarly to that of *Hades noctula*, of an oblong shape slightly strangulated behind the thorax, yellowish — or bluish — white with longitudinal rows of black spots (*St. calliope*). The butterflies are common; they fly in day-time in the sunshine, in a slow flight similar to that of their models, and drink from flowers; in this occupation they are so daring that they may be taken away by the hand if care is used. On being touched, they feign to be dead by folding up their wings above the back, bending the antennae under the body and folding their legs together; in this state they may be cautiously placed on the ground, like a captured *Gonepteryx rhamni*, without fear of their flying off immediately. Otherwise the animals rest beneath leaves with their wings kept flatly roof-shaped, the abdomen hanging down curved like a sabre.

*phlegia.**phlegetonia.**irion.*

S. phlegia *Cr.* (143 c). Black, body and wings covered with white dots, the base of the wings of a bright red-brown. Guiana, to the south as far as Para. — **phlegetonia** *Perty* (= *phlegia* *Hbn.*) (143 c) is the southern form flying in Central Brazil, Paraguay, and Bolivia; here there is yet a red-brown, irregular band between the basal brown and the border, as it is only sometimes indicated beneath in typical *phlegia*. — **irion**

form. nov. (143 c) is a very small pygmean form flying in May in (the town of) Goyaz. — **nocticoelum** *form. nov.* (143 c) is a form from Obidos, quite black with white dots, the brown at the base of the wings having disappeared except some traces of it. — **sontella** *Schs.* (143 d) finally is the form from Paraná; here there are only quite few white dots, on the upper surface of the body none at all; the shape of the body and wings, moreover, deviates considerably from the other *phlegia*-forms, so that I doubt whether it belongs to *Stalachtis*; the shape much rather resembles *Apodemia stalachtoides* from which, however, it differs by the silvery white (in the latter) abdomen which is red-brown in *sontella*. — In **venezolana** *form. nov.* (143 c) the brown-red colouring is replaced by a light orange, so that it resembles the following species. In some places rather common.

S. susanna *F.* (143 d). Similar to *phlegia*, but recognizable by the shape of the distal orange band which stands only in the apical part on the forewing. Besides there are never white or black dots on the orange parts of the wings. Near Rio de Janeiro the distal orange band on the fore- and hindwing is broad and indented in the middle of its proximal border; in Espiritu Santo these bands are already narrowed and in specimens from São Paulo they are interrupted. South Brazil.

S. euterpe *L.* Black, only the orange bands in the distal parts of the wings are present, no orange at the base. The black part of the wings covered with white dots and small longitudinal spots. — **latefasciata** *Stgr.* (143 b) which we figure from the Itaituba, has broader orange bands than typical *euterpe* from Guiana; and **adelpha** *Stgr.* (143 d) from Obidos, Pará and other places on the Lower Amazon has the orange band only in the forewing, in the hindwing it is above absent altogether and beneath only faintly noticeable. Common.

S. magdalenae *Hw.* (143 c). This and the following species imitate *Mechanitis* resp. *Melinaea*, whereas the models of the preceding species were *Actinote*. The apical part of the forewing contains 2 white macular rows, whereas in the whole proximal part of the forewing the orange colour is predominant. Black are some discal spots of the forewing, its inner margin, and the margin as well as a longitudinal stripe of the hindwing. Colombia, where also, though at other habitats (Rio San Juan), the form **cleove** *Stgr.* occurs exhibiting only one white macular row in the apical part of the forewing. Rarer.

S. calliope. Above orange-red with black stripes and spots, and a black, white-spotted apex of the forewing. As the typical **calliope** *L.* (143 b) the form in LINNÉ'S collection ought to be looked upon as correct. From Surinam; the spots of the middle stripe of the hindwing are separated by the red-orange veins, under surface almost exactly like above. — In **terpsichore** *form. nov.* (143 c) from French Guiana the black is considerably increased, the middle stripe of the hindwing no more broken up into spots, the apex of the forewing broader black etc. — **eugenia** *Cr.* (= *calliope auct.*) (143 b) has the hindwing entirely black except a red longitudinal stripe; Surinam, but at different habitats from those of the typical form. — **crocota** *Stich.* (= *calliope Clerck*) has distally yellowish-tinged forewings; this yellow discoloration occurs in all the modes of marking and is not bound to any place. — **voltunna** *Stich.* has the same light-yellow discoloration as *crocota*, but beneath, except a costal stripe, quite black hindwings. It is mentioned from Ecuador; but the Ecuador-specimens before me exhibit the black under surface of the hindwings, but above they are orange-red, without any yellow. — **bicolor** *Stgr.* has the apex of the forewing likewise orange-red, not broad black, but only quite narrowly bordered in black, with 4 or 5 black punctiform spots. — Common.

S. phaedusa *Hbn.* (143 d). Wings hyaline, with black veins and margins, marginal area broad orange. In Guiana-specimens also the inner-marginal part of the forewing is hyaline; those from the Amazon (Obidos) exhibit the latter dusted with violet. — In **exul** *form. nov.* (143 d) from the Kouron River opposite the Devil's Island the orange in the marginal band has disappeared except some faint traces. — In **phaloe** *Stgr.* (143 e) from the Upper Amazon the orange is greatly increased and the disc of the forewing scaled in violet. — In **duvalii** *Perty* only the hindwings have a broad orange marginal band faintly passing over only to the anal angle of the forewing; the hindwings, however, are like the forewings violet except small strigiform spots in and behind the cell. — Common.

S. zephyritis *Dalm.* (= *margarita Bat.*) from Guiana greatly approximates the preceding species, but it is recognizable by the white-powdered under surface of the hindwings; on the forewings the inner-marginal part is violet, on the hindwings the costal part is black, the other rest of the wings hyaline, with black veins. — **evelina** *Btlr.* (143 d) from the Amazon are *zephyritis* in which also cellules 1 b and 2 in the forewing are dusted with a bluish grey. — Not rare.

S. lineata *Guér.* (143 d). Wings black, between the veins narrow hyaline streaks, before the apex of the forewing an orange crescentiform spot. Lower Amazon. In specimens from the Rio Madeira the orange spot grows twice as large and has an oval shape. At other places in the Amazon District it grows, on the contrary, smaller and may disappear except faint traces; this is **trillii** *Btlr.* (143 e). Rarer.

97. Genus: **Aricoris** *Hw.*

This genus differs from the preceding by the mimicry being confined to the female sex which it has altered to the greatest extent. The only species not being sexually dimorphous resembles a Satyrid, but still it cannot be properly regarded as mimetic, since it has a somewhat different flight from that of the equally large *Euptychia* which might have served as models. This species, moreover, deviates from the other *Aricoris*,

so that STICHEL left it solely in the genus as being not congeneric, whereby it would become necessary to eliminate all the other *Aricoris* without exception from the genus. It probably suffices to distinguish 2 groups. As in the preceding genus, the palpi are somewhat projecting in the ♂, in the ♀ long, thin, lowered at the ends. The body of the ♂ is slim, in the ♀, however, uncommonly stout for a day-butterfly. The antennae are in the ♀ filiform, at the ends unnoticeably thickened, in the ♂ with small clubs being noticeable above. In the shape of the wings and in the veins both sexes of *Aricoris* differ from one another much more than the genus itself deviates from most of the other Erycinid-genera; only from the preceding genus they deviate by the subcostal and the upper radial of the hindwing branching off before the cell-end, instead of far behind it as in *Stalachtis*. The few forms I observed flew in the open country, most of them presumably occur in the forest. They are mostly rare and so incompletely known, that of many only one sex is known and one hardly knows how the sexes belong together.

epitus. **A. epitus** Cr. (= *cepha* F., *epiphanis* Stich., ♂ = *bias* F., *jaera* Hbn., *cataleuca* H.-Schäff.) (141 h). The ♂ is above quite black with a dull blue reflection, beneath blackish-brown with a whitish-powdered border, resembling a homochromous *Euselasia*, sometimes of this species, sometimes of that species, according to the (great) variability of its size. The ♀ has an orange basal part of the wings and in the distal part of the forewing a large, bone-yellow oval which is broadly confluent with the basal yellow in the ♀-form **cephisa** Stich. (141 h). — In **paroemia** Stich. it runs band-shaped through the distal part of the forewing and extends in a thin costal stripe as far as the base of the wing whereby the appearance of a *Methonella*-♀ is feigned. On the whole, the marking is variable; the bone-white and orange-yellow parts vary in size at every habitat, being in Guiana-specimens sometimes large, sometimes small, sometimes also discoloured to whitish. This species seems to be by far the most common *Aricoris*.

disparilis. **A. disparilis** Bat. ♂ very much like that of *lagus* (141 k), but without the white on the upper surface of the hindwings (which, moreover, seems to be absent also in all the continental *lagus*) and beneath with an irregular orange spot at the base of the hindwing. The ♀ has about the scheme of markings of *epitus*-♀ (141 h), but the white oblique band of the forewing is narrower, and the basal area of both wings yellow instead of red. From the Rio Tapajoz.

gelasine. **A. gelasine** Bat. (141 i). ♂ above black with a bright blue reflection and an irregular white discal spot. ♀ similar to that of *disparilis*, but the oblique band of the forewing likewise lemon-coloured. Beneath the dark margin of the hindwing is dotted in white. Colombia and Amazon; often in the so-called Bogotá-collections, probably from Muzo or Cundinamarca.

myrtis. **A. myrtis** Ww. ♂ scarcely differing from the preceding; ♀♀ that seem to me to belong to *myrtis*, have more yellow than *gelasine*, so that the yellow oblique spot of the forewing touches the yellow basal part of the forewing; hindwing with a narrower black margin. Amazon, Colombia. — STICHEL considers *myrtis* and *gelasine* to be subforms of one species which is not unlikely, if the variability of most of the *Aricoris* is taken into consideration.

butleri. **A. butleri** Bat. (141 i). The ♂ resembles that of *salvini* (141 k), but above the white spot of the forewing is smaller, the blue duller, beneath there is no honey-yellow basal spot of the hindwing. The ♀ resembles that of *gelasine*, but the forewing has no yellow in the basal part, but only the small yellow oblique band. Tapajoz. STAUDINGER believes that it belongs to *lagus* as a special form of it.

epilecta. **A. epilecta** Stich. Unknown to me. ♂ like *velutina* (141 k), black with a velvety blue reflection, the forewings more obtuse, the hindwings more oval. Beneath the cell of the forewing is filled with ochreous yellow, the hindwing with a reddish ochreous-brown costal area. ♀ with an ochreous-yellow band-shaped spot which is tinged reddish towards its proximal margin. Hindwings orange-red with a dark margin. Peru.

velutina. **A. velutina** Btlr. (141 k). ♂ above velvety black with a bright blue reflection, beneath dark brown, at the border broadly brightened up, but not whitish as in *epitus*. The ♀♀ are entirely black and have only on the forewing a pale orange oblique band running from the middle of the costa to the anal angle.

buckleyi. **A. buckleyi** Sm. The ♂ is beneath immediately distinguishable from the similar *velutina* by white, often triangular, small spots standing before the border and by long yellowish-brown rays extending from the base of both wings as far as beyond the centre of the wings. The ♀ is above blackish-brown with a large orange oblique spot of the forewing, beginning broadly at the costa, then growing narrower and terminating in front of the anal angle rounded off sacciformly. Ecuador.

phaedon. **A. phaedon** Godm. Above the ♂ resembles *velutina* (141 k), blackish-brown, with a violet reflection. Under surface lustrous dark-brown, between the veins ochreous. ♀ black, with a similar broad, but more ochreous and more regular band-spot of the forewing. Beneath the border of the hindwing is marked in white. Ecuador.

lagus. **A. lagus** Cr. (= *persephatte* Godt., ♀ = *petavia* Flör., *inquinata* Btlr.) (141 k). ♂ with tiny, dark discal spots on a black ground of a blue reflection. Characteristic is the under surface being whitish-grey traversed by brown veins. In the hindwing a brown nebulous stripe extends from the proximal margin to the distal margin. The ♀ is blackish-brown with an orange-yellow, but sometimes also bone-white oblique band of the forewing.

Beneath, the hindwings exhibit lighter veins and mostly (not always) small white triangles in front of the border. Guiana, Amazon. The species is beside *epitus* the most common *Aricoris*. — **pythioides** *Btlr.* seems to be a *pythioides*, western form of *lagus*; from the quite similar *salvini* (141 k) the ♂ differs by the light discal spot in the forewing being small and often darkened, and by the entire absence of the light-blue cellular spot at the base of the forewing above. — **striata** is a denomination by Druce for ♀♀ from Ecuador with a white oblique band, in which *striata*, the anal part of the hindwing above exhibits blue striate spots. The ♂ is said to be beneath entirely like typical *lagus*, exhibiting above a somewhat larger discal spot and, in the inner-marginal area a blurred blue dusting.

A. serica *Ww.* undoubtedly approximate the preceding, particularly *velutina*. The ♂ has apparently *serica*, no white discal spot, but the metallic lustre extends almost over the whole forewing, so that only a broad costal stripe and the apical part remain black. In the hindwing the reflection is chiefly confined to the part between the lower cell-wall and the anal fold. Amazon.

A. amethystina *Btlr.* ♂ above black, with a violetish-blue reflection and a shortened white oblique *amethystina*, band; beneath like *pythia*, but it has a more stretched costal margin of the hindwing than the latter and was, therefore, looked at as another species. The ♀ is not described. From Santarem on the Lower Amazon.

A. pythia *Hew.* entirely resembles *salvini* (141 k), but it is smaller, the white spot of the forewing in *pythia*, proportion to the forewing larger, the hindwing blue only in the anal part. ♀ blackish-brown with a white oblique band having the shape of the yellow band in *lagus* (141 k). — **salvini** *Stgr.* (141 k) has above a white *salvini*, oblique spot of the forewing of the ♂ which is sacciformly expanded in the ♀; the ♂ has an almost entirely light-blue, dark-veined hindwing, exhibiting beneath a yellow basal spot; the ♀ has beneath, at the hindwing, triangular, white marginal spots. Upper Amazon and (somewhat less blue ♂♂) also in Colombia and Bolivia.

A. cyanea *Btlr.* ♂ above black, with a blue reflection and an indistinct white discal spot; ♀ with *cyanea*, an orange oblique band and a blue-reflecting disc of the wings. Upper Amazon, Ecuador. In the collections there is mostly the Central American form **jansonii** *Btlr.* (143 a). The ♂ has a large white discal spot, the ♀ *jansonii*, a more flatly drawn out orange band. Both forms, moreover, occur beside each other, and the shape and position of the oblique band varies to such an extent that entirely alike specimens come only from the same flying-place. Near Orosi (Costa Rica) the band is very broad, near Chontales (Nicaragua) uniformly band-shaped, narrower and lighter yellow, near Burica in Colombia behind the cell somewhat strangulated etc. Beneath the ♂ shaded in a sepia-brown, except an oblique band in the forewing and white, towards the margin thickened rays in the hindwing.

A. alcmaeon *Hew.* (142 k). ♂ above and beneath dark-brown; above there is a violetish-blue stripe *alcmaeon*, above the inner margin of the forewing, and the hindwing is entirely violet, the veins black. Under surface without markings. Ecuador; we figure a specimen from Paramba. — **maja** *Godm.* (141 k) has above quite black *maja*, forewings and the hindwings have only at the border a brighter blue colouring; but the under surface also exhibits submarginal blurred spots. The ♀, in contrast with the preceding species, is more similar to the ♂, but in front of the distal margin it has white-blue wedge-shaped spots. Colombia.

A. rhodinosa *Stich.*, ♀ of the shape of an *epitus*-♀ but a little smaller; above black, the forewing with *rhodinosa*, a broad, oblique pink band, the hindwing with long blue rays between the median veins; under surface paler with few whitish basal streaks, the hindwing with rusty-yellow veins and white submarginal spots. The type is a ♂, but it is not described *). From Sarayacu (Ecuador).

A. megalia *Stich.* Certainly a form of the preceding, a little larger (24 against 22 mm). Differing by *megalia*, a broader pink band of the forewing and more distinct blue rays of the hindwing. Peru.

A. fassli *sp. (?) nov.* (143 a). Considerably larger than the preceding (length of forewings 29 mm). Disc *fassli*, of all wings, except a costal stripe, of a bright metallic cyanic-blue. In front of the marginal part of both wings a light-red band of a magnificent purple-violet reflection, being on the forewing nearly twice as broad as on the hindwing. Under surface brown, the bands dull pink. Rio Songo, at an altitude of 750 m. Type a ♀ in FASSL's collection. — I am of opinion that all the 3 species described last are forms of *one* species.

A. tapaja *Sndrs.* (143 a). ♂ blackish-brown, forewing with a hemochrome, rather straight median *tapaja*, band. Under surface brown with a submarginal row of white dots. The ♂ varies at every habitat; sometimes the bands are hemochrome and on both wings (typical specimens, if the bands are absent beneath), sometimes the band of the forewing, or that of the hindwing appears also beneath; then again the band of the hindwing may be absent altogether (*hewitsoni* *Ky.*) and the band of the forewing may appear beneath instead; sometimes again the band of the forewing is above broader and bent round like a hook, the colour more crimson than hemochrome etc. As the ♀, STAUDINGER figures a butterfly with orange-yellow, distally black forewings and

*) I first took it to be a misprint that a ♀ is described of a species the only type of which is a ♂, but E. STRAND confirms once more in another work (Lepidoptera Niepeltiana, p. 51) that the type is a ♂.

blackish-brown hindwings; in front of the apex of the forewing a yellow band, before the border white dots. The ♀ will presumably vary just as much as the ♂; sometimes the forewings are carmine instead of yellow. Rare.

flammula. **A. flammula** *Bat.* (143 b). ♂ blackish-brown, before the apex a white oblique band and at the inner margin as well as on the hindwing hemochrome colouring. The rare butterfly of which not many specimens are known, presumably varies just as much as the preceding species. I figure a ♂ from Surinam; Amazon-♂♂ have more red in the forewing, the hindwings are not so very lobate, and on the under surface of the hindwing (where our specimen has only a moderately broad light ray) the whole disc is white. Guiana, Amazon. The ♀ resembles about a *Methonella*-♀ (122 i).

cruentata. **A. cruentata** *Bltr.* (142 h). ♂ glaringly light-red with a narrow black border; under surface yolk-coloured, the margin more greyish-black, but somewhat broader than above. It varies at every habitat; the dark border may grow considerably broader and enclose white pupils also in the ♂, so that the exterior approximates more the following form. The ♀ has a broadly dark distal part of the forewing and in it a white, band-shaped spot.

heliodora. — **heliodora** *Stgr.* (♀ = *cruentata* *Stgr.*, *helice* *Godm.*) is a form not before me in nature, but certainly allied to the preceding. Here the white subapical spot is band-shaped and stands in the broadly black apical part; in the ♀ it is confluent with the basal red. The species has the attire of certain *Mesene*, of *Lemonias luceres* and so on; but certainly only secondarily, since both imitate certain night-butterflies (*Arctiidae* and *Geometridae*) which are very often met with in the tropical parts of South America.

terias. **A. terias** *Godm.* (142 h). This butterfly, which is not very rare in summer in Paraguay (e. g. Sapucay), is, in spite of its deviating colouring, a genuine *Aricoris*, as is seen by the antennae being not thickened at the ends, but only somewhat bent, and by the long palpi being lowered in the ♀, as well as the whole structure. Dull yellowish-white with a black border, similar to one of the *Terias* frequently flying there. Beneath, the forewings are yellow, the hindwings brown with white rays.

tutana. **A. lutana** *Godt.* (= *tisiphone* *Dbl.* and *Ww.*, *bahiana* *Fldr.*) (141 g) exhibits a somewhat deviating structure and, above all, not sexual dimorphism being otherwise characteristic of the *Aricoris* and appearing also in *terias* only faintly developed. These species are, therefore, better placed into another group from the other species. *tutana* is on both surfaces unicolorously dark brown; in the form of Casa Branca in Brazil (= **monotona** *Stich.*, 141 g) almost without markings, in typical *tutana*, as they occur near Bahia and as I captured them myself in the gardens of the town, with a slightly marked under surface. Single, but not rare.

cleomedes. **A. cleomedes** *Hew.* certainly does not belong here; it resembles *Lepricornis bicolor* (136 b) and is perhaps better placed near that genus. — Nor can **aurigera** *Weeks*, which is likewise not before me, be an *Aricoris*, if it has the structure of the palpi deviating from this genus, stated by STICHEL (*Berl. Ent. Ztschr.* 55, p. 71). The same is the case with **hippocrate** *Godm.* which almost looks like a small, somewhat narrowly and light-banded *lagus*-♀ (which, by the way, has incorrect antennae in our figure 141 k), but which may also represent a somewhat aberrative ♀ of the greatly varying **A. jansoni**.

98. Genus: **Theope** *Dbl.*

The forms of this genus, of which more than 50 were described, may be reduced to quite a moderate number of species. Nearly 70 percent of them occur in the Amazon Valley. Some forms that are very much alike each other and come from the same district, make the impression as if they were only so-called deviations of the flying-place, so that they may be valued only as subraces. If we were to describe as new forms all those specimens that are not in every detail adaptable to the diagnoses mostly set up by BATES, their number would increase considerably. Whereas the *Theope* resemble in their exterior somewhat the *Lycaenidae* which, however, is more due to their colour than to their structure, they are still to be considered genuine *Erycinidae* by their neurulation, the palpi and antennae, the eyes, though not circular, are never bean-shaped, and have the well-developed forefeet of the ♀♀ etc.; besides the only larva having become known hitherto (of *Theope eudocia*) most conspicuously exhibits the neck-organ so characteristic of *Erytinidae*. The *Theope* mostly are very rare; in contrast with most of the other *Erycinidae*, they frequently sit on the upper surface of the leaves with raised wings and are mostly found only at quite circumscribed localities; a great number of forms has never been discovered again except by their authors.

pieridoides. **Th. pieridoides** *Fldr.* (143 f). White, above with a blackish apex of the forewing. In the ♀ the wings are not so pointed and the apical black is narrower. The butterfly is very rare in Bahia, from where it is described and from where also the figured specimen (a ♂) originates. As the most common butterflies in Bahia are entirely white *Hesperiidae* (*Leucochitonea*), it is probably also very difficult to recognize.

eudocia. **Th. eudocia** *Ww.* (143 f). Above orange-red with a broad black costal and apical part of the male forewings. In front of their apex a large diffuse spot of a violettish-grey lustre. Under surface brass-coloured, without the dark margin. — Colombian specimens exhibit less black and no diffuse spot in the dark apical part; we figure them from East Colombia (from the Coll. FASSL). STICHEL denominates them **acosmia** (143 f)

stating, however, their patria to be the Western Amazon; — Central American specimens in which the whole cell of the forewing is yellow, with a narrower blue spot, are denominated *pulchralis* *Stich.*, their patria is also *pulchralis*. stated yet to be „Colombia“. Thus presumably two forms occur there, according to the situation of the finding-place. The typical *eudocia* flies in Guiana and Venezuela. — Larva green with a black, white-marked head, surrounded by fine fluffy hair. At the neck it exhibits lateral clusters of small brown cones and at the anal end a glandular organ which is licked off by ants. The larva lives in a rolled-up leaf of the cocoa-plant in the surroundings of which the ants of the guard build their paper-nests; on trying to separate them from their larva, they appear very excited (GUPPY). Pupa green, held by the cremaster and a filiform belt. The butterflies are not common.

Th. pedias *H.-Schäff.* (♀ = *helpusa* *Hew.*) (143 f). Above violettish-blue with a black costal- and *pedias*. distal margin of the forewing, beneath one-coloured and unmarked golden-yellow. In the ♀ also the distal half of the inner-marginal part of the forewing above is black. From Guiana and Colombia to South Brazil and Bolivia. — **isia** *G. & S.* are specimens from Mexico and Central America, exhibiting a greyish-yellow dull *isia*. under surface. — **hypoxanthe** *Bat.* from Pará has a brass-coloured, lustreless under surface. — Less rare. *hypoxanthe*.

Th. sericea *Bat.* (143 f). Similar to *pedias*, but larger; the apical part of the forewing broad, the margin, *sericea*. however, only narrower black; the rest of the wings violettish-blue, as *pedias*. Under surface of a magnificent golden red in the ♂, more yellow in the ♀. Amazon. Rare.

Th. lampropteryx *Bat.* Of the shape of *pedias*, but the forewings only at the base blue. Under sur- *lampropteryx*. face ochreous-yellow, only faintly lustrous. Lower Amazon.

Th. caenina *G. & S.* Similar to *barea* (143 g); in the ♂ the forewings are dark brown, the cell to *caenina*. its end, the inner margin of the forewing and the whole hindwing are violettish-blue. Under surface almost light yellow. From the Chiriqui (Panama).

Th. barea *G. & S.* (143 g). Like the preceding, but below more brass-coloured than pale yellow. *barea*. Upper surface light-blue, lustrous. Behind the cell of the ♂ a spot of a silky gloss. Panama to the Amazon. Not common.

Th. excelsa *Bat.* (143 f). The largest species of the group; more than twice as large as the preceding. *excelsa*. Beneath abundantly brass-coloured with a faint lustre. Wings with a dark violettish-blue lustre, forewings with broad dark costal- and apical parts, and with a broad dark marginal band; hindwings only at the costal margin black. Amazon; if I have identified the species correctly by the short description by BATES, it also occurs in Guiana.

Th. aureonitens *Bat.* Very similar to the preceding, but much smaller, the blue of the hindwing reaches *aureonitens*. the costal area; in the disc of the ♂-forewing a dull brown spot. Under surface of a golden-yellow (♂) or straw-coloured (♀) lustre. Teffé on the Amazon.

Th. simplicia *Bat.* As large as *eudocia* (143 f). Forewings unmarked blue, hindwings violettish- *simplicia*. blue; under surface dull whitish. The ♀ has a dark base of the hindwing. Pará. Not rare.

Th. hypoleuca *Bat.* Similar to the preceding, somewhat larger, recognizable by the almost purely *hypoleuca*. white, unmarked under surface; above both sexes are of a more brightly lustrous blue (about like *Lycæna icarus*), costa narrow and the distal margin of the forewings broadly black. Lower Amazon.

Th. azurea *Bat.* resembles the preceding, but it differs by the shape; the ♂ has more triangular *azurea*. forewings with straight margins, whereas *hypoleuca* exhibits a somewhat bulging costal margin and a convex border. Upper surface of a bright blue-lustre, costa narrow, apex and border of the forewing broadly black. Under surface quite light brownish, unmarked. Amazon.

Th. herta *G. & S.* (143 g) is a rather small species the ♂ of which is above almost blackish-brown, *herta*. in the basal area there are hardly any blue radiating patches. The under surface is light earthy-grey, mostly almost without any marking at all, sometimes in the centre of the wings slightly darker. The species does not seem to be more closely allied to any other and to be very rare in its patria, Central America.

Th. lycaenina *Bat.* Size of *azurea*; deviating from the preceding species by the almost white under *lycaenina*. surface being faintly tinged brownish-grey. Upper surface black and, as in *herta*, only the inner part of the wings with an indistinctly defined blue (and only dull) lustre. Beneath the hindwings exhibit a series of dark dots being distinct only in the anal region. East Brazil, Pará, Espiritu Santo.

Th. foliorum *Bat.* has the size of *sericea* (143 f). Forewing black except a blue triangle above the *foliorum*. inner margin covering about one third of the wing. The hindwings are above all light-blue, with a dark margin. In front of the border is a series of black, white-shaded dots. Under surface brownish-white, with few black dots before the border. ♀ with obtuser wings. Lower Amazon. — **punctipennis** *Bat.* is like *foliorum*, but smaller *punctipennis*. and the submarginal dots of the hindwings are more numerous and some appear also on the forewings beneath. Amazon and Venezuela. — **atima** *Bat.* likewise entirely resembles *foliorum*, but beneath it is darker and distinguished by the forewings being all black except a very narrow blue stripe in and below the cell. Teffé.

Th. leucanthe *Bat.* (143 g). If I identify *leucanthe* correctly in the figured small animal looking almost *leucanthe*. like a *Lycænidæ*, according to BATES' short description, it is above blackish, only in the basal part and on

the hindwing blue, in front of the border are fine blackish dots in a light halo. The under surface is unicolorously whitish-grey with very fine dark dots on the hindwing and in the anal part of the forewing. Amazon.

phineus. **Th. phineus** Schs. Described from Limon in Costa Rica. Forewings dark brown; cell posteriorly as well as the space below it as far as behind the middle of the wing bright blue, also the space between veins 3 and 5 up to close to the border. Hindwing likewise blue, only the costal margin and apex narrowly black. Under surface light brownish-grey, hindwings with black marginal dots the largest of which at the anal angle and below vein 3.

methemona. **Th. methemona** Bat. is considerably larger than the preceding, the forewings form a more regular triangle; the disc and base of both wings are blue, sharply delimited against the broad black margin; under surface light-brown. Forewing and hindwing with thick submarginal dots. Lower Amazon.

theritas. **Th. theritas** Hew. (143 g as *thersitas*) is larger and has a bright blue ground-colour with an intense lustre on the inner part of the forewing and on the whole hindwing. The under surface is light ochreous-brown with 2 black submarginal dots in the anal part of the hindwing. Amazon.

diores. **Th. diores** G. & S. (143 h). Differing from the preceding species chiefly by the costa of the forewing being more stretched and the black in the forewing being more extensive. Under surface very much like that of the preceding; in the anal part mostly only 1 dot. Mexico; mostly rare.

virgilius. **Th. virgilius** F. (143 h). One of the largest species varying exceedingly. Typical specimens come from Central America; the ♂ has more than half of the forewing black, but no blue pupil in the black apical part. The under surface is uniformly tinged in a pinkish brown. — **eupolis** Schs. (143 g) has the blue of the forewing in the ♂ confined to the basal part of the inner-marginal area; in the ♀ it is more violet, more extensive, and in the black apical part is an indistinct blurred spot. The under surface is more flesh-coloured than brown and has only 1 tiny eye-spot in the hindwing. Mexico; near Guerrero not very rare; before me also from Jalapa,

eupolis. and in a remarkably small, more lilac-blue ♀ from Honduras. — **polimela** G. & S. has the upper surface of typical *virgilius*, but without distal-marginal dots of the hindwings; the black of the apical part in the forewing somewhat reduced; the under surface of the hindwing without an eye-spot in the anal part. Colombia.

polimela. — **caerulea** Bat., finally, is the South Brazilian form, is said to be more cyanic-blue than violetish-blue and *caerulea*. the hindwing has darker veins and between them small, dark submarginal streaks. — **nobilis** Bat. is the Amazon-*nobilis*. form; it is particularly large and has a more yellow than brown or pinkish-grey under surface with several small spots before the border. In some places common. — It may be that also **archimedes** F., unknown to me, *archimedes*. belongs into this group; it is said to be marked similarly above and to have a greyish-brown under surface. The patria of this latter form not being known, it is undoubtedly difficult to ascertain.

speciosa. **Th. speciosa** G. & S. (= *fasciata* Lathy). Beneath just as monotonously coloured as the preceding, entirely earthy-grey with faint dark anal dots of the hindwing in a light halo. Above, however, also the ♂ exhibits in the black apical part a lustrous blue spot of a violet reflection, being by far larger than in the ♀♀ of the preceding species. Colombia.

publius. **Th. publius** Fldr. (143 h). This butterfly, like the ♀♀ of *virgilius*, has a bright blue spot in the black apical part of the forewing, but also in the ♂, where *virgilius* is without it. But besides the under surface is entirely different, chestnut-brown with a more deeply brown median shade of all the wings. Widely distributed and not very rare. From Panama to the Amazon.

comosa. **Th. comosa** Stich. Also here the ♂ has in the apical black of the forewing a blue pupil, like in *publius* (143 h) to which the upper surface is said to be similar. (But according to the figure in the „Genera Insectorum“, this blue spot is at a different place, from that of *publius*, at the cell-end, whereas there it is nearer to the apex.) The under surface, besides, is monotonously yellowish-grey, unmarked. Described according to a ♂ from. Pebas (Peru).

talna. **Th. talna** G. & S. (143 h). From Honduras. Resembles *virgilius* (which, however, likewise flies in one form in Honduras); the blurred spot in the black apical part of the forewing is present, but otherwise the blue of the upper surface almost entirely confined to the base of the wings; the under surface exhibits a whole chain of anal dots of the hindwing.

cratylus. **Th. cratylus** G. & S. (143 e). This species, one of the largest of this genus, which we figure from the Chiriqui, neither in the ♂ nor in the ♀ has the black apical part of the forewing blue-pupilled. It is immediately recognizable by the somewhat irregular delimitation of the blue in the forewing, where it projects towards the apex, and by the dark border of the hindwing. Panama.

thootes. **Th. thootes** Hew. (143 i). Much smaller than the preceding, at once distinguishable by the blue of the forewing projecting behind the cell in a tip towards the margin and advancing a second time between the lower median vein and the submedian, but here as far as to the distal margin. Undersurface unicolorously greyish-brown, unmarked. Central America to the Amazon.

Th. zostera Bat. Above similar to the preceding, but the blue more extensive, so that only a black marginal band remains being deeply indented in the middle. Under surface entirely different; the here brownish-yellow wings are crossed by a brown belt. From the Upper Amazon.

Th. apheles Bat. Likewise from the Amazon; very similar to *thootes* (143 i), but smaller and lighter blue. Beneath light brown. — **sobrina** Bat. presumably likewise approximates *thootes*; described according to a ♀; like *thootes*, but more violettish-blue instead of cyanic blue, and the under surface of a lustrous golden brown. From the Tapajoz.

Th. terambus Godt. (= *lytaea* Hbn.-G.) (143 h, i). The ♂ has a similar upper surface like *virgilius*, but a bright blue gloss and a very pointed apical part of the hindwing. The ♀ has no blue pupil in the apical black of the forewing. Immediately recognizable by the under surface, where the wings, on a brown, in the ♀ yellowish-tinged ground, exhibit a dark-brown stripe extending from in front of the apex of the forewing to the middle of the inner margin of the hindwing. South Brazil. Not common.

Th. tetrastigma Bat. This much smaller species is above unicolorously brown, without markings. The under surface is dark brown too, but here are short light streaks at the end of both wings and, in front of the border black dots in a light halo. From the Tapajoz.

Th. thentis G. & S. This form, in the distribution of the blue, so greatly resembles *thootes* (143 i) that it was sometimes confounded with it. Like there, the black distal band of the ♂-forewing projects linguiformly as far as below the cell-end. But the forewings are much more pointed, the apex still more produced, the costal margin behind the base more bulging-out. Moreover, the under surface in *thootes* is entirely unicolorous, whereas here it is marked with dark shades. Central America.

Th. bacenis Schs. Larger, forewings black, proximal margin at the base broadly blue, hindwings blue with a black costal margin. Under surface brown with an intensely brown, joint band running from the apex of the forewing, similarly as in the following species, to the middle of the proximal margin of the hindwing. Forewing at the base yellowish. Mexico. Unknown to me.

Th. phaeo Prittw. This is probably nothing else but the South Brazilian form of *folia* G. & S. (143 i) living in the northern parts of South America and in Central America. This species has altogether the distorted shape of *thentis*, very pointed forewings and a pointed anal part of the hindwing, but the colouring is that of *virgilius* (apical half of the forewing blackish, otherwise blue) which it approximates also in the size. Beneath dirty pinkish-grey; the centre of the wings is traversed by a dark nebulous belt. Rare.

Th. basilea Bat. (143 i). One of the largest species, above similarly coloured to *terambus* (143 h, i), but both sexes with a dark border of the hindwing, which decreases in width from the apex towards the anal angle. Under surface brown, with a dark stripe from the apex of the forewing to the proximal margin of the hindwing, like in *terambus*, but the dark ground of the wings is, in the disc, usually still more or less distinctly spotted. Central America. Not common.

Th. eleutho G. & S. The largest species; greatly approximating the preceding, but easily discernible by the much broader black distal margin of the hindwing and by the under surface exhibiting also the belt-like stripe as *basilea*, but a lighter, more marked ground of the wings in which, above all, a chain of marginal eye-spots of the hindwing is conspicuous. Panama.

Th. mania G. & S. from Mexico is of a similar size and colouring, but easily distinguishable by the unicolorously loam-yellow under surface being traversed only by the median stripe, as well as by the hindwing of the ♂ exhibiting no dark margin. Rare.

Th. syngenes Bat. Beneath rather similar to *mania*, but the hindwings always exhibit a distinct dark anal spot, and at the apex of the forewing, at the beginning of the dark stripe, we notice a mostly somewhat square spot. Above the blue on the hindwing is more confined; the veins are distinctly brown; in the ♀ the black apical part of the forewing often shows a blue spot. Santarem.

Th. thebais Hew. This species has a deep dark-blue of a magnificent lustre, as it is exhibited by different *Thecla* and, of the Indian *Lycaenidae*, particularly by the *Arhopala*. Especially the form *matuta* G. & S. (143 i, misprinted into *matula*) exhibits this deep blue, and still more extensively than typical *thebais*, but in this respect the *matuta* from the different districts vary considerably. The fore- and hindwings are very broadly margined in black; particularly in typical *thebais* from the Amazon, where the blue covers scarcely yet $\frac{1}{3}$ of the upper surface of the wings. Beneath *thebais* shows a broad brown median band and a submarginal nebulous stripe; in *matuta* the under surface is more regularly brown, the veins distinctly darker, the transverse bands duller; it occurs in Central America and in particularly large specimens (*gloriosa* B.-H. i. 1.) in Colombia.

Th. janus Btlr. In this species from the Lower Amazon the proximal half of the wings shows beneath a yellow colouring which does not occur in any other allied *Theope*. Only *decorata* shows yet a basal yellow on the wings beneath, but only in the cell of the forewing; the latter, however, has also blue in the distal part of the forewing beneath and is smaller than *janus*.

Th. drepana Bat. A small species; the costa behind the base bulged and, in the ♂, the apex of the forewing greatly drawn forward. The forewings being above blue exhibit a dark margin and 2 very irregular lines formed by small streaks. Beneath are numerous, small red-yellow stripes on a lighter ground, being partly united to a belt-like stripe through the centre. Teffé.

- thestias*. **Th. thestias**. A very small form; it is immediately recognizable by the under surface. Here, below the costa of the forewing, we see a brimstone-coloured, oblong basal spot filling up the part of the wings between the costa-base and the subcostal, and extending yet narrowly into the cell of the forewing. The rest of the under surface is lilac-grey, with a broad brown median shade. Above typical *thestias* have entirely blue hindwings. — Those of the form **discus** *Bat.* have only the basal part of the hindwing blue. The species is easily distinguishable by a concave indenture at the anal part of the hindwing, effected by the receding anal fold. The species, varying according to the finding-places, not with respect to the countries, is apparently distributed over the greatest part of Central and South America; it was found from Costa Rica and Guiana to Rio Grande do Sul and Bolivia. — **decorata** *G. & S.* is the northernmost form; it shows blue patches embedded in the distal part of the forewings beneath. Apparently rather rare.
- eurygonina*. **Th. eurygonina** *Bat.* Recognizable by the shape being more that of an *Euselasia* than that of a *Theope*; the forewings are triangular with almost straight margins, and the hindwings have a rather long anal part. In the typical form from Santarem on the Amazon, the part of the forewing above the middle of the inner margin, the hindwing, however, entirely violetish-blue except broad dark marginal triangles of the ♀.
- columbiana*. Under surface brown, marked with rusty-brown transverse bands. — Colombian specimens, **columbiana** *Stgr.* (110 A e), are figured by their author with a light-brown, light-striped under surface and entirely blue hindwings, from the Rio San Juan; a specimen captured by A. H. FASSL on the Tolima at 1700 m has the whole distal half of the hindwings blackish, only the basal part being blue; the under surface shows very light grey bands. — From the Rio Dagua (Colombia) there is a most peculiar specimen before me, likewise taken by A. H. FASSL, which is similarly marked like the Tolima-specimen, but of a snow-white colour in the centre of the wings on both surfaces. It is not impossible that it is a different species, as also the marking beneath in the centre of the wings deviates somewhat from *eurygonina*. But as I have only 1 specimen before me, I include
- sisemina*. it here and call it **sisemina** *form. nov.* (110 A e). — This species connects the genus with the preceding.

Additions and Corrections.

- fulvescens*. P. 623. — **Libythea fulvescens** *Lathy* (Proc. Zool. Soc. Lond. 1904 p. 451) scarcely differs from the form *terena*; it has only above more black and the yellow spots are more homochromous. From Dominica.
- P. 624, line 12 from above, insert: typical *eucritus* *Hew.* (121 a) originate from the Central Amazon.
- P. 626, „ 11 „ „ After *eustachius* insert: *J. & Hbst.* (121 e).
- P. 626, „ 13 „ „ for 121 f read: 121 e.
- „ 19 „ „ After *rhodon* insert: (121 f).
- P. 627, „ 16 „ „ for (110 A f) read: (122 a, b).
- P. 628, „ 21 „ „ after *uria* insert: (121 h).
- „ 27 „ below, after *form. nov.*, for Hindwing read: Forewing.
- P. 631, „ 26 „ „ after *E. authe* insert:
- ocalea*. **E. ocalea** *Drc.* greatly approximates *authe*, but the yellowish-red on the forewing is more extensive and covers the whole hindwing except narrow margins. Beneath the whole distal half of the hindwing and a band distal from the (interrupted) postmedian line are white. La Paz (Bolivia). Above almost like *eucerus*, but beneath quite different.
- P. 632, line 12 from below, add:
- tysoni*. **E. tysoni** *Weeks* from Suapure (Venezuela) has an expanse of 24½ mm. Hindwing very dentate; upper surface mouse-coloured with an obliterated yellow spot at the end of the submedian of the hindwing. Under surface yellowish-brown with a dark central transverse line, the anal region of the forewing whitish. At the border of the wings a white filiform line exhibiting in the hindwing white, black-bordered longitudinal spots; the median line of the hindwing bent round towards the proximal margin.
- howlandi*. **E. howlandi** *Weeks* is 27 mm, mouse-coloured, the forewings in the proximal third lighter; the hindwings also somewhat lighter in the middle of the upper surface. Under surface quite light-grey, with brown lines from the costa through the centre and also nearer to the apex of the forewing. Border of the hindwing dentate; antennae white. From Suapure (Venezuela).
- P. 638, line 19 from above, to *attalus* add: (124 e).
- P. 639, „ 2 „ „ for *lapillus* read: *lapilla*.
- „ 27 „ below, for *magnesia* read: *magnessa*.
- P. 641, „ 20 „ „ for *menoetes* from Bolivia and Peru STICHEL establishes another name:
- pactula*.
- P. 642, line 12 from above. *M. mathania* *Schs.* which was wrongly placed to the *epidius*-group by STICHEL, belongs to the *odice*-group, according to the ♀ having in the meantime become known, and approximates *cymotaxis* *Stichel*.

P. 643. — Hereto we must remark that the two first figures of the row e of table 142 are exchanged by mistake.

P. 648, line 13 from above and Note: **M. ramsdeni** Skinn. Blackish-brown, forewing with 2 whitish *ramsdeni*. costal spots and a similar transverse band shaded inside in dark; at the distal angle a black spot of about 2 mm, near the base 4 small dark crescents. The hindwings at the anal angle have a black eye-spot narrowly bordered in orange, at the base 2 black bands, at the distal margin 3 obliterated dark spots. ♂ has an expanse of 30 mm. Unknown to me.

P. 651, line 25 from above, add: *Napaea agroeca* Stich. Forewing more pointed, border less convex. *agroeca*. Wings above greyish-brown, outside darker. Espiritu Santo.

P. 652, line 17 from above, for *helydrias* read *thelydrias*.

P. 654, „ 1 „ „ To *Tmetoglenc* apparently belongs an *Erycinidae* which I call **trichroma** *trichroma*. sp. nov. (110 D f) and which was brought by A. H. FASSL from his last excursion to Colombia. Like *Tm. dodone*, but the basal half of the wings orange-red.

P. 655, line 19 from below, behind *jaeris* place *Bat.* instead of *Bsd.*

P. 658, „ 5 „ above, **Panara trabealis** Stich. (1916) is above blackish-brown, hindwing in the *trabealis*. anal region powdered in white; oblique band across both wings 3 to 4 mm broad, pale reddish ochreous-yellow, the costal end diffuse towards the base. Length of forewings 19 mm. Sao Paulo (South Brazil).

P. 658, line 17 from below. **Riodina pelta** Schs. Upper surface dark violettish black, between the *pelta*. veins greenish-brown streaks, the orange band in the forewing from the middle of the costa to the anal angle. Under surface black, internerval streaks lighter. Costal margin of the forewing at the base orange, oblique band paler; hindwing with a yellow dot at the base and a small orange dot near the anal angle.

P. 662, line 14 from above. *Lymnas hodia* Btlr. is allied to *jarbas (melantho)*; upper surface jet- *hodia*. black, the orange band of the forewing narrow; under surface lighter, more dark-brown with whitish veins, the oblique band paler. Forewing above with a deep-red dot near the base, sides of the body with a scarlet stripe. Venezuela. Type in the Coll. Druce.

P. 665, line 7 from below, for „oldros“ read „oluros“.

P. 666, „ 2 „ above, behind *naevianus* Stich. place: (130 e).

„ 22 „ „ for „Euerciina“ read „Euerycina“.

P. 671, „ 1 „ below, add: *Monethe albertus* with an ochreously darkened spot of the forewing are *nesotypus* Stich. — *paulus* Stgr. is synonymous with *albertus*.

P. 675, line 3 from below, add to *hya*, as well as to *fenestrella*: (110 A e). As presumably all the forms quoted as *hya* replace each other in the different districts, there may transitions be found, we therefore better figure these 2 forms once more.

P. 676, line 1 from above, for „paraene“ read „paraena“.

P. 679, „ 15 „ „ for (142 g) read (135 d and 142 g).

P. 681, „ 15 „ „ — STICHEL describes (Berl. Ent. Zschr. 1910, p. 81) as *Symmachia histrica*, according to a single ♀ of his collection a butterfly which is said to resemble *S. calligrapha* in the shape of the hindwing, in the forewing, however, a *Mesene*. Blackish-brown, forewing with 4 ochreous-yellow transverse lines the 3 rd of which bifurcates towards the costal. In front of the border blackish, coherent spots. Hindwing with similar markings. From Panama.

P. 686, line 9 from below, behind *micon* read *Drc.* for *Stich.*

P. 687, „ 24 „ „ behind *axiochus* Hew. place: (= *archytos* Stoll).

P. 693, „ 14 „ „ insert: **Z. candace** Hew. (135 l) ♂ similar to the following, but only at *candace*. the costal margin and base of the wings with scarce dots as small as the prick of a needle. ♀ loam-yellow, clouded in a dirty brown, with a chain of antemarginal eyespot-rings. From the Amazon.

P. 694, line 15 from above, for *hegyas* read *hegias*.

P. 695, „ 3 „ below, before *E. angularis* place: **E. samius** sp. nov. (136 g) from the Pachitea *samius*. (Peru) has all the wings unicolorously nut-brown marked with somewhat irregular darker transverse bands. ♂ quite slightly darker than the ♀, but the wings more pointed. Beneath almost like above, the transverse line more distinct, ending into dark comma-spots. ♂, in the Coll. BANG-HAAS.

P. 696, line 1 from below. Behind „not common“ add: Colouring of the upper surface suffused by an intense yellow with very dull silvery markings, similar to *poeas*.

P. 697, line 7 from above, to *Emesis temesa* add: **E. satema** Schs. being unknown to me. Wings *satema*. above quite dark brown, with still darker markings. The markings are traversed by the veins. At the border dark dots, in front of the border a shade. The distal line below the cell bent in, irregular. On the discocellular streaks; one basal line and 2 proximal lines lighter, 24 mm. Is said to originate from Petropolis in the Organ Mountains.

P. 698, line 6 from below. *Siseme hothurus* Berg differing from the other *Siseme* by exhibiting in the marginal area not the radiary striation, as *neurodes*, *pallas* etc., is said to originate from Argentina; it is not before me.

P. 700, line 28 from below, for „*Apodemia druryi* Edw. read „*duryi*“.

drucei. P. 701, „ 10 „ below. Insert here: **H. drucei** *Giacom.* Standing between *cisandina* and *chilensis*.

P. 707, „ 21 „ above, for „*glaucobithris*“ read „*glaucobrithis*“.

P. 708, line 14 from below. The animal described here as *Echenais micator* and figured by this name t. 138 h has proved to be a ♀-form of *Ech. alector* Btlr. (p. 707), at a minute examination. It deviates especially much from the ♂-form and seems, in the figured form, to be confined to Peru.

P. 712, line 2 from below, for *hesperium* read *hespericum*, and for *erythroicum* read *erythraicum*.

lenocinium. P. 713. Insert here: *Nymph. lenocinium* Schs. 22 mm. Described according to 1 ♂ from La Florida in Costa Rica. Wings white, forewing with a broad brown costal margin. At the transverse vein a fine dark streak and a fine postmedial line on vein 5; the traces of a small, blue-bordered spot in the cell and outwards at the costa; the inner edge of the dark marginal band dentate; a fine blue submarginal line, a similar one at the border itself. Hindwing at the base narrowly black, distal margin blackish-brown, the subterminal line like in the forewing; border and fringes white. — The diagnose does not mention to which species this butterfly is allied.

P. 717, line 5 from below, for *glaucoconia* read: *glaucoconia*.

P. 718, „ 12 „ above, for „♀ of the preceding species“ read: „*Tharops superba*-♀“.

Alphabetical List

with reference to the original descriptions of the forms of the American *Erycinidae*.

* signifies that the form is also figured at the place cited.

- abaris Nymph. *Cr. Pap. Exot.* 1, p. 146. *
- acanthoides Sar. *H. Schöff. Außereur. Schmelt.* p. 55. *
- acantus Sar. *Cr. Pap. Exot.* 4, p. 179. *
- accusatrix Symm. *Ww. Dbl. & Hew. Gen. Diurn. Lep.* 2, p. 445.
- acherois Nymph. *Bsd. Spec. Gén. Léop.* 1, p. 5 (Tbl.). *
- acheus Ant. *Stoll Cr. Pap. Exot.* 4, p. 121. *
- achroa Zel. *Bat. Journ. Linn. Soc. Lond. (Zool.)* 9, p. 382.
- acis Helic. *F. Spec. Ins.* 2, App. p. 504.
- aconia Symm. *Hew. Exot. Butt.* 5. *
- acosma The. *Stich. Berl. Ent. Zschr.* 1910, p. 86.
- aeroleuca Barb. *Berg. Ann. Mus. Buen. Air.* 5, p. 1. *
- aeroleuca Lymn. *Fldr. Verh. Zool.-Bot. Ges. Wien* 19, p. 467.
- aeroxantha Char. *Stich. Berl. Ent. Zschr.* 1910, p. 20.
- actoris Crenm. *Cr. Pap. Exot.* 1, p. 146. *
- acuta Mesos. *Hew. Exot. Butt.* 5. *
- adelina Ech. *Bltr. Cistul. Entomol.* 1, p. 79.
- adelpa Stal. *Stgr. Exot. Tagf.* 1, p. 265. *
- adelpina Mesos. *Stich. Berl. Ent. Zschr.* 1909, p. 24.
- adelpina Thisbe G. & S. *Proc. Zool. Soc. Lond.* 1878, p. 368.
- aegates Lymn. *Hew. Descr. Butt. Boliv.* p. 19.
- aemulius Ech. *F. Entom. Syst.* 3, (1), p. 322.
- aenetus Im. *Hew. Descr. Butt. Boliv.* p. 11.
- aeniaeus Esthemopsis *Hew. Exot. Butt.* 5.
- aeolia Esthemopsis *Bat. Journ. Linn. Soc. Lond. (Zool.)* 9, p. 433.
- aerella Ithomeis Sm. *Rhop. Exot.* 3. *
- aerigera Char. *Stich. Gen. Insect.* 112, p. 168. *
- aethalia Emes. *Bat. Journ. Linn. Soc. Lond. (Zool.)* 9, p. 385.
- aetherea Mesos. *Stich. Gen. Insect.* 112, p. 34.
- aethiops Symm. *Stgr. Exot. Tagf.* 1, p. 250.
- agathon Noth. *Fldr. Novara Lep.* 2 (2), p. 303. *
- agave Anat. G. & S. *Biol. Centr.-Amer. Lep.* 1, p. 462. *
- agesilas Las. *Latr. Humb.-Bonpl. Rec. Zoolog.* 1, p. 396. *
- agle Nymph. *Hew. Exot. Butt.* 1. *
- agria Xen. *Hew. Exot. Butt.* 1. *
- agroeca Nap. *Stich. Berl. Ent. Zschr.* 1910, p. 93.
- aguilata Mesos. *Dogn. Ann. Soc. Ent. Belg.* 1893, p. 156.
- agyrtus Isap. *Cr. Pap. Exot.* 2. *
- ahava Mesos. *Hew. Equat. Lep.* p. 41.
- albertus Mon. *Fldr. Wien. Ent. Mon.* 6, p. 73.
- albescens Sis. *Stich. Gen. Insect.* 112, p. 278.
- albida Emes. *Seitz. Macrolep.* 5, p. 695.
- albinus Ham. *Fldr. Wien. Ent. Mon.* 5, p. 101.
- albiplaga Mesene *Seitz. Macrolep.* 5, p. 676.
- albiplaga Mesos. *Schs. Proc. Zool. Soc. Lond.* 1913. *
- albiplaga Mesenops. *Lathy Trans. Ent. Soc. Lond.* 1904, p. 465. *
- albofasciata Ham. *Godm. Trans. Ent. Soc. Lond.* p. 535. *
- albugo Lymn. *Stich. Gen. Insect.* 112, p. 203.
- aleioneus Barb. *Seitz. Macrolep.* 5, p. 664. *
- alemena Eus. *Drc. Ent. Month. Mag.* 1878, p. 101.
- alemaeon Aric. *Hew. Exot. Butt.* 5. *
- alector Ech. *Bltr. Journ. Linn. Soc. Lond. (Zool.)* 9, p. 214. *
- alector Crenm. *Hbn.-G. Zutr. Snlg. Exot. Schmelt.* 5, p. 43. *
- alectryo Sis. *Ww. Dbl. & Hew. Gen. Diurn. Lep.* 2, p. 463. *
- alena Lymn. *Hew. Exot. Butt.* 4. *
- alicia Esthemopsis *Bat. Ent. Month. Mag.* 1, p. 203.
- allectus Ant. *Ww. Dbl. & Hew. Gen. Diurn. Lep.* 2, p. 428.
- alphonius Mon. *F. Entom. Syst.* 3 (1) p. 303.
- ama Mesos. *Hew. Equat. Lep.* p. 39.
- amalfreda Argyroge. *Stgr. Exot. Tagf.* 1, p. 256. *
- amanda Mesos. *Seitz. Macrolep.* 5, p. 640. *
- amarynthina Ambl. *Fldr. Novara Lep.* 2 (2), p. 303.
- amazon Zeon. *Sndrs. Trans. Ent. Soc. Lond. (H)* 5, p. 96. *
- amazonica Car. *Bat. Journ. Linn. Soc. Lond. (Zool.)* 9, p. 393.
- ambryllis Lymn. *Hew. Descr. Butt. Boliv.* p. 19.
- amesis Tles. *Cr. Pap. Exot.* 2. *
- amethystina Aric. *Bltr. Journ. Linn. Soc. Lond. (Zool.)* 9, p. 220. *
- amiana Mesos. *Fldr. Wien. Ent. Mon.* 5, p. 100.
- aminas Ech. *Hew. Exot. Butt.* 3. *
- amithrata Meth. *Seitz. Macrolep.* 5, p. 633. *
- ammon Cham. *Cr. Pap. Exot.* 2. *
- amona Mesos. *Hew. Exot. Butt.* 5. *
- amphidecta Eus. G. & S. *Proc. Zool. Soc. Lond.* 1878, p. 360.
- amphis Lem. *Hew. Equat. Lep.* p. 52.
- amyeus Dior. *Stich. Berl. Ent. Zschr.* 1909, p. 35.
- analoga Mesos. *Seitz. Macrolep.* 5, p. 640.
- anceps Mesos. *Stich. Deutsch. Ent. Zschr.* 1915, p. 687. *
- andania Lymn. *Hew. Exot. Butt.* 5. *
- andraemon Lem. *Stich. Berl. Ent. Zschr.* 1910, p. 77.
- androgyne Cyr. *Stich. Gen. Insect.* 112, p. 99. *
- angelus Noth. *Stich. Berl. Ent. Zschr.* 1910, p. 58.
- angularis Emes. *Hew. Trans. Ent. Soc. Lond.* 1870, p. 162.
- angulata Eus. *Bat. Journ. Linn. Soc. Lond. (Zool.)* 9, p. 376.
- angustior Sis. *Seitz. Macrolep.* 5, p. 698. *
- anica Eus. *H.-Schöff. Exot. Schmelt.* Fig. 31/2.
- anias Char. *Cr. Pap. Exot.* 1, p. 114. *
- annulata Euryb. *Stich. Gen. Insect.* 112, p. 68.
- annulifera Ech. *Godm. Trans. Ent. Soc. Lond.* 1908, p. 542.
- anophthalma Hyphil. *Fldr. Novara. Lep.* 2 (2) p. 298.
- antaerice Mesos. *Hew. Exot. Butt.* 2. *
- antaeus Ham. *Seitz. Macrolep.* 5, p. 701.
- antanitis Lem. *Hew. Descr. Butt. Boliv.* p. 15.
- anthias Hyphil. *Hew. Descr. Butt. Boliv.* p. 11.
- apame Nymph. *Hew. Exot. Butt.* 3. *
- aphanis Char. *Stich. Berl. Ent. Zschr.* 1910, p. 19.
- apheles The. *Bat. Journ. Linn. Soc. Lond. (Zool.)* 9, p. 405.
- apollonia Lyr. *Ww. Dbl. & Hew. Gen. Diurn. Lep.* 2, p. 433. *
- apoplecta Phaen. *Bat. Journ. Linn. Soc. Lond. (Zool.)* 9, p. 38.
- apotaeta Barb. *Stich. Berl. Ent. Zschr.* 1909, p. 43.
- apotheta Lem. *Bat. Journ. Linn. Soc. Lond. (Zool.)* 9, p. 399.
- arache Lem. *Stich. Gen. Insect.* 112, p. 324.
- araguaya Lymn. *Seitz. Macrolep.* 5, p. 660. *
- arbas Eus. *Cr. Pap. Exot.* 4. *
- arbuscula Phaen. *Mschl. Verh. Zool.-Bot. Ges. Wien* 1883, p. 314.
- arche Nymph. *Hew. Exot. Butt.* 3. *
- archelaus Eus. *Seitz. Macrolep.* 5, p. 632. *
- archimedes The. *F. Entom. Syst.* 3 (1), p. 320.
- arcus Dior. *L. Amoen. Acad.* 6, 409.
- aretilascia Pan. *Bltr. Trans. Ent. Soc. Lond.* 1874, p. 432.
- arcos Nymph. *Hew. Exot. Butt.* 1. *
- areolata Croc. *Godm. Trans. Ent. Soc. Lond.* 1903, p. 539. *
- areolata Symm. *Hew. Exot. Butt.* 1. *
- areuta Astr. *Ww. Dbl. & Hew. Gen. Diurn. Lep.* 70. *
- ares Emes. *H. Edw. Papilio.* 2, p. 137.
- arete Car. *Fldr. Wien. Ent. Mon.* 5, p. 98.
- argenissa Lem. *Stoll Cr. Pap. Exot. Suppl.* p. 130. *
- argentea Eus. *Hew. Trans. Ent. Soc. Lond.* 1871, p. 166.
- argenteum Chim. *Bat. Ent. Mon. Mag.* 3, p. 154.
- argiella Ech. *Bat. Journ. Linn. Soc. Lond. (Zool.)* 9, p. 394.
- argyrea Char. *Bat. Journ. Linn. Soc. Lond. (Zool.)* 9, p. 392.
- argyrodines Char. *Bat. Ent. Month. Mag.* 3, p. 154.
- ariadne Nymph. *Stich. Gen. Insect.* 112, p. 370.
- arion Symm. *Fldr. Novara. Lep.* 2 (2) p. 294.
- aristodoros Anc. *Mor. Ann. Soc. Ent. Fr.* 6, p. 420.
- aristoteles Sis. *Latr. Humb. u. Bonpl. Rec. Zoolog.* 1, p. 387. *
- aristus Ech. *Stoll Cr. Pap. Exot. Suppl.* p. 170. *
- arsis Las. *Stgr. Exot. Tagf.* 1, p. 257. *
- arthurianus Dior. *E.-Sh. Proc. Zool. Soc. Lond.* 1890, p. 572. *
- artos Eus. *H.-Schöff. Exot. Schmelt.* Fig. 33 1.
- asa Mesos. *Hew. Trans. Ent. Soc. Lond.* 1869, p. 35.
- asclepia Cr. *Hew. Equat. Lep.* p. 51.
- ascolia Nymph. *Hew. Exot. Butt.* 1. *
- aseolides Nymph. *Bsd. Léop. Guatemala* p. 24.
- asemna Ech. *Stich. Berl. Ent. Zschr.* 1910, p. 31.
- assimulata Lymn. *Stich. Gen. Insect.* 112, p. 207.
- asteria Lem. *Stich. Gen. Insect.* 112, p. 321.
- asteria Luc. Sm. *Ann. Mag. Nat. Hist.* (7) 2, p. 72.
- astiana Symm. *Seitz. Macrolep.* 5, p. 682. *
- astraea Symm. *Stgr. Exot. Tagf.* 1, p. 250.
- astrea Ithomeis *Fldr. Wien. Ent. Mon.* 6, p. 112.
- atahualpa Anc. *Sndrs. Trans. Ent. Soc. Lond. (H)* 5, p. 96. *
- ater Eus. *Seitz. Macrolep.* 5, p. 628.
- aterrima Barb. *Seitz. Macrolep.* 5, p. 663. *
- athena Eus. *Hew. Equat. Lep.* p. 46.
- atima The. *Bat. Journ. Linn. Soc. Lond. (Zool.)* 9, p. 407.
- atricolor Lepr. *Bltr. Ann. Mag. Nat. Hist.* (4) 8, p. 284.

- atroculis Mesos. *Bllr. Trans. Ent. Soc. Lond.* 1874, p. 429.
 atrytone Sis. *Thm. Berl. Ent. Zschr.* 1907, p. 10. *
 attalus Mesos. *Seitz, Macrolep.* 5, p. 638. *
 attrita Eus. *Seitz, Macrolep.* 5, p. 627.
 augea Nymph. *Drc. Proc. Zool. Soc. Lond.* 1904, p. 488. *
 aulestes Anc. *Cr. Pap. Exot.* 2, p. 47. *
 aulica Anc. *Stich. Berl. Ent. Zschr.* 1910, p. 98.
 aulonia Lymn. *Hew. Exot. Butt.* 5. *
 aurantia Eus. *Bllr. & Drc. Cistul. Entom.* 1, p. 103.
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9. Family: Lycaenidae.

The delimitation of this family is not difficult for the American forms either, if the characteristic of the *Lycaenidae* which are devoid of any real cleaning-paws is to be decisive. Thereby a contrast is effected with the *Danaomorphinae*, *Nymphalidae* and *Satyromorphinae*, in which both sexes, and with the *Erycinidae*, in which the ♂♂ exhibit the forefeet transformed into cleaning-paws *). The *Lycaenidae* are separated from the *Papilionidae* by such conspicuous differences of the habitus that not one word need to be said about them. In a similar manner the *Pieris* exhibit besides the remarkable peculiarity in the subcostal neuration of the forewings, a rise of the 3rd, 4th and 5th branches from a joint pedicle, whereas the *Lycaenidae* exhibit only a two-pronged bifurcation of the veins in the apex of the forewing, if not all the subcostal branches rise separately from one another. Another characteristic mark of the *Lycaenidae* are the bean-shaped outlines of the eyes being circular or slightly oval in the other day-butterflies.

So far about 900 to 1000 *Lycaenidae* have been described from America, less, therefore, than from the palearctic district in which many more names were distributed. But as the names of most of the American forms were allotted to well distinguished species, while those of most of the European forms were given to insignificant sub-forms or aberrative discolorations, the number of the American species is probably twice or thrice as large as that of the whole palearctic district. It has never occurred that an American species has been denominated by more than 20 different names as for instance the palearctic *Chrysophanus virgaureae*, *phlaeas* or *Lycaena icarus*. America, however, is inferior to the Indo-Australian fauna, regarding both the number of species and especially the variety of the genera of which there are more than 120 in the east; in America, however, but quite few. The Ethiopian region, however, is excelled by the American *Lycaenidae* as to the number of species. From Africa to the south of the Sahara, and from the islands belonging to it, we know about 6 to 700 *Lycaenidae*, one third of which belong to groups that have no allies in the American district, i. e. the *Lipteninae*. Such Lycaenid-groups, being to some degree isolated and characteristic of the special district like this subfamily or perhaps the *Liphyrini*, are not found in the American region; on the contrary, all the American species belong to such genera that are represented also in the Old World, with the sole exception of few species of the genus *Eumaeus* to which we shall revert later on.

In America itself the distribution is similar to that of the palearctic *Lycaenidae*; in the tropics there are considerably more species, though by no means in such great numbers as for instance the *Ithomiini* (the so-called Neotropids) in the equatorial districts, which disappear abruptly on reaching the northern or southern tropics. Not even in one of the Lycaenid-genera containing many more species, the tropics form the delimitation; except that the insignificant forms of the northern part of North America and the southern part of South America, being allied to the European forms, are replaced in tropical America by brightly coloured and variegated, often also very large *Lycaenidae*.

The geographical distribution of the *Lycaenidae*, which exhibits many striking peculiarities, is full of problems also in respect of American species. Some of them have analoga on the eastern hemisphere, just like in New Zealand and Australia there occur forms that have their nearest allies not in the interjacent India, but quite in the north (*Chrysophanus salustius*, *boldenarum*, the *Erebia*-like Satyrids *Argyrphenga* etc.); thus also the *Lycaenidae*, particularly the *Thecla*, grow, towards the southern point of South America, more and more similar, instead of dissimilar, to the North Americans. These resemblances are undoubtedly due to convergent symptoms, in which similar groups of animals react in a similar way upon the climate which naturally approximates in the extremest south to that of the northernmost region. By this, however, we cannot explain other symptoms, such as the occurrence of otherwise African genera on the high ridges of the Andes (genus *Cyclurius* Blt.). Such cases must involuntarily rouse the suspicion that these genera are no natural ones, since their homogeneousness was established upon criteria that are not to be understood as the symptom of alliance, but as fortuitous or also as convergencies.

Of certain palearctic habitats we know that sometimes an enormous number of specimens of *Lycaenidae* gather there, sometimes entirely of one species, often composed of different species. We have already called the readers' attention to the small water-courses of the Alps, where the alpine *Lycaena* sometimes gather in

*) In the ♂♂ of the *Lycaenidae* the forelegs are at any rate smaller than in the ♀♀ and they have a plain terminal member. Cf. Vol. I, p. 257.

such crowds that whole clouds of them fly up in front of the perambulator. I have recorded the immense number of *Polyommatus baeticus* in India and of the very small *Zizera* of which the air sometimes seems to glisten. I have never been able to observe an analogous occurrence of crowds of *Lycaenidae* in America. Even in Brazil abounding so greatly in butterflies I almost everywhere met *Lycaenidae* only quite sporadically; in some daily captures not one single *Lycaenid* is represented by more than 1 specimen, only sometimes a greater number of specimens met at wet places on the road.

Except the fact, also applicable to other faunae, that the large and brightly metallic species are exclusively tropical also in America, the north of the western hemisphere exhibits a distinct preponderance of the groups which are spread also over Europe and North Asia, viz. the genuine *Lycaena*, the *Chrysophanus* and those *Thecla* that approximate their European allies in shape and colour. These species, resembling our palearctic species, disappear in Mexico and do not occur anymore to the south of the Central Mexican deserts. Only on the ridges of the Cordilleras small alpine forms resembling exteriorly our *Zizera*, *Everes* and the north-oriental *Chilades* extend over the whole continent, joined in the extremest south again by *Lycaena*-like blue butterflies and *Zephyrus*-like *Thecla* in the same degree as the variegated, large, often also long-tailed *Thecla* of the American tropical zone disappear.

The uniformity of the *Lycaenidae* is much greater in America than it is in India or Africa. In the palearctic region 34 genera have been distinguished the existence of all of which may be distinctly asserted, although they have not been universally acknowledged. The Ethiopian district has 48 genera, while in the Indo-Australian there are even more than 100 genera. Chiefly for the sake of perspicuity, an attempt has been made also to separate the many hundreds of American *Thecla* in a great number of genera, but these attempts have proved to be impracticable. In these attempts the same principles have not been pursued as in systematizing the palearctic species, else the ascertainment would have been made that among the American *Thecla* distinct resemblances of some species are to be found to *Zephyrus*, *Callophrys*, *Tajuria* or similar genera, that even in *Thecla*-forms, such as *cypria*, *nobilis*, *marsyas*, *loxurina* much greater extravagances in the shape and colouring are exhibited than sometimes in palearctics of different genera. But we have nevertheless not yet succeeded in accomplishing a disintegration of the American genus *Thecla*, which would have been conclusive, so that this genus, with about 800 forms, remains one of the most difficult to survey.

The more the *Thecla* are preponderant in America, the more the *Lycaena* recede; but their colour, the intensive blue of the upper surface, seems there to have passed on to the *Thecla*. The upper surface being throughout dark-brown in European *Thecla*, in the palearctic *Zephyrus* sometimes even orange-yellow, is exhibited in America to be preponderantly a radiant metallic blue or golden-green, so that the exterior habitus shows counterparts of the palearctic *Arhopala* (*Th. hemon*), of the *Tajuria* (*Th. halesus*), of the *Lampides* (*Th. phydela*), of the *Horaga* (*Th. zaria*), of the *Cyaniris* (*Th. sito*), of the *Callophrys* (*Th. dumetorum*), of the *Satsuma* (*Th. henrici*) etc.

On the under surface the American *Lycaenidae*, in the north of the range, exhibit yet resemblances with the characteristic dotted eyespot-marking of most of our *Lycaena* which was looked at as an approximate reproduction of the stamina on the receptacles of blossoms abounding in honey. It may be connected with the habit of passing the night on the blossoms. Mostly, however, it is only a dull silhouette of the adornment with eye-spots, which we find in the Americans; only in *Lyc. acmon*, *daedalus*, *glaucon* and some others it grows more distinct; in America it scarcely attains the degree being usual in our more beautiful species, such as *Lyc. argus*, *icarus*, *arion*, *adonis*, *corydon* etc.

In spite of their great variability of the marking beneath, nearly all the *Thecla* exhibit the typical *Thecla*-marking consisting of a postmedian stripe and often also an antemedian stripe with an interjacent, small cell-end stripe. The anal eye-spot of the hindwing beneath being nearly always distinct in Indian *Theclini* and often even adorned with a metallic lustre, is of a much inferior importance in American species and, in many cases, it is not prominent at all. The real *Thecla*, as a rule, are not used to sleep on blossoms, but on the ground, on trunks or (mostly) in the bushes. Their under surface is accordingly often green like a leaf or adapted to a dry, withered or folded leaf.

Much more conspicuous than in the colouring, the extravagance of the American *Lycaenidae* is in the shape. This, however, always only refers to the wings; the body in all the species shows a conformity being found in scarcely any other family and, in the *Lycaenidae* themselves, also in no other fauna. In the *Nymphalidae* we have found sometimes long, thread-like antennae, sometimes short clubs; the palpi were sometimes inflated, sometimes prolonged like a nose or also short and pointed; the abdomen was in some cases long and thin as in a dragon-fly (as for instance in some *Heliconius*), then again it represented (in the *Anaca*) only a conic appendix to the excessively broad thorax, etc. In the *Lycaenidae*, however, a difference in size (usually not too great) is the only mark we can find in American species, whereas the *Liphyra* and *Allotinus* in India, the *Curetis* in Asia, the *Liptena* in Africa show that a certain variety in the structure of the body is not entirely

foreign to the *Lycaenidae* in other parts of the world. Solely the *Eumaeus* which we shall have to mention later on also in a biological respect, deviate in manifold respects also in the structure of the body.

The most conspicuous part of the wings are the hindwings, in which the formation of delicate, small tails in the anal region has sometimes degenerated into long, thin, soft filiform appendages. Particularly the *Thecla* of the *imperialis*-group exhibit these formations which appear even more loosely arranged than those of numerous Indian forms, such as the *Sithon* and their allies. The long, sword-like or sabre-shaped tails, as are found in so many Indians (e. g. *Loxura*), do not occur in a similar development in America. But the longer appendages to the hindwings of some species are so delicate and soft that they dangle to and fro at the least puff of the wind. It is strange that these fine formations do not suffer more from the flight which is impetuously swift in some of these long- and thinly-tailed species. Nor do these tails, on capturing the animals in the net, break off as easily as one might fancy, considering their fineness, and I repeatedly captured much-flown and otherwise damaged specimens of *Thecla imperialis* in which the delicate appendages were well preserved.

Another peculiarity in the shape of the hindwings of the American *Thecla* are the small anal lobes which, being situated proximally to the filiform tails, may be of a laciniiform or bossy shape. Like in many palearctic species, they are often so long that, in the resting butterfly, they reach down as far as below the anal end of the abdomen and would thereby be inconvenient, for which reason they are bent down rectangularly to the surface of the wings.

The proximal margin of the hindwings is mostly slightly bent in, but it may also be distorted to a deep indentation or notching. Exactly where, in the sitting butterfly, the apex of the abdomen rests on the support, there is in some species, such as *Thecla laturillei*, a strange indenture in the margin of the wing as if to render the sexual organs accessible to the copulation which organs, in encasing the abdomen, would otherwise be covered by the inner-marginal fold of the hindwings. The clasping-organs of the male, as much as is evident from the very scarce material examined so far, seem to be still more conformably built than in the *Erycinidae*; up to now the examinations of the clasping-organs have not yet yielded any surprising systematic results.

On the other hand, very many American *Lycaenidae* exhibit the scent-spots and male scales, which have already been profoundly studied in the European species. The former organs, serving according to one hypothesis for producing the scent, are found in very many *Theclini*, where they almost invariably are placed near the end of the forewing-cell and are exhibited as oval, more rarely circular, scale-pads of a red-yellow, brown or black colour, which are particularly bright and prominent in those species the upper surface of which exhibits a blue or golden-green metallic lustre which is absent in those scent-pads.

These pads exclusively occur in male specimens and are immediately noticeable for instance in *Thecla gemma*, *sista*, *aurora* (t. 151 a) and other *Thecla*, as well as in European *Theclini* (*Callophrys rubi* etc.). They consist, however, of scales showing no essential structural differences from the normal wing-scales, nor has there been, according to COURVOISIER, a proof produced of their function of producing the scent, though one cannot fail to recognize that a function of the male sexual activity is due to them.

We must distinguish from these the modified male-scales considered as real androconia and distributed over the upper surface of the wings, the structure of which was exhaustively investigated by KÖHLER 20 years ago and recently by COURVOISIER. They are sometimes apparently irregularly scattered across the surface of the wings, but mostly arranged to zones, stripes and bands which sometimes show a certain relationship to the shape and marking of the wings. They were sometimes found to be of the shape of a tennis-racket (WATSON), or sometimes utricular or vesicular (ANTHONY), and ILLIG discovered at the base of their footstalk glandular cells which he presumes to discharge their secretions over the scale thus representing in a certain manner a bowl for the evaporation and production of the scent. This agrees well with what COURVOISIER ascertained later on viz. that the shape of these scales is not that of a balloon, but more of a spoon.

On this occasion, the latter investigator also discovered the systematic applicability of these androconia. He evidenced for quite a number of species a characteristic formation adherent to the species. He was able to follow up the same forms of scales through a great number of aberrations, local forms and geographical races. In most cases all the forms belonging to one total species showed the same structure of the male scales, and numerous changes in the homogeneity of subspecies and local races were proposed by reason of these investigations. The finer structure exhibited a steady number of the separate species of longitudinal ribs extending over a finely reticular surface. The transverse meshes, at the junctions show verrucous knots forming again characteristic figures, so that COURVOISIER comes to the conclusion that these scales are at least just as fit for specific differentiations as the clasping-organs.

Opinions differ greatly as to the intrinsic properties of these scales. They have been looked at as malformations of normal scales, or also as air-bellows in order to assist the flying-activity. KENNEL thinks that originally both sexes had been provided with such scales, but that these had then been lost by the females.

Against their function as scent-generators it was assigned that the frictional movements which were to generate the scent, were performed also by the females and by species in which both sexes were without the scent-pads as well as male scales, so that one must consider these frictional movements to be more the expression of comfort than that of sexual activity. But the strange fact that the *Lycaenini* in which the male scales are particularly well developed, are devoid of the scent-pads, and that, on the other hand, the *Thecla*, with distinct scent-spots, are apparently entirely without the androconia scattered over the surface of the wings, makes us anyhow think that both the formations replace each other. The striking fact remains that in several *Chrysophanini* that were examined neither pads nor male scales were found.

Most peculiar is a gibbous distortion exhibited by the forewing of some species at its costal margin. Shortly before the cell-end the costa grows into a linguiform continuation mostly matching well the scheme of markings beneath, as for instance in *Th. gibberosa*, *tomlinsoni* and some other species. There the under surface shows dark transverse bands on a white ground, and as if they would have to be prolonged beyond the surface of the wings, a lobate appendage extends beyond the margin of the wings, at their discharging-place at the costa. The purpose of this quaint formation is not to be ascertained, unless the biology of the different species be exactly known; the obvious presumption that room had to be made here for a greatly expanded scent-spot is not conclusive, since this appendage is not less developed in females than it is in males.

As to the variation, the American *Lycaenidae* are generally speaking most constant in their formation. Certainly in some forms, being to-day dealt with as separate species, it may turn out on getting knowledge of their biology and which as yet has been ascertained in but very few tropical species, that they are seasonal- or local-dimorphous forms of a species. Some species seem to be most peculiarly variable, since they are able to transform themselves from red into blue, in a similar way as e. g. in the palearctic *Chrysophanus alciphron* northern specimens are covered with a bright bluish violet, southern ones, however, of a glaring yellowish-red colour. It is a striking fact, however, that, while in the *Chrysophanus* the heat of the south takes away the violettish-blue cover, so that the fiery red shines forth unsubdued, in the American *Thecla loxurina*, according to A. H. FASSL's observations, the alpine climate of the Cordilleras favours the pure red, and the hot-house-heat of the lower districts changes the red into blue.

In many cases of the American *Lycaenidae* we may speak of a general adaptation of a brown under surface in species resting on the ground, of a green under surface in those resting in the dense foliage; but we do not notice an extremely minute copy of stones on the road, of tree-blossoms or of accurately ribbed leaves as we find it so much in *Nymphalidae*, *Satyridae*, and also in very many night-butterflies. The American *Lycaenidae* mostly rest hidden, often beneath the leaves or at the leaf-stalk, often they creep very far into the interior of the bushes, so that the enemies lying in wait in open spaces do not get much sight of them. Their tactic of escaping them consists in an intense concealment or slipping away (so-called „slippers“), during the swarming-time, however, in a very well developed flying-power to which I shall revert later on. A disguising by borrowed attires does not occur at all in the real American *Lycaenidae*; only one genus — *Eumaeus* being somewhat problematic in its position — shows a resemblance with patented butterflies of its range. The most remarkable resemblance of *Eumaeus atala* or *minyas* with the homochromous *Actinote neleus* is the more amazing, as beside the black, metallic-reflecting wings also the vermilion abdomen serves to complete the mimicry. From innumerable examples of other groups we know that just the mimetic adaptation of glaringly red places of the body cannot be so plain as spots or markings on the surface of the wings, because otherwise very well hit-off copies (e. g. the ♀ of *Papilio rhetenor*) are not able to imitate the red on the body of their model (*Papilio semperi*) and are thereby forced to transfer it on the wings in the shape of a red stripe being placed close to the body (which is of course not to be noticed in the living animal, since *rhetenor* is used to cover the red stripes of the wings partly over the body). It is therefore most amazing that in the family of the *Lycaenidae* exhibiting otherwise, except Africa, no mimicry and a very little developed adaptation, this high degree of mimicry is found in this one genus.

Another very striking mark in this genus just mentioned are the relations to the Erycinid-genus *Hades* with which it exhibits an extensive biological correspondance. Its gregarious occurrence at certain, mostly damp localities, its habitus, colour, size and way of flying, the same patria (Central America and the northernmost parts of South America) and the joint swarming-places with the likewise gregariously occurring *Morpheus ehrenbergii* are too evident to be regarded as a mere accidental coincidence. In the *Hades* and *Morpheus* the abdomen is certainly not red itself, but like in the mimicry-case already mentioned of *Papilio* (s. s.) *rhetenor* and *Papilio* (*Pharmacophagus*) *semperi* from the Philippines the red is attached directly next to the body on the under surface of the hindwings, somewhat proximally to the place where also the West-Indian *Eumaeus atala* Poey exhibits a red spot.

Also in the anatomy the *Eumaeus* differ considerably from all the other *Lycaenidae*. The transverse vein of the hindwing, being in the *Thecla* mostly quite faint, sometimes vanished to scarcely noticeable traces, is so strong that it forms a distinct termination of the discocellular. The first subcostal vein rises separately from the upper radial vein, whereas on the forewing the 3rd and 4th subcostal veins have a long joint footstalk. Finally, also the female forefeet are better developed than in most of the *Thecla*, and we may, therefore, see in the *Eumaeus* a similar transitional joint to the *Erycinidae*, as in the Indian *Curetis* which also deviate in many ways from the Lycaenid tribe. Like in many *Erycinidae*, we have also in the larvae of *Curetis* an organ being unexplained in its closer functions, which is not placed at the neck as in the American *Erycinidae*, but consists of rotatory whirling threads serving perhaps for the same purposes as the neck-organ of the Erycinid larvae, i. e. for protection.

The eggs of the *Lycaenidae* are cake- or turban-shaped, varying greatly in height and size, but are mostly conformable in shape. The surface is usually distinctly grained, less divided into areas or cells, the micropyle often drawn in.

We as yet know extremely little of the American — particularly South American — Lycaenid larvae. The species belonging here and being for the greatest part of the genus *Thecla* have presumably mostly tree-larvae, and it is, therefore, not astonishing that hardly anything is known of the early stages which are even at the habitat itself difficult to ascertain. The most we know of the North Americans of many of which already *Boisduval* and *Leconte* supplied the life-history (1833). Later on, in the sixties of the last century, particularly *Morris* and *Saunders* have acquainted us with many American Lycaenid-larvae. Still later on, W. H. EDWARDS, SCUDDER, PACKARD, FLETCHER, MISS MIDDLETON and others, published (mostly in the „Canadian Entomologist“) the life-histories of many species; but it is certainly not even the twentieth part of the American *Lycaenidae* with whose early stages we are familiar. On the whole it follows therefrom that, although the shape of American *Lycaenidae* seems not to deviate essentially from that of their palearctic representatives, still the habits, particularly the nutrition, are remarkable in different respects. Some *Thecla*-larvae feed from plants of families that are otherwise not known as the nourishment of *Lycaenidae*, such as the cotton plant (*Gossypium*) and the sarsaparilla (*Smilax*) belonging to the monocotyledons; *Thecla niphon* lives on conifers on which we do not meet with any Lycaenid-larvae in the Old World.

Most peculiar, however, is the life-history of *Feniseca tarquinius* being common in some parts of North America, the larvae of which live on plant-lice. But if HENRY EDWARDS says that this species is the only species among all the North American butterflies that has a carnivorous larva, he is only correct in as much as the other larvae of day-butterflies known from North America are under normal circumstances phytophagans. We know from CARLOS BERG that the larva of *Pyrameis carye* living likewise in North America becomes carnivorous and even cannibal in Patagonia, at the frontier of the region governed by phanerogamia. By its nutrition from plant-lice, the American genus *Feniseca* forms to a certain degree a parallel with the Indian *Gerydini* (cf. Vol. IX, p. 804) which have likewise entirely given up being phytophagans.

The large and brightly metallic-coloured *Lycaenidae* of America are real children of the sun. As soon as a cloud covers the sun, they disappear, i. e. they slip into the midst of the densest bushes, whereas in the intense sunshine, they cheerfully play round the twig-ends of large trees and the tops of bushes in the very same way as their European allies are used to do. The males then post themselves at the end of a twig projecting beyond the skirts of the woods, their heads always turned away from the woods and towards the open space, lying in wait for the females wandering restlessly along the skirts of the woods, until a male accompanies them. At their favourite haunts, being particularly the ends of forest-corners, the turnings of roads or also solitary bushes, we may see, almost invariably in South America, during summer in North America, some *Thecla* bustling about. On settling down the wings are always tightly closed, only some smaller species sometimes open them half, similar to our *Lycaena*, as for instance the species allied to *Th. elongata* flying more in the grass than on the bushes.

Most of the American *Lycaenidae* do not love flowers, except some blossoms abounding in honey, particularly umbels and tree-blossoms which are often visited by them. Nor do the American *Lycaenidae* frequently come to the bait, which is the more remarkable since some *Thecla*, such as *Th. ellida* and their allies nearly always fly near the trunks of trees the dripping sap of which, as soon as they exhibit luxuriant saccharomyces, exerts a great attraction upon most of the species of butterflies which we know as favourite visitors of the bait, such as *Catocalinae*, *Agrotis* etc. It seems, however, as if the *Thecla* were hunting on the trees more for certain lichens or algae than for the dripping sap, or as if they were swarming in order to discover the other sex; certainly the baiting for *Lycaenidae*, at least with the means having been used hitherto, is not successful.

On the other hand, the American *Lycaenidae* often and preferably come frequently to the water. The large, magnificent species, such as *Thecla regalis* and *imperialis* I saw, as soon as the morning-sun began to send down its hot rays into the open spaces in the woods, drinking the dew-drops from the leaves of the bushes. I never observed these large, magnificent forms coming down to the ground, in order to drink on the road; they seem persistently to remain in an altitude of about 2 or 3 m, so that I concluded that their larvae exclusively live on trees. I have already mentioned the gathering of *Lycaenidae* round watercourses being well-nigh typical for some mountain-slopes of the palearctic region, but I was not able to find a parallel case in America, although the *Eumaeus* are said to swarm in big crowds above the flooded surface of swampy fir-pine-woods, but to my knowledge nobody has ever reported from America a similar occurrence as for instance at the southern end of India proper, where the *Zizera*-species are whirling along above the ground in such crowds that the air seems to sparkle with them.

A most peculiar symptom is the habit of many *Thecla* of descending to the ground, at certain hours of the day, and of resting in the midst of the dust of the roads and highways. Wherever the desolate grassy plains of the pampas or prairies are interrupted by bushes or little woods, there are from time to time *Thecla* to be found resting on the sunny road, with their wings closed and without drinking. These are species that are extremely rarely met with at other occasions, and whoever has the chance of passing such places on the road at such an hour, may sometimes capture in a few hours dozens of *Lycaenidae* that are otherwise hardly obtainable. The same symptom I have observed in Germany in *Thecla w-album* being otherwise not common there, which I but once met with in great numbers, but which I otherwise discovered quite singly, some years not at all. The butterflies quite suddenly, from the tops of the trees, flew down to the highroad in the high dust of which they settled down. As their feet were not able to gain a footing in the fine dust, they sometimes tumbled down and remained lying on the side or made only faint attempts to raise themselves again.

The enemies of the American *Lycaenidae* presumably mostly consist in amphibia for the *Lycaena*, in reptiles for the *Thecla*. From the former they are probably protected by an ant-guard, from the latter not. The Indian *Lycaenidae* are known to be strictly guarded and fetched by the ants into their nests for the sake of their pupation; in doing so, the larvae were in due form escorted by the ants. The groups to which these palearctic species belong, have no representatives in America; some species approximating the species known from the Old World as the friends of ants, such as *Lycaena glaucon* etc. may have their larvae (not yet explored in their habits) living in symbiosis also in America. These relations, however, are very difficult to ascertain, and, for instance, we even do not know of some species which we have before us in Europe every summer, such as *Lyc. arion*, whether they pass their last larval weeks in the nests of ants or not. Ants that are a good hand in taking care of larvae, have also become known from Tropical America; it is, therefore, very likely that symbiosis with Lycaenid-larvae occurs there, too.

The flight of the American *Lycaenidae* is mostly nimble and easy, vivid, irregular, but only rarely as rapid as it is seen in some palearctic genera (e. g. *Polyommatus baeticus*). The larger butterflies of *Thecla* mostly only fly for a short distance, often only from one leaf to another. But on the other hand, there are groups, such as that of the *Th. leucogyna* and *phaea*, which are scarcely ever seen at rest, but always flying restlessly in the sun along the broad roads in the woods.

The pupae of the American *Lycaenidae* do not deviate considerably in the habitus from their palearctic allies. They resemble minute fruits, being of the shape of beans or buds and mostly fixed with the ventral surface on a petiole or twig. Their colour is mostly a subdued greenish or brown, some show a face-like figure on their dorsal surface, which is said to resemble a monkey's head in the genus *Feniseca*, something like in the palearctic genus *Spalgis*.

I. Group: Theclini.

1. Genus: **Eumaeus** Hbn.

This genus forming the transition to several *Erycinidae*, according to many examinations, is a real Lycaenid genus. The tarsi of the male forelegs are annexed to a cylindrical joint densely set with spines. The anterior tibiae, in their distal half, are likewise spinous and exhibit 2 longer spines at the tarsal end. At the proximal end of the median tibiae and at the distal end of the femur there are hair-spots. In the female all the 5 tarsal joints, inclusive of the distal end of the tibiae, exhibit strong spines, the terminal joint being as long as the 3rd and 4th together. The vigorous palpi are long and slender, the terminal joint in the ♀ longer than in the ♂. At the antennae we notice spines interspersed between the scaled cover. The eyes are almost naked, exhibiting only quite few, thinly scattered hairs. On the forewing the cell is narrow, before the cell-end there rise 2 subcostal veins, the upper discocellular is absent. On the hindwing the costal half of the cell is much shorter than the median half; the lower discocellular forms an acute angle with the median.

Further particulars referring to this genus containing 3 large, imposing species are to be found in the General Topics.

E. debora Hbn. (146 a) is the largest representative of the genus, above deep velvety-black with *dehora*. green, metallic, submarginal cuneiform spots, which are on the forewings longer, on the hindwings shorter and more triangular; metallic-blue stripes are found yet subcostally, in the cell and along the submedian. Beneath unmistakable by the numerous greenish-golden spots, which are silvery-blue in fresh specimens as in the figured ♂. — The carmine, black-belted larva lives gregariously on an *Amaryllis* standing in the water. The butterfly flies in Mexico and Guatemala.

E. minyas Hbn. (= *toxea* Godt.) (146 a, b) is smaller, the forewing with a blue, black-veined disc being *minyas*. of a very variable extent, the hindwing with golden-green, small cuneiform spots in front of the margin. Abdomen beneath orange-red. Widely distributed and common from the south-western part of Texas to Brazil. — We introduce the very imposing and extensively lustrous-blue Costa Rica-form by the name of: **costaricensis** form. *costaricensis*. *nov.* (146 b). — On the contrary, the more southern specimens from the Amazon etc. have particularly the ♀ above almost without any green at all; they may be named **brasiliensis** form. *nov.* *brasiliensis*.

E. atala Poey (= *toxea* Gray nec Godt.) (146 b; c as *toxea*) is smaller and duller, the hindwings nearly *atala*. entirely black with smaller, more blue marginal spots. Beneath the silvery-green macular bands of the hindwings are developed more proximally, costally more bent, the red inner-marginal spot mostly larger. The extension of the blue above also varies here greatly in the different specimens. From Florida and Cuba.

2. Genus: **Theorema** Hew.

Neuration almost like in *dehora*, but the cell of the forewing is somewhat broader, the 1st subcostal vein placed nearer to the base. The hindwing exhibits a small tail at the lower median-vein. In the ♂ the forelegs are not so very spinous.

Th. eumenia Hew. (♀ = *titania* Strecker) (146 b, c) is a magnificent species, the ♂ above of a *eumenia*. radiant peacock-blue, warming into green towards the margin, with a broadly black costal area of the hindwing; the ♀ is black, on the forewing with a bluish-green submarginal band and a white apex, on the hindwing with greenish-golden marginal spots. Beneath the dull-black hindwings exhibit 4 greenish-silvery macular rows in front of the border, the ♂ an opalescent blue stripe in the cell of the forewing and between the median veins. Known from Guatemala, Nicaragua, Costa Rica, Panama, and Colombia, but so far everywhere extremely rare.

Th. dysmenia spec. nov. (153 a) resembles above somewhat the *E. debora*; velvety-black, towards *dysmenia*. the margin with an indigo-blue lustre, on all the wings with submarginal, greenish-blue silvery spots receding somewhat at the apex of the forewing. Beneath dull-black with darker veins and a narrow, greyish-white distal margin growing broader towards the apex on the forewing. The ♂ is not yet known and is presumably above more extensively blue. Described according to a ♀ from the Upper Rio Negro (Colombia) from the Coll. FASSL.

3. Genus: **Trichonis** Hew.

Robustly built, head large, eyes naked. Costal margin of the forewings at the base strongly convex, distal margin uniformly rounded, proximal margin of the forewings in both sexes very convex, covering a polished spot of the costal half of the hindwing. On the forewing the subcostal is 2-branched. Hindwings round, with a short cell and a very convex costal margin.

T. theanus Cr. (146 b) is above and beneath light greenish-blue, above with a black distal margin; *theanus*. the polished spot is reddish-brown, so is the inner-marginal part of the forewing beneath, as far as it is covered by the hindwing. This quite uncommonly rare species seems to be known only from Guiana.

4. Genus: **Thecla** F.

A multiform genus of very small to medium-sized butterflies, the chief mark by which they are distinguished from the other genera being the more or less produced, often indented, pointed or rounded anal angle of the hindwing. Another characteristic is the development of the tails found in most of the species. In case there is only one tail, it is situated at the lower median vein and appears only in very rare cases as a direct prolongation of this vein, but is much rather placed mostly nearly rectangularly to it in the direction of the anterior angle, being, however, sloping upwards close behind its rise, so that it nevertheless retains the direction of the vein. If there is a second tail, its place is at the upper median vein and it is smaller.

The main characteristics regarding the general exterior, the habits and so on has already been told in the Preface (p. 740 ff.). According to our present knowledge it is not yet possible to classify the genus comprising more than 800 described species and being certainly not to be delimited uniformly, according to definite principles. Whether the method of the secondary sexual characteristic marks already proposed by others and continued by COURVOISIER, will attain its object, seems still to be doubtful to us. The scent organs, being a somewhat relatively recent discovery, are easily influenced and variable and are often present

or absent in one and the same species (e. g. *Th. irus*); they are, therefore, in our opinion unable to comply with the development of the race which we would consider to be obviously the most correct method of division. This is proved, for instance, by very remote and certainly not in the least allied groups exhibiting entirely convergently developed scent-spots; on the other hand, closely allied groups would undoubtedly be inserted in remote groups.

Best to make use of the affinities of the tribe and the most steady and oldest character is by all means the principle of the marking of the under surface which repeats itself again and again in long series. In order to arrange somehow the chaos of species, we therefore thought it to be the most correct way and, at the same time, the most facilitating for the searching diagnoser, to undertake, according to this plan, a division into 120 groups corresponding substantially to the groups assumed by GODMAN and SALVIN in their *Biologia*. Certainly the division must be somewhat altered by including North and South America, whereby a great number of new elements are added.

Many attempts have already been made to divide the *Thecla* into genera according to the most various principles, as for instance by HÜBNER, SCUDDER, KAYE according to the shape of the wings, the influencing of the veins by the scent-organs, the number of the tails etc., but neither of them is entirely satisfactory. Many of these denominations of subgenera coincide with certain names of our groups and may then be applied so; conformably to this we have made notes to them in the respective groups. Other names, however, must be split into various groups, as for instance the genus *Eupsyche* Scudder containing the species *m-album*, *telea*, *martialis*, *hugon* and *juda*, species which we were forced to place in just as many different groups and which, in a philogenetic respect, have certainly very little in common with each other.

One of the greatest difficulties was offered by the fact that many small and insignificant, but also some remarkable species are partly extremely rare and were often described according to single specimens some of which have never been discovered anymore since; many of the types cannot be found, so that several species are no more to be identified. We have mostly placed such cases at the end of groups to which they are presumably allied.

1. Imperialis-Group (*Theritas* Hbn.).

- imperialis*. **Th. imperialis** Cr. (= *venus* F., ? *actaeon* F.) (146 c) is above of a dazzling metallic greenish-blue, on the forewings with a broad black apex and in the ♂ with a blackish-brown scent-spot at the cell-end and behind it, which is parted by the transverse vein and is more red-brown in the posterior half. The ♀ is somewhat duller blue. Under surface golden-green, on the hindwings with a fine black transverse striation, without any distinct transverse lines; only at the anal angle short beginnings are noticeable. — In the form **ducalis** *Dbl.* (♀ = *oakesii* *Butl.*) (146 c) the disc of the hindwing is of a metallic carmine colour. The species is widely distributed from Nicaragua, Panama, Colombia, Guiana, Brazil to South Peru.
- cypria*. **Th. cypria** Hbn. (146 d) is above more green than the preceding, beneath with a broad, black, proximally whitebordered transverse-stripe on the hindwing, bending outwards below the cell. — The name of *paphia*. **paphia** *Fldr.* may, according to the figure, be maintained for the specimens with a fiery copper-red to carmine disc of the hindwing. From Mexico through the whole of Central America to Colombia.
- tuneta*. **Th. tuneta** *Hew.* (146 d) has broader, shorter wings than the preceding and the transverse stripe of the hindwing forms a regular, outwards concave bow shortly before the anal angle, bending then round almost rectangularly to the proximal margin. The scent-spot of the ♂ is small and lies behind the cell. Colombia, *splendor*. Brazil. — **splendor** *Drc.* (146 d) is probably only a form of this species with a submarginal dark transverse band on the forewing beneath, being also indicated on the hindwing. Described according to 1 specimen from Colombia.

2. Gabriela-Group.

- coronata*. **Th. coronata** *Hew.* (146 d, e) rather forms a group for itself by the forehead being in the ♂ crowned with a golden-lustrous cone. Above metallic-blue, the ♂ without any red anal spots which are very large and double in the ♀. On the golden-green under surface the black transverse band is proximally bordered by a light grey and touches the red band on the hindwing. From Guatemala to Colombia and Ecuador.
- ganymedes*. **Th. ganymedes** Cr. (= *teresina* *Hew.*) (146 e, f as *teresina*) is above blue with a narrow black distal margin, being faded towards the surface of the wings, in the ♂ without the scent-spot; beneath golden-green, in the proximal half of the forewing blue; the inner broad black, distally white-bordered transverse stripe of the forewing extends from the costal margin to the upper median vein; on the hindwings the black and the red bands are about of the same width, the latter, however, grows somewhat broader beneath the subcostal vein and stragulates here somewhat the black one; in an anal direction the red band usually exhibits no black spots. Widely distributed from Mexico to Colombia.

Th. gabriela *Cr.* (= *gabrielis* *Godt.*) (146 f) is very similar; on the under surface of the forewing the *gabriela*, proximal transverse stripe extends down as far as below the lower median vein, on the hindwing the broad black transverse band forms an oval and, beneath the subcostal vein, it is broad and not strangulated, forming a W at the proximal angle; the red band is very broad on both surfaces, but not sharply defined by white. Colombia, Amazon.

Th. sponsa *Mschlr.* differs from *gabriela* above by a larger, carmine anal-angle-spot of the hindwing, *sponsa*, beneath by the red spot reaching from the proximal margin only to the upper median vein, in which there are 2 black spots. Surinam.

Th. batesii *Hew.* (146 f) likewise greatly resembles *gabriela*, though it is easily distinguishable by the *batesii*, under surface of the hindwings, exhibiting only a rather uniformly broad, red-brown band divided by a white line, and forms only a V, not a W, at the proximal angle. Brazil.

Th. sumptuosa *Drc.* (= *gabriela* *Godt.*) (146 f) is above separable by the large, silky-grey scent-spot *sumptuosa*, of the forewing, being situated below and behind the cell. On the under surface of the hindwing there is only an oval, red-brown band being distally bordered by a white line and behind it by a black line. Brazil (Espírito Santo, São Paulo).

Th. candidus *Drc.* (147 a) is very similar and perhaps only a form of the preceding species with a *candidus*, scent-spot being taperingly prolonged towards the base below the cell. Beneath of a magnificent bluish-green with very distinct markings, the black being increased on the forewings, and like in *sponsa*, there is only some red with black spots therein towards the anal angle on the hindwing. From Colombia (Muzo).

Th. ornatix *Drc.* (146 f) has beside the scent-spot of the preceding yet a second one above the *ornatix*, median in the cell; beneath likewise very similar to *sponsa*. Described from Brit. Guiana.

Th. regalis *Cr.* (= *endymion* *F.*) (146 e) differs greatly from the preceding and approximates *coronata* *regalis*, the most, from which it differs beneath by the transverse lines being not distally but proximally bordered by whitish-grey; the one on the hindwing does not quite touch the red transverse band, but it is separated from it by the green ground-colour. Above the blue grows somewhat more greenish and there are red anal spots in both sexes. The black margin of the wings is comparatively broad and proximally not faded, but sharply defined. Occurs most widely distributed from Mexico to the Amazon.

3. Tagyra-Group.

Th. tagyra *Hew.* (147 b) is a very strange animal, above blue with a silky-grey sexual-spot of *tagyra*, varying size, beneath likewise blue with black, distinct transverse bands. — **floralia** *Drc.* (147 b) has been raised *floralia*, to a species, but the only difference is the prolonged ♂-spot; the latter, however, varies (as in some other species) sometimes from one specimen to another, so that it cannot be a specific mark of distinction. Described from the Amazon district, also before me in a couple being beneath of a somewhat lighter turquoise-blue with narrower black bands, from the Rio Songo (FASSL).

4. Episcopolis-Group.

Th. episcopolis *Fassl* (153 a). Very different from all the other species known. Above of a radiant *episcopolis*, golden-green with narrow black margins and a broader apex, beneath on the forewings metallic-blue, towards the margin warming into a golden-green; hindwings green with 3 black transverse bands being convergent towards the proximal angle and in an oblique light gleaming in a magnificent peacock-blue. Discovered by A. H. FASSL in the West Colombian Andes at an altitude of 2000 m (Rio Aguaca Valley), where the species was flying round the tops of trees in the morning-sun.

5. Nobilis-Group.

Th. nobilis *H.-Schöff.* (= *bimaculata* *Mschlr.*) (147 a ♀, 153 a ♂). This group, strictly speaking, *nobilis*, likewise contains only one representative, if one does not want to place the species in the *gabriela*-group. The ♂ is greatly distinguished by the fact that, beside the roundish grey cell-stigma, there is another oblong black spot at the end of the submedian, which, however, does not contain any scent-scales. Beneath similar to the *gabriela*-group with a very broad red band of the hindwing. From Guatemala to Colombia and Guiana.

Th. telemus *Cr.* (= *antinous* *Fldr.*) (147 a, b) we include here for the sake of exterior resemblances. *telemus*, ♂ above lustrous sky-blue with an extremely fine black border; the tails are also blue. Stigma greyish-brown, behind the cell-end; ♀ of a more subdued blue, with broad, blackish-brown margins. Under surface green with an extremely variable marking and colouring, so that there is no distinct delimitation to **antinous** *Fldr.* (147 b). *antinous*. The ♂ is sometimes without any red at all, particularly in southern specimens, so that there is a broad, sky-

blue marginal band, sometimes there is a large red spot which mostly grows very extensive in the ♀. Very common and widely distributed from Central America to Colombia, Guiana and the Amazon.

6. *Venulius*-Group (*Pairvarria* Kaye).

venulius. **Th. venulius** Cr. (153 a). Above lustreless greyish-blue, beneath likewise light-blue with 3 submarginal blackish bands, the proximal one mostly red-brown; between the median veins of the hindwings there is in the middle band a black spot being above bordered by orange. Widely distributed, but apparently very rare from Guiana to Bolivia (Rio Songo).

7. *Satyroides*-Group (*Macusia* Kaye).

satyroides. **Th. satyroides** Hew. (147 c). In the species of this group the broad costal space of the forewings is covered with long hairy scales directed downward. ♂ above dull violettish-blue, ♀ brown, hindwing with an orange-brown anal eye-spot, beneath very similar to *venulius*, ♂ more greyish-blue, ♀ brown. Amazon, Rio, Sta. Catharina.

temathea. **Th. temathea** Hew. (147 c) is above the same, beneath, however, the hindwing exhibits another transverse band nearer to the base. Amazon.

latreillei. **Th. latreillei** Hew. (147 c) we include here, because the costal margin of the forewings exhibits the same hairy covering and also beneath the scheme of markings is similar. The shape of the wings is very characteristic by the stunted apex of the forewing and the deep indenture at the proximal margin of the hindwing above the anal lobe. The tails are much broader than in the preceding. Above metallic dark blue, beneath brown with more intensely red-brown transverse bands and rows of lunular spots. Brazil (São Paulo, Sta. Catharina, Pt. Alegre) to Paraguay.

8. *Assula*-Group.

assula. **Th. assula** spec. nov. (153 a) is a very peculiar animal without any closer relations to other groups. By the deep indenture above the very well developed anal lobe and the slightly stunted apex of the forewing its shape resembles *latreillei*, but the hindwings exhibit only a broad, almost spoon-shaped tail. Above unicolorously deep purple-brown, the anal lobe and an indistinct marginal line on the forewings towards the hinder-angle deep chestnut-red; the base of the fringes particularly at the anal lobe and some scales in the centre of the apex of the tail bluish-white. Beneath the forewings are brown, towards the apex dusted in white with a lighter line beyond the centre as far as the lower median vein. Hindwing of a deeper blackish-brown; from the centre of the costal margin proceeds a lighter stripe ending directly in the tail with a distally concave bend and being distally strewn with single white scales and being united in front of the border with one row each of lighter lunular spots coming from both sides; in the anal lobe and in the cell-spaces between the median veins there are carmine spots standing behind; at the proximal margin some more, irregular, white-scaled markings. The base of the fringes white, more distinct than above. Described according to 2 ♀♀ from Colombia, a fresh one from Bogotá, a much-flown one without tails from the Monte Socorro, from the Coll. FASSL.

9. *Marsyas*-Group.

marsyas. **Th. marsyas** L. (147 d) is a well-known, large species with an almost falciform apex of the forewing which, however, varies in its development, above beautifully sky-blue with a broad, jet-black apex of the forewing. Beneath lilac-grey, on the hindwings towards the proximal angle white strewn with mildew-green scales, with black spots and linear markings which are well reproduced by our figure. — **cybele** Godm. & Salv. is an insignificant side-form with distally deeper blue wings. From Panama to South Brazil.

damo. **Th. damo** Drc. (147 d) is a species hardly separable from the former. It is above lighter and more silvery-blue than *marsyas* and is without the broad black apex of the forewing. In its size and the development of the falciform apex of the forewing it is just as variable as the preceding. — **dorcas** Drc. is a Peruvian form with distally deeper blue forewings, and in the ♀ the margins of the wings are narrower blackish-brown. The species extends in the north as far as Mexico, to the south as far as Ecuador; it very often flies at the skirts of the woods, but it is difficult to capture, as it flies very high.

10. *Theocritus*-Group (*Mithras* Hbn.).

theocritus. **Th. theocritus** F. (= *nepia* Godm. & Salv.) (147 e as *nepia*) is a very unique species, above almost silvery, the distal half of the forewing blackish-brown; the ♀ is somewhat bluer. Under surface blackish-brown with rows of metallic-green spots. Distributed from Mexico to Colombia (Muzo).

Th. augustula Ky. (= *augustinus* Btlr. & Drc.) (147 e) is very similar beneath, but the proximal margin of the forewings is brown, in *theocritus* silvery blue. The ground-colour above is a deep blue, with metallic green spots near the anal angle. From Mexico to Panama.

Th. monica Hew. (147 g) is above somewhat more greenish than the preceding with a less extensively black apex of the forewing; beneath duller greyish-brown with a light, partly white-chequered apical part and smaller indistinct greenish spots which are arranged almost like in *lisus* (148 a). The ♂-hindwings exhibit beneath yellowish-white scent-scales hidden in a hairy fold below the median. Venezuela, Colombia.

Th. gispa Hew. (147 e) probably also belongs into this group. It is larger, above metallic-blue with only narrow black margins, in the ♂ with a discal spot at the cell-end. Beneath dark-brown, the inner-marginal half of the forewing of a brilliant silvery-blue, the hindwing in the distal half green, clouded in brown, traversed by a brown band, veins broadly brown. Apparently very rare. Amazon.

Th. hamila Jones (147 f) is much smaller than the preceding, otherwise very closely allied to it with a large scent-spot. Beneath very easily recognizable by the sooty-black colour covering the whole wings, which is, however, much too little expressed in the figure. Castro (Paraná), Rio Grande do Sul, Sa. Catharina.

Th. crines Drc. (147 e, f) is very similar, the wings a little broader, above with a more intense metallic lustre, beneath the blackish-brown ground-colour in the basal third of both wings densely strewn with emerald-green scales and in front of the distal margin of the hindwing there stand 3 or 4 more or less complete rows of magnificently metallic-green lunular spots. The ♀ is of a much duller blue, above with very broad brown margins. So far it seems only to have been found in Colombia.

11. Hemon-Group.

Th. lisus Stoll (= *hisbon* Godm. & Salv.) (148 a, 147 f) is above metallic ultramarine-blue without a scent-spot with narrow black margins and a darkened apex, in the ♀ more greenish-blue with very broad brown margins. The under surface is very variable, brown to black with 3 whitish to green, undulated lines in front of the distal margin of the hindwing and an angularly broken row of small, bluish-white or green spots in the disc, the uppermost of which is black-pupilled outside at the costal margin. The differences mentioned by GODMAN as to his *hisbon* are merely individual. Wide-spread and everywhere common from Guatemala to Colombia and Bolivia.

Th. viresco Drc. (153 b) differs by a more compact structure, a greener upper surface with somewhat broader margins and the opalescent green disc of the forewing beneath. From Brazil and Colombia (Rio Negro). — **photeinos** Drc. (147 f), differing only above and beneath by a lustrous-blue colour is probably scarcely a different species. From Brit. Guiana.

Th. orsina Hew. (148 a) I do not know: it is presumably scarcely specifically separable from *lisus*; it is said to differ by longer hindwings and a lighter greyish-brown under surface. Bolivia.

Th. phegeus Hew. (147 f, g). The figure is entirely unable to give an idea of the splendour of the colouring; the forewings are above brilliantly sky-blue with a milky-white prominent sexual-spot. Beneath marked as *lisus*, but of a dark-green ground-colour, at the proximal margin of the forewing blue. Bahia, Amazon.

Th. laudonia Hew. (148 a) forms the transition to the following species which it almost entirely resembles beneath, except the dark-green ground-colour as in *phegeus*. Above the wings are of a deep peacock-blue with a small, equally coloured scent-spot being visible only at an exposure to an oblique light. Amazon, Colombia.

Th. hemon Cr. (= *acmon* Cr.) (147 g) is larger than the preceding, above equally coloured, but with a very much larger scent-spot; beneath blackish-brown with a blue proximal half of the forewing. The ♀ is above dull brown, also beneath, here like the ♂ with metallic-green transverse lines and a white, black-pupilled eye-spot in the middle of the costal margin. The species flies the most frequently in Brazil in the Amazon district, in Guiana and Colombia, more rarely in Central America from Guatemala to Panama.

Th. arogeus Cr. is a species that has apparently not been identified hitherto, but presumably belonging here. Above like the preceding, beneath green, the darkest at the base of the hindwings, towards the margin light-blue with black transverse lines, the innermost of which in the centre forms 2 very large bows like the number 3. Described from Surinam.

12. Deniva-Group.

Th. deniva Hew. (147 c, d) approximates the preceding group by the split anal part of the hindwing; the marking beneath likewise shows a resemblance in the scheme; the apex of the forewing is clipped. Above the ♂ is metallic-blue, the ♀ dull violettish-blue, beneath brown. Brazil.

zava. **Th. zava** Hew. (153 b) which I know only from the author's description and figure, is ranged here. Above blue with broad dark-brown margins and a dark-brown discal spot. Beneath brown, darker undulated with 3 transverse bands and whitish-watered spots of the costal margin of the forewing before the centre and at the apex. No habitat mentioned.

13. Anna-Group.

anna. **Th. anna** Drc. (147 d) is an entirely isolated animal. Above metallic-blue, with broad blackish-brown margins. Beneath the forewings are brownish-grey, towards the margin strewn with whitish, in the disc opalescent blue; the hindwings are brown, densely strewn with whitish and darker scales and marked with black spots the arrangement of which approximates the most the *marsyas*-group; they exhibit 2 rather long and broad tails. Described according to 1 example from Colombia.

14. Mavors-Group.

- mavors*. **Th. mavors** Hbn. (148 b as *triquetra*). The ♂ is above bluish-green with a large brown scent-spot, also beneath green with fine black transverse lines, at the anal angle of the hindwing no distinct W. The ♀ is above and beneath plainly coloured in brown. The hindwings bear 2 tails. From Mexico through the whole of Central America to Colombia, Guiana and the Amazon; everywhere very common, but apparently not going up higher than 3 to 4000 ft.
- triquetra*. **Th. triquetra** Hew. (152 b) differs by having only one tail and a somewhat duller bluish-green colour above; beneath also in the ♂ the ground-colour is discoloured brown, only sparsely sprinkled with silvery-green scales, and the lines run somewhat differently. Panama, Surinam, Brazil.
- ella*. **Th. ella** Stgr. i. l. (148 b, as *mavors*) is easily discernible from the two preceding by the absence of the scent-spot, the under surface being quite brown also in the ♂ and the distinct W at the anal angle of the hindwing. The hindwing bears 2 tails. Colombia, Ecuador.
- paupera*. **Th. paupera** Fldr. (148 b) from Bogotá seems hitherto to be extremely rare. It resembles *ella* above, but it is of a more lustrous dark-green, beneath brown, marked like *triquetra*, without a distinct W. — **harietta** Weeks from Bolivia is probably only a variety of colours, above lustrous blue, towards the base warming into greenish.

15. Polybe-Group (*Atlides* Hbn.).

- inachus*. **Th. inachus** Cr. (= *baeton* Sepp) (148 f). A well-known species, above in the ♂ metallic indigo-blue with a moderately broad blackish-brown margin; the large, long, greyish-brown scent-spot is parted in two by the transverse vein. Hindwing at the anal angle with whitish-grey hair and variegated with silvery-green scales. The ♀ is in the basal half dull greenish bluish-grey, distally blackish-brown. Beneath brown, in the basal half of the forewing and the inner-marginal half of the hindwing green, in the basal area of the hindwing carmine with a large black eye-spot being narrowly bordered by silvery-green; abdomen beneath orange-yellow.
- carpophora*. From Panama to East Peru, Guiana and the Amazon. — **carpophora** Hew. (148 f) is the northern form and but little different; beneath, on the whole, darker brownish-black with less green and red, the black eye-spot mostly smaller and, instead, more broadly bordered with silvery-green. Mexico and Guatemala.
- carpasia*. **Th. carpasia** Hew. (148 d) is above similar, but with decidedly black veins; the proximal brown part of the scent-spot is twice as long as the distal black part. Beneath the brown wings are black-veined, without any transverse lines, only before the anal angle of the hindwing several silvery-green macular bands; in the red basal part there are 3 black spots with silvery-green pupils. Abdomen beneath orange-red. Mexico, Guatemala.
- polybe*. **Th. polybe** L. (= *atys* ♀ Cr., *scamander* Hbn.) (148 c). ♂ above turquoise-green, ♀ duller, more bluish-grey, with black veins running radiatingly into the broad blackish-brown border. Scent-spot double, the proximal half mostly lighter brown than the distal black half, the transverse vein separating both is likewise covered with modified scales of a greyish-blue colour. The under surface is olive in the ♂, in the ♀ more yellowish-brown, with black veins, the disc of the forewing in the ♂ opalescent blue. From Mexico to South Brazil and Argentina, but everywhere rare.
- halesus*. **Th. halesus** Cr. (= *dolichos* Hbn.) (148 c) is above metallic greenish-blue with a moderately broad black distal margin and a very broad black anterior angle of the hindwing. Scent-spot triple: between the smaller proximal brown part and the irregular larger distal part there is, on the transverse vein, a brown oval surrounded by single blue scales. Beneath brown; below the median of the forewing and along the proximal margin of the hindwing opalescent-blue stripes; at the base of the forewing 1, at the base of the hindwing 2 red spots, at the anal angle some golden and silvery-blue spots. Abdomen beneath orange. Widely distributed from the Southern States (Florida-California) to Mexico and Costa Rica. — Northern specimens, **juanita** Scudder, exhibit chestnut-red spots between the anal-angle-spots.

Th. gaumeri *Godm. & Salv.* (148 d) is smaller, with only 1 greyish-brown scent-spot, black veins *gaumeri*, and, at the apex of the forewing, white fringes. Beneath the blue of the forewing is much more extensive and fills up the whole cell; the anal-angle-spots at the hindwing are much broader and quite green. The ♀ is unicolorously greyish-brownish. Only from Mexico.

Th. cynara *Godm. & Salv.* (148 c). Likewise resembling *halesus*, but beneath without the discal blue, *cynara*, and the anal-angle-spots form a coherent, broad red-golden band. The margin of the forewings above much broader black. Mexico.

Th. atys *Cr.* (148 e). Larger than *halesus*, above more green, ♂-scent-spot something like that of *atys*, *polybe*, but the bordering of the proximal half, inclusive of the transverse vein, is leaden-grey. The ♀ is more silvery-green, the margins much broader dull blackish-brown. Under surface brownish, with broad darker veins and a dark band at the cell-end; at the base of the hindwing there are red spots, behind them silvery-green ones, 2 green macular rows in the black anal angle. Abdomen beneath orange-red. From Panama to Colombia.

Th. melidor *Drc.* (148 d, e) is above bluer than the preceding; beneath the dark cell-end-band is *melidor*, absent, along the costa of the hindwing and of the proximal margin there are long red stripes. Abdomen beneath vermilion. Captured in Peru in August.

Th. cosa *Hew.* (148 e). Smaller than *atys*, above deep metallic blue with somewhat broader blackish- *cosa*, brown margins; beneath lighter brown, the basal half of the forewing darker with a dark, distally light-bordered transverse band behind the cell, projecting far outwards below the lower radial vein; in front of the margin on both wings dark transverse lines, a similar one at the cell-end of the hindwing. Brazil.

Th. baxis *Godm. & Salv.* (148 d). Above likewise similar to *atys*, but of a more magnificent peacock- *baxis*, blue; the scent-spot triple as in *halesus*, the middle part more yellowish-brown. Beneath similar to *melidor*, but of a blacker fundamental tone; behind the cell of the forewing there is a series of green, small metallic spots, interrupted on the lower radial vein; the red stripes of the hindwings are of a magnificent carmine colour, between them there are opalescent silvery-green stripes. Panama. — STAUDINGER described as *vulnerata* specimens *vulnerata*, that are of a purer blue above, without a green reflection, with a narrower black margin; they are presumably scarcely to be separated.

Th. torfrida *Hew.* (148 e) differs from all the preceding species by the absence of a scent-spot on *torfrida*, the forewings, but instead there is a hair-tuft near the proximal margin of the hindwing beneath. Above dull indigo-blue with a very broad, blackish-brown apex. In the black anal part of the hindwing there are 3 silvery-green spots. Beneath almost like *atys*, but the light costal-marginal part of the forewing exhibits behind the cell a dark-brown triangular spot; of the same colour is the apex and the space between the lower median vein and the lower radial vein. Amazon.

Th. coccineifrons *Godm. & Salv.* (148 e) is very much alike, but immediately separable by the glaring *coccineifrons*, carmine forehead in both sexes and the almost black under surface of the hindwings, from which the metallic silvery-blue anal spots shine forth. From Mexico to Colombia.

Th. carthaea *Hew.* (148 g) approximates *halesus*, but it has no scent-spot; above magnificently deep *carthaea*, peacock-blue with an extremely narrow black margin, only the apex of the forewing somewhat broader black; in the black anal part of the hindwings are small, lustrous, metallic green spots. The under surface is almost black, at the bases of the wings are carmine and green spots, at the costal margin of the forewing behind the middle 3 green spots, in the anal part of the hindwing 2 short macular rows, the distal one green, the proximal one more golden. Apparently found hitherto only in Mexico.

Th. caranus *Cr.* (= *ceranus* *Godt.*, *pelops* *Cr.*, *petus* *F.*, *getus* *Ww.*) (148 g) is larger, otherwise above *caranus*, like the preceding, perhaps of a somewhat purer ultramarine blue. Beneath the bases of the wings are much more extensively deep carmine with numerous black, bluish-white-pupilled spots; the inner-marginal half of the forewing is in the ♂ violettish-blue, the ground-colour of the hindwings of a slight green lustre. From Panama, Colombia, Guiana and the Amazon.

Th. silumena *Hew.* (148 g) has a rounder shape of the wings, above lighter greenish-blue, very *silumena*, brilliant, with a broader black apex and costal margin of the wings; beneath the ground-colour is lighter, reddish-brown, the marking almost the same as in *caranus*. The forehead is red, in *caranus* almost black with silvery-blue margins round the eyes. Colombia.

Th. didymaon *Cr.* (148 g) is much smaller than the preceding with a considerably broader black apex *didymaon*, of the forewing, above deep ultramarine-blue; beneath dark brown with 3 very conspicuous white spots of the costal margin; the basal red is reduced. Brazil (Amazon, Sao Paulo).

Th. neora *Godm. & Salv.* (148 h) is still smaller, the blue more intense, still more reduced by the *neora*, extensive black, beneath the colouring and marking is just the same, but the small white spots are smaller and narrower; forehead and the hairs on the thorax are rusty-red, in *didymaon* black. Mexico, Guatemala, Colombia.

16. Phaleros-Group.

phaleros. **Th. phaleros** L. (= *silenus* Cr., *agis* Drury, *silenissa* Hbst., *chiton* F. (?) (150 a, b). Above extremely lustrous ultramarine-blue. The proximal half of the double scent-spot is round, jet-black, with grey rings, the distal half almost four-cornered, brownish-grey. The ♀ is above dull greyish-blue, with broad blackish-brown margins and the under surface-marking shining through. Beneath the ♂ is reddish-white, the ♀ more yellowish-white with 3 black transverse bands converging towards the proximal margin; distal margin with an orange tinge. Very common from Mexico to South Brazil.

battus. **Th. battus** Cr. (= *bathys* F., *bathildis* Fldr.) (150 a) has exactly the same scent-spot as the preceding, but it is smaller with narrower black margins and an orange-red anal spot of the hindwing. The ♀ is above almost white, of a pale violettish-blue lustre with the marking shining through from beneath, being well reproduced in our figure. The forehead is red. — The name of **aufidena** Hew. (= *jalan* Reak.) may be perhaps applied for the specimens originating mostly from the northern habitats, with a brilliant, deep violettish-blue, the typical *battus* being lighter blue. Very widely distributed from Mexico to Colombia.

17. Viridicans-Group.

viridicans. **Th. viridicans** Fldr. (149 f) is above lustrous green with very broad black margins, beneath almost exactly marked and coloured as *barajo* (149 e), only the white line close before the border is absent. Colombia.

barajo. **Th. barajo** Reak. (= *desdemona* Hew.) (149 e) is above lustrous sky-blue and very much distinguished by the polished spot in the costal half of the hindwing above; the ♀ is duller and more greenish-blue with the marking shining through from beneath. The under surface is brown, each wing traversed by 4 white transverse lines converging towards the proximal angle; fringes white. From Mexico to Panama, everywhere very common.

laothoë. **Th. laothoë** Godm. & Salv. (149 g) greatly resembles the preceding, though it has broader dark distal margins and dark fringes, as well as a somewhat more greenish tinge of the upper surface, the polished spot of the hindwings being absent besides. Beneath there is little difference, at the anal angle of the hindwing more black at most. The scales of the forehead are turned upwards, in *barajo* downwards. Costa Rica, Guatemala.

oceia. **Th. oceia** Godm. & Salv. (149 g) resembles *laothoë* so much that the authors themselves thought a specific separation to be doubtful. It is above greener, the margins much narrower, the fringes white; beneath the white bands of the hindwings are narrower. Costa Rica and Panama.

theia. **Th. theia** Hew. (= *aethesa* Hew. *pro p.*) (150 c, d) we join here, though it deviates greatly. ♂ above lustrous green; ♀ somewhat bluer and duller with broad black margins. Under surface grey with black transverse lines being similarly arranged as in the preceding. In front of the border of the hindwing 3 orange-yellow spots. Apparently very rare, but it has been found from Panama to Bolivia.

erybathis. **Th. erybathis** Hew. (150 a) presumably also belongs to this group. Above almost like *barajo* (149 e), but without the polished spot and with broader margins of the wings; the tails are much broader, the whole animal very delicate, in the ♀ the marking beneath shines through above, the under surface being exactly like that of *battus* (150 a) except the anal lobe being white, not orange. Not rare in Mexico, nor in Honduras.

18. Gibberosa-Group.

gibberosa. **Th. gibberosa** Hew. (149 g ♂, not ♀). Very conspicuous by the hunch-shaped projection of the costal margin of the forewing in the ♂, which is absent in the ♀. The wings are white, with a lustrous bluish-green tinge in the basal half of the forewing and the basal half of the costa of the hindwing, the marking beneath shines through above. The ♀ is entirely white with broad black margins. Colombia, Bolivia. — f. **tomlinsoni** Drc. (149 f, g, ♂, not ♀) has been described from Peru, the whole wing being above covered by an opalescent bluish-green.

phydela. **Th. phydela** Hew. (149 f). ♂ above sky-blue, the hindwings distally white, the margins of the forewing rather broadly black, the ♀ all white; in both sexes the black transverse bands beneath shine through above. — *dealbata.* In **dealbata** form. nov. (149 g) the whole hindwing is blue. Both the forms fly in Brazil.

numen. **Th. numen** Drc. (149 e, f) is, according to the description; a good species, since the lower median vein of the forewing beneath is vesicularly inflated in its proximal half, like in *gibberosa*, which is not the case in *phydela* which it otherwise resembles very much. It is much larger, the forewings and the basal halves of the hindwings opalescent bluish-green, in the ♀ entirely white, also beneath nearly the same markings. Roraima (Brit. Guiana).

19. Ematheon-Group.

Th. ematheon *Cr.* (149 d, e) is an extremely rare species of which only 2 specimens have become *ematheon*. known hitherto, and most peculiarly from Surinam and Peru, so that it is certainly a very widely distributed animal. Above deep-blue, on the forewing in the disc a purple-violet reflection with a very large black discal spot; distal margin narrowly black. Beneath, the black ground exhibits white and brown irroration.

Th. busa *Godm. & Salv.* (149 d) is above somewhat similar, deep-blue, in the disc a purple reflection, *busa*. in which the large black cell-spot is situated; the margin is somewhat broader black. Beneath dark brown with silvery-grey transverse speckles being united to broad areas behind the middle. From Mexico to Costa Rica.

Th. perpenna *Godm. & Salv.* (149 e) from Panama is much smaller and of lighter colours with a *perpenna*. broad black apex of the forewing and a smaller discal spot without the spot at the cell-end.

Th. undulata *Hew.* (149 e). Above lustrous green like *viridicans* (149 f), without the scent-spot, beneath *undulata*. marked almost just like *busa*, but lighter brown. The ♀ is above a little duller and bluer with broader blackish-brown margins. Lying before me from Colombia and Brazil (Itaituba).

20. Tolmides-Group.

Th. tolmidēs *Fldr.* (149 a) is allied to the preceding group and forms the transition to the *aegides-* *tolmidēs*. group. Above lustrous blue with moderately broad black distal margins. In the black anal part of the hindwing we notice the beginnings of a blue marginal line. Beneath greyish-brown with very similar linear markings like those of the following group, in the basal part darker. The nomenclatural type occurs more to the south than the form *hyas* *Godm. & Salv.* (149 b) from Mexico, Guatemala, Costa Rica and Panama. The ♂ of it has *hyas*. above much narrower black margins and is beneath more chestnut-brown, the linear markings are less distinctly prominent.

Th. danaus *Fldr.* (149 b) likewise closely approaches to this type, though it might also better form *danaus*. a group for itself. Above more greenish-blue. Beneath blackish-grey with bluish-white linear markings: on the forewings only one oblique, bent line behind the cell, the margin somewhat darker; the proximal line of the hindwing is removed inwards in the broad subcostal area, the distal one gets jaggy towards the anal part, the space between it and the somewhat darkened margin is slightly dusted in whitish. The anal lobe is split off like in the *lisus*-group. Colombia, Bolivia, Peru.

Th. tityrus *Fldr.* (149 b) is above radiantly greenish-blue, the broad black margin sharply defined, *tityrus*. Beneath brown; on the forewing 2 white postdiscal lines, disappearing in the whitish proximal margin, the proximal one forms proximally an acute angle in the submedian area, the distal one is a little broader. Hindwing before and in the centre with 2 white lines, the latter forms at the proximal angle a distinct W, then the costal margin up to the lower median vein is followed by a coherent band of a magnificent deep carmine colour, on both sides bordered by white, next to it between the median veins a black spot; in front of the border yet a fine white line. Lying before me from Colombia, from the Rio Negro.

Th. appula *Hew.* (149 c) which we include here is apparently very rare; it is compared with *danaus appula*. by HEWITSON, but it differs greatly from all those known, exhibiting also resemblances to *phoenissa* (152 e) or *havila* (148 b). Before me is also a ♀ which is above duller blue than the ♂ which exhibits a small black scent-spot in the upper cell-corner, with broader black margins. Beneath light brown, the space between the two proximal white lines somewhat darkened, behind it extensively dusted in whitish. Colombia, Venezuela and Bolivia.

21. Aegides-Group.

Th. aegides *Fldr.* (148 h) is above blue with rather broad black margins without a sexual spot; *aegides*. in front of the border of the hindwing is, particularly distinct in an anal direction, a bluish-white line; fringes orange-brown; the ♀ is of somewhat duller colours. The under surface is cinnamon-red with 3 fine bluish-white transverse lines proceeding on the forewing from somewhat thicker and more purely white costal spots; on the hindwing, close before the border, there is a fourth, similar line; anal lobe black interspersed with cinnamon-brown scales; above it the proximal margin is somewhat sinuous and here there is a thicker white spot. Venezuela, Colombia. — form. **amplitudo** *Drc.* (149 b) has only half as broad black margins and a violet tinge in *amplitudo*. the blue; it is the form flying in Ecuador. — On the contrary, the form flying more to the north in Central America (Mexico and Guatemala), **furina** *Godm. & Salv.* (148 h), has much broader distal margins and a darker, *furina*. more blackish-brown under surface.

Th. cyda *Godm. & Salv.* (148 h) resembles *barba* (149 a) above by the very broad black distal *cyda*. margins and the lustrous blue colour; beneath it scarcely differs from *aegides*; both sexes are equally coloured. Costa Rica.

- epopea*. **Th. dignota** *sp. nov.* (153 b) differs from *aegides* (148 h) by a rather large, round, greyish-brown scent-spot at the cell-end, a very sharp apex of the forewing, below which the distal margin looks almost concave, red-brown fringes and tail; the anal lobe is likewise quite red-brown, in its centre pupilled with some greenish-silvery scales, the fringes at it partly white; the bluish-white line in front of the border is absent altogether. Beneath, on the cinnamon-brown ground-colour, are the same transverse lines, but they are fine black, strewn with silvery-grey scales and only towards the costa of the forewings somewhat broader and whiter; the third, counting from the base, is regular and sharply dentate with distally concave bows. Described according to a ♂ from Bogotá (Coll. FASSL).
- comae*. **Th. comae** *Drc.* (149 a) forms the transition to the following species by the ♂ forewing exhibiting a large discal spot of modified scales of an oval shape, which, however, stands out against the colour of the wings only in an oblique exposure to light; besides this the species resembles above *aegides* (148 h); the under surface is more blackish-brownish, the line-marking otherwise very similar, but on the forewings, subapically, are the beginnings of a 4th line and on the hindwings, between the median veins and in front of the black-pupilled anal lobe, are 2 black spots in light, reddish surroundings. Colombia (Muzo; Rio Aguaca Valley).
- ion*. **Th. ion** *Drc.* (149 a) has the same, hardly noticeable scent-spot, is somewhat lighter, more greenish-blue and has much narrower, black distal margins. Beneath like the preceding, but the ♂ has an opalescent blue discal spot of the forewing. Colombia. — From Medina (East Colombia) there is a ♂ before me (from the Coll. FASSL) which I should like to include here provisionally as a subform: **extrema** *form. nov.* (153 b). It is above still lighter, greenish silvery-blue, entirely without a black distal margin, the discal spot is above still larger and beneath the whole forewing is opalescent blue, so that there remain of the transverse lines only 3 minute white spots at the costal margin.
- barba*. **Th. barba** *Drc.* (149 a) has narrower wings than the other representatives of the group, above very broad black margins and beneath on the forewings only one bluish-white transverse line crossing the disc; on the hindwings the basal transverse line is only indicated by a costal marginal streak, the marginal line is absent altogether. Colombia (Muzo; Rio Aguaca Valley).
- auda*. **Th. auda** *Hew.* (149 b, c) is a somewhat smaller species, above more violettish-blue with broad black margins; beneath greyish-brown with quite a similar linear marking as the preceding species, but in front of the border of the hindwing are 2 undulate, parallel, light lines, between them, at the anal angle, 3 black, triangular spots being above bordered by orange-red. Occurring in Colombia and common, but it also lies before me from Lino (Panama) from the Coll. FASSL.
- chlamydem*. **Th. chlamydem** *Drc.* (149 c, d) is perhaps only a form of *auda*; above more indigo-blue with broader black margins; beneath, on both wings, the distal white transverse lines are more distinct, and on the hindwings the discal markings are doubled by proximally white dusting. Peru, at an altitude of 5 to 6000 ft.
- sala*. **Th. sala** *Hew.* (159 a). We herewith include some species exhibiting at the same time close relations with the *coelicolor*-group following later on. *Sala* is above dull violettish-blue, on the forewings with broad blackish-brown margins, on the hindwings very narrowly margined with the fringes parted by white towards the anal angle. Beneath dark brown, in the ♂-disc of the forewing with a slight steel-blue shine. The marking is similar to that of *auda* (149 b, c), but on both wings the basal transverse lines are absent, and the post-discal of the hindwing runs almost straight from the costal margin to the lower median vein. Colombia.
- maraches*. **Th. maraches** *Drc.* (159 a) is very similar, above more lustrous steel-blue, the shape of the wings as in *epopea* (157 c) and the tails as fine as they are there. Beneath not so red-brown, more blackish-brown, the lines clear and distinctly light-blue, much straighter, on the forewings at the costal margin more moved apart, continued to the proximal margin, the submarginal on the lowest subcostal vein distally obtuse-angled. On the hindwings the postdiscal begins also much further towards the base, at the anal angle there are only 2 deep brown-red spots. Colombia (Cañon del Tolima, FASSL).
- salaeides*. **Th. salaeides** *sp. nov.* (159 a) is very closely allied to *sala*, but it is above of a lustrous ultramarine-blue, the margins and apex only half as broad and jet-black, the shape like *sala*, but the tails very fine. Beneath almost just the same as *sala*, but on the forewings the postdiscal makes a deep bend towards the base, below the lower median vein; on the hindwings it begins at the costal margin more towards the base, and there is a second, dusty-white lunular line in front of the border; 3 red anal lunae. Colombia: Pacho (FASSL).
- peonida*. **Th. peonida** *sp. nov.* (159 a) likewise greatly approximates the preceding species, above brilliantly metallic sky-blue, with a broad black apex and distal margin of the forewing, a similar costal margin of the hindwing, and a narrow distal margin; in the anal lobe a short white line; the base of the fringes in that lobe also white. Beneath very much like *salaeides*, distinguished by a short metallic-blue stripe in the disc of the

hindwing near the base; only one red eye-spot between the tails, between it and the black anal spot white dusting. Colombia: Rio Aguaca Valley (FASSL).

Th. aurorina *sp. nov.* (159 a) is undoubtedly the most magnificent species of this group, above almost *aurorina*. like *aurora*, radiantly light-blue with a large blackish-brown scent-spot filling up nearly the whole cell, and a moderately broad black apex, the margins otherwise very narrow black. Beneath blackish-brown, at the proximal margin of the forewing somewhat lighter, marked like *coelicolor* (157 b), but the lines beautifully light-blue, on the forewings bent uniformly; on the hindwings, in front of the border, indistinct darker spots in the spaces between; only one red spot of the tail. Colombia: Cañon del Tolima; Quindiu Pass (FASSL).

Th. thargelia *Burm.* (159 a) is closely allied to this group, though greatly deviating. Above plainly *thargelia*. greyish-brown, the ♂ with a blue disc, on the hindwing the black marginal line is proximally whitish bordered towards the anal. Beneath just as dark greyish-brown with whitish postdiscals being proximally finely bordered by black, on the hindwings running straight from before the middle of the costal margin to the lower median vein close in front of the border, in order to form towards the inner-margin a very high, pointed W; the sub-marginals are far off from the border, broader black, proximally white. analwards there are behind it 2 large orange, black-pupilled spots. The marginal line distinct, proximally on the hindwings very fine white. Fringes whitish. Abdomen beneath ochreous-yellow. Argentina.

Th. cadmus *Fldr.* (149 c) has, like the following, a much rounder shape of the wings, above in the *cadmus*. basal half of a radiant greenish-blue, outside blackish-brown, before the anal angle with the beginnings of a blue marginal line. The ♀ is a little duller, more silvery. The under surface is red-yellow, again with the same light-blue linear markings which, however, are here much more dentate, particularly on the hindwings. Common in Panama, Colombia, Bolivia, Venezuela, Guiana.

Th. timaeus *Fldr.* (149 c) is above bluer, the apex of the forewing somewhat more pointed, the tails *timaeus*. shorter. Beneath, the forewings have only one bluish-white transverse line, and at the apex there are 1 or 2 white dots, the lines on the hindwing are not so dentate, running more uniformly. Colombia, Bolivia.

Th. petelina *Hew.* (149 d) not lying before me is placed here. Above very much like the two preceding *petelina*. ones. Beneath red-brown, on both wings a white discal streak, behind it 3 white transverse lines; on the hindwing, besides, a moon-shaped spot near the base, in the centre a light-blue macular band and behind it a broad red-brown, white-bordered band; the spot of the tail and the anal spot brown, proximally bordered by light-yellow. From Costa Rica and Panama.

22. Havila-Group.

Th. adamsi *Drc.* (148 h) is difficult to place; as it is compared with *havila* by the author, it may *adamsi*. be placed here, although it has no scent-spot and has 2 tails, for which reason it would have perhaps been better placed to the *aegides*- or *danaus*-group (p. 753). Above lustrous greenish-blue, towards the margin more purple; distal margin narrow black. Beneath chocolate-brown with bluish-white lines. Peru.

Th. havila *Hew.* (148 b) is not well recognizable from HEWITSON's figure being copied here. The *havila*. ♂ is above deep ultramarine-blue, towards the margin of a purple lustre. Scent-spot oblong, double, the part in the cell browner than the blackish part behind it; anterior angle of the hindwing particularly broad black. The under surface is greyish-brown with 3, towards the anal angle somewhat convergent lines of a blue scaled striation, those towards the margin broader and more faded; between the median veins of the hindwing a small red-yellow, black-margined eye-spot. Abdomen beneath orange-yellow. Colombia.

Th. margaritacea *sp. nov.* (153 b). Upper surface light greenish-blue, with a mother-of-pearl gloss, *margaritacea*. entirely without the black margin, only the fringes blackish grey. The brown scent-spot small, procumbent-oval, pointed at both ends, behind the cell. Hindwings remarkably long-stretched; in the specimen before me there is only one tail, but there seems to have been a short small tail also at the upper median vein. Under surface of the forewings opalescent greenish-blue with a narrow, blackish-grey costal margin and apex, the place of the scent-spot prominent as a small hunch; hindwings blackish-grey, sparsely strewn with green, in the cell and towards the proximal margin covered with long hair. A little before the middle of the costal margin, in the subcostal space, a bluish-green streak-spot; in front of the border 3 rather closely adjacent, bluish-green silvery lines, indistinct, consisting only of scattered, single scales. Anal lobe as in *danaus* (149 b), to which it may also be allied, somewhat split. 1 ♂ from Muzo, Colombia. (Coll. FASSL.)

Th. celelata *Hew.* (149 c) is likewise a species difficult to place. Above something like *cadmus* (149 c), *celelata*. beneath brown, marked like *havila* (148 b), but on each of the wings one whitish line nearer to the base; the costal margin of the forewing is strewn with white, all the white lines broad, somewhat faded and strewn with brown. Described from Brazil.

23. *Platyptera*-Group (*Micandra Schatz*).

platyptera. **Th. platyptera** *Fldr.* (153 c) according to our present conception, is not to be separated from *Thecla*, regarding the genus. In the scheme of markings beneath it offers close resemblances to *cadmus* (149 c) and may, therefore, be placed here. Above like *ion* (149 a), also with a similar large scent-spot reaching further towards the base only in the cell. Beneath the forewing is of a brilliant blue, the proximal margin whitish-grey, the costal margin and distal margin narrowly black. Hindwings without tails, black with 4 very fine dentate lines consisting of single, scattered bluish-white scales; in front of the border are somewhat larger double-spots. Colombia, Venezuela, Peru.

circinata. **Th. circinata** *Hew.* (149 d) we also place here, as it is beneath marked exactly like *timaeus* (149 c), although it looks above quite differently: deep ultramarine-blue, with a black margin occupying almost half the forewing, the untailed hindwings are only at the costal-marginal angle somewhat broader black, the distal margin being narrow. Costal margin whitish-grey, below it a large, dark blue scent-spot strewn with black. Beneath the ground-colour is blackish-grey, the lines light-blue; the forewing exhibits an opalescent blue discal spot. Colombia, Bolivia. The species at the same time shows close relations with the following group.

sapho. **Th. sapho** *Stgr.* (146 c) has been placed to *Micandra* by the author without the reasons being mentioned, but it seems much rather to be a *Theorema*. It was described from Colombia and has hitherto apparently not been found any more.

24. *Eronos*-Group.

eronos. **Th. eronos** *Drc.* (153 c) is above magnificently peacock-blue with a darker apical third of the forewing, without a scent-spot and tails; the lower median vein of the hindwing is set with long hair. Beneath, the forewing is in the disc of an extensive opalescent blue, the hindwing almost black, strewn with scales of a greenish reflection, and with 2 similar, undulated, quite indistinct transverse lines. Colombia.

trochus. **Th. trochus** *Drc.* (153 c) is very similar, but above brilliantly green and beneath on the hindwings lighter with more distinct light transverse lines and a red, black-pupilled spot between the median veins. On the forewings the opalescent-blue colour is confined to the part round the median veins behind the cell. Colombia (Pacho, Muzo, Rio Aguaca Valley).

25. *Thara*-Group.

thara. **Th. thara** *Hew.* (= *ivelia* *Gosse*) (153 c). The ♂ is above magnificently light ultramarine-blue, the ♀ somewhat more greenish with a broad black apex of the forewing. Beneath brownish-grey with 2 rows of white, proximally darker-bordered lunular spots behind the middle, both wings with a white discal streak, the hindwings towards the base below the costal margin with an additional white streak-spot; the proximal white line forms a pointed W at the proximal margin of the hindwing, the surroundings of the distal line are here more or less strewn with bluish; anal spot black, above bordered by white, between the tails a black spot bordered above by orange. Brazil (Rio, Sta. Catharina).

eunus. **Th. eunus** *G. & S.* (153 d) is coloured and marked just the same on both surfaces and has also beneath the same black scent-spot at the base of the forewing below the median, but the costal margin of the hindwing is bent more convex and on the upper surface is a lustrously polished scent-spot like in *barajo* (149 e) below the costal margin at the base of the hindwing. From Guatemala to Colombia (Muzo).

26. *Gigantea*-Group.

gigantea. **Th. gigantea** *Hew.* (153 d). I know only from HEWITSON's description and figure. Above light-blue with brownish-black veins and margins and a very large discal spot. Beneath reddish-brown with cell-spots and dentate lines which are bordered by white on the forewings only distally, on the hindwings on both sides; in front of the border is yet a brownish, proximally white-bordered macular band, and at the anal angle 2 black spots being bordered above by red-yellow. Pará.

27. *Linus*-Group (*Arawacus Kaye*).

linus. **Th. linus** *F.* (= *lincus* *Godt.*, *aetolus* *Cr.*, *amelia* *Hbst.*) (150 c) is above white with the marking showing through from beneath, a broad blackish-brown distal margin and 2 similar lines in front of the border of the hindwing. The ♂ exhibits, below and behind the cell, a large, roundish scent-spot which mostly sends forth yet a tiny spot into the lower cell-corner and which, in contrast with the following species, always ends roundish outside on the lower median vein. Beneath there are 5 black stripes being convergent towards the proximal angle on the hindwing; the proximal and distal margins are orange, the latter colour bordered by the fifth black stripe running near and parallel to the distal margin, the two next ones approximating each other. Anal angle black with 4 white dots. Colombia, Venezuela, Amazon, Bolivia.

Th. togarna Hew. (150 b, c) is very similar, mostly somewhat smaller; the very variable scent-spot *togarna*, is more triangular, on the veins, interrupting it by their light colour, it is distally produced taperingly, particularly on the lower median vein. Beneath, on the hindwings, there are only 4 black stripes not parallel to the distal margin, the orange border not defined by black, the two next stripes do not approximate each other more than the others; the anal angle is mostly much lighter in typical specimens. — **lincoides** form. nov. (150 c). I denote *lincoides*, a larger, robust form resembling *linus* still more by its broader black beneath, and also above the discal spot it is larger and is almost or entirely confluent with the marginal band. This latter form flies more in Colombia and Ecuador, the type being widely distributed from Mexico to Bolivia.

Th. aethesa Hew. (150 c) is an extremely rare species from Bahia resembling *linus* almost entirely *aethesa*, in the marking beneath, but the ground of the wings above and beneath is reddish-brown instead of white.

Th. leucogyna Fldr. (150 b) resembles in the ♀ above the *linus*- and *togarna*-♀♀, but it has an orange- *leucogyna*, yellow anal spot of the hindwings; the ♂ is above dark violettish-blue. Under surface creamy-white with fine black lines, an orange anal-angle spot of the hindwings and in the ♂ with a large black scent-spot below the cell of the forewing. Colombia.

Th. phaea G. & S. (= *sito* Btlr. & Drc. nec Bsd.) (150 b) is most similar to the preceding, the *phaea*, ♂ more bluish-grey, paler, the costal margin of the hindwing, and mostly a spot between the blue and the apex of the forewing, are whitish, the ♀ usually has a broader blackish-brown distal margin and on the hindwing mostly 2 distinct dark lines in front of the border (*leucogyna* is marked either without these lines at all or only with the beginnings of them at the anal angle). Beneath in the ♂ the black scent-spot has a narrower and brown border, in the form **phaenna** Godm. & Salv. quite chestnut-red. Central America (Honduras to Panama). *phaenna*.

Th. sito Bsd. (149 h) is above bluish-grey also in the ♀, the ♂ lustrous violettish-blue, easily discernible *sito*, from the preceding by the polished scent-spot on the hindwing above near the costal margin, the one on the forewing beneath being bordered by orange-yellow approaching red-brown. Mexico to Nicaragua.

Th. melibaeus F. (= *euryides* Hbn.) (150 d) resembles the preceding above, but without the large *melibaeus*, orange-red anal spot; beneath the ground-colour is yellowish, the lines are finer and towards the costal margin they are traversed by the fine, black veins. Brazil.

Th. azaria Hew. (149 h) presumably belongs to the same group as the following, though it is above *azaria*, blackish-brown with a white, rounded median band and only little blue towards the base and in the disc of the hindwing. Beneath the black bands are much broader, more than in *battus* (150 a), entirely flown together at the base of the forewing. Patria unknown.

Th. pedusa Hew. (149 h) is above blackish-brown with a small round discal spot, the disc of the *pedusa*, hindwing blue, at the anal angle an orange spot. The under surface is blackish brown with narrow silvery-white stripes. The ♀ is above lighter and more reddish brownish-grey. Amazon.

28. Umbratus-Group.

Th. umbratus Hbn. According to HÜBNER's figure, the butterfly has about the shape of *luothoë* *umbratus*, (149 g), but it is smaller, only about half as large as *perpenna* (149 e). The wings are of a bright lustrous cyanide-blue above, the forewings with a broad, the hindwings with a narrower black margin; the scent-spot of the ♂ whitish. The under surface is dirty leaden-grey; the forewing with 2 parallel, the hindwing with 3 analwards convergent transverse stripes; before the apex of the hindwing a rusty-red, oval spot. Is stated to originate from Yucatan.

Th. parthenia Hew. (150 h) exhibits in its whole shape and scheme of markings also relations to *parthenia*, the *loxurina*-group. Above lustrous blue with an oval scent-spot and a broad black apical part of both wings. The under surface is sooty grey, on the forewing with a dark-brown, faded band behind the centre and another one in front of the border. Hindwings speckled in black, in the basal part with several dark indefinite spots, a median band being pointedly broken towards the anal angle and in front of the border a series of small brownish spots. From Mexico to Nicaragua.

Th. catadupa Hew. (153 e) is unknown to me in nature, but seems to approximate the two preceding *catadupa*, ones. Above lustrous blue with broad black margins, without a scent-spot; hindwing with a broad tail and a large anal lobe. Beneath greyish-brown, on the hindwings darker. Forewing with a broad brown band behind the centre and a narrower band in front of the border, both bordered by white on both sides; the hindwing exhibits 3 bands being equally distant from each other. Ecuador.

Th. chaluma Schs., according to the description, seems to me the least unfit to be placed here. Above *chaluma*, the basal $\frac{2}{3}$ of the forewings and the hindwings are dull violettish-blue, distally black. Hindwing with a velvety-

black marginal line, proximally tinged whitish with a long broad tail. Beneath dull greyish-brown; forewing with a broad, distally whitish-dusted median shade, a similar one in front of the border and in front of it another one interrupted by the veins. Hindwing with a broad dark-brown median shade, the broadest in the cell, strewn with some bluish-white scales, and a narrower distal shade being dentate on the veins; in front of the border a broad, brown band being analwards dusted in grey, on the border a black line. Expanse of wings: 31 mm. Sta. Catharina.

29. *Loxurina*-Group.

- loxurina*. **Th. loxurina** *Fldr.* (150 g) is an extremely variable species. In the typical form as it flies e. g. near Bogotá, but also on the Cuesta of Cillutincara in Bolivia at an altitude of 3500 m, it is above deep violettish-blue with a rather broad black apex and distal margin and a small greyish-brown scent-spot in the upper cell-corner; the costal margin and the fringes are red-brown. The ♀ is duller, more greyish-blue with a much broader apex and distal margin; the tail and anal lobe deep red-brown, strewn with whitish scales. The under surface is dark cherry-coloured, strewn with bluish-white scales, so that particularly on the hindwings towards the anal part a violettish shade is created, with a red-brown line behind the centre, forming an acute angle on the lower median vein on the hindwing; in front of the border on both wings a series of small purple-brown spots. According to the locality, the occurrence of red creates a very different appearance: On the Quindiu Pass (3800 m) in the Colombian Central Cordilleras there appears at first a red colour towards the apex of the forewing, at the costal angle of the hindwing and at the anal angle (= **quindiensis** *form. nov.* 153 e), being extended to an almost entirely red upper surface, so that there remains only a black triangular spot in the middle of the costal margin of the forewing, by which the specimens resemble almost *atymna* (150 g): **atymnides** *form. nov.* (153 e). *quindiensis*.
atymnides. Beside the typical form there is another form in Bolivia at an altitude of 3000 m: **cillutincarae** *form. nov.* (153 e) *cillutincarae*.
cillutincarae. In which most strangely the red occurs at the anal angle of the fore- and hindwings. Finally, on the Monte Socorro (West Cordilleras) at an altitude of 3500 m, the hindwings are more or less red, the forewings remain blue: **fassli** *Drc.* (= *socorrensis* *Dgn.* i. l.) (153 e). Perhaps the two last forms are to be separated as a species of their own.
fassli.
amatista. **Th. amatista** *Dogn.* (= *candor* *Drc.*) (150 h) is very similar, smaller, with a darker, duller violet above; the anal part of the hindwing is extended to a short tail, a lobe is entirely absent. Beneath the whole basal half of the forewing is greyish-brown. Peru and Colombia.
atymna. **Th. atymna** *Hew.* (150 g) is likewise similar, but without a scent-spot, the ♂ deep violettish-blue, the ♀ is brown-orange. Beneath the forewings exhibit a dark cell-streak, both wings in front of the border another dark band. Tail and anal lobe as in *loxurina*. Ecuador, Bolivia.
catrea. **Th. catrea** *Hew.* (150 g) is presumably allied, as the shape of the hindwings corresponds with *loxurina*, but they are broader. Above radiantly blue with a broad black apex, beneath deep red-brown, strewn with white scales forming on the forewings behind the cell an indistinct short transverse line, on the hindwings in the centre a rectangularly broken dentate line, behind it yet a light shade; costal angle somewhat lighter brownish; below the costal margin, before the middle, there is yet a black, bluish-white-pupilled spot. Abdomen above blue, beneath orange-brownish. Brazil (Rio Grande do Sul).
dissentanea. **Th. dissentanea** *sp. nov.* (153 e). Shape of the wings as in *amatista*. Forewing yellowish-brownish, towards the base somewhat dusted in a light lilac-blue; hindwings light lilac-blue with a narrow brownish distal margin, fringes white; in the basal area the dark under surface gleams through. Beneath the forewings are greyish-brownish in the basal two thirds, on the lower median vein distally standing forth; marginal area white, at the proximal angle more yellowish with a narrow greyish-brown border and a similar line in front of it. Hindwing in the basal half blackish-grey, strewn with yellow and with white hair, particularly towards the proximal margin; distal area white, on the lower radial extending into the cell like a tooth; distal margin with the tail and a stripe before it being distinct only at the costal angle, are of the same colour as the basal part. Described according to 2 ♂♂ from Cuzco (Peru). (Coll. FASSL).

30. *Arria*-Group.

- arria*. **Th. arria** *Hew.* (153 f). Above dull greyish-brown, beginning from the median of the forewing greyish-blue, also in the disc of the hindwing; along the upper cell-edge of the forewing a narrow, long scent-spot. Anal angle of the hindwing somewhat advanced, without a tail. Beneath greyish-brownish, densely dusted in white; forewing at the proximal margin, beginning from the median, in the basal half shining greenish-blue, behind the middle with a yellow-brownish stripe; hindwing in front and behind the middle with just the same dentate lines and discal stripe. Colombia, Ecuador, Peru.
hybla. **Th. hybla** *Drc.* (153 e, f) is larger, above with a more brilliant and more extensive greenish-blue, without a scent-spot. On the under surface the dentate lines are purple-red and the surface of the wings is sparsely strewn with red, particularly towards the base; on the forewing, in the cell, there is a greenish-blue stripe, below it is an opalescent olive colour. Described from Ecuador.

Th. adunca *sp. nov.* (153 g) lying before me only in one ♀ is undoubtedly closely allied to *hybla*, though *adunca*. it has remarkably narrow forewings with a rectangular apex and very long-stretched hindwings with a concave costal margin and a long anal part being curved inwards. Above lustrous violettish-blue, on the forewings also above the cell, the costal margin narrow, the distal margin broad black. Costal angle of the hindwing broad blackish-brown, gradually tapering to the anal apex. Beneath the forewings are brownish-grey, with red scales at the cell-end; far behind the middle a darker undulate transverse band interspersed with red scales, extending as far as the lower median vein and being distally white-scaled like the outermost marginal area in front of which there are red crescentiform spots. Hindwings of a purer grey, strewn with red scales, with two strongly dentate red transverse lines and between them a red discal streak; the distal transverse line is distally tinged in white, running from the distal third of the costal margin in a straight direction as far as down to the submedian fold close in front of the border and then bending round acute-angled to the proximal angle, as it is the case in *loxurina*. The marginal part is, particularly towards the costal margin, lighter whitish, on the ends of the veins are thick black-red dots. Monte Tolima (Colombian Central Cordilleras at an altitude of 3200 m) in the Coll. FASSL.

Th. mirma *Hew.* (153 f) differs from *arria* by the absence of the scent-spot, above in the ♂ entirely *mirma*. brown forewings which are dusted in a greenish bluish-grey in the ♀. The under surface is browner with but one brown dentate line on the hindwings, behind it brightened up by reddish-white. Colombia. Peru.

Th. tyrrius *Drc.* (153 f, g) is to be separated from the preceding by the light-brown oblong scent-spot *tyrrius*. at the cell-end; above otherwise similar. Beneath brownish-grey strewn with dark-red scales, with the same dentate line behind the middle and an obsolete row of moonspots in front of the border; in the disc of the forewing, as in the preceding, an opalescent blue stripe. Ecuador.

Th. mishma *Hew.* (153 f) has above brilliant metallic-blue wings with broad, blackish-brown distal *mishma*. margins. The under surface greatly resembles that of *arria*, more red-brown, the dentate line of the forewing begins at the costal margin with an isolated spot. Colombia.

Th. oxida *Hew.* (153 f). Wings above deep violet, only the costal margin of the hindwing of a some- *oxida*. what purer blue with a very narrow scent-scale-stripe. along the upper cell-edge of the forewing. Fringes blackish-grey. Beneath likewise marked very much like the preceding, darker brownish-grey, strewn with red, the dentate lines more interrupted, not so coherent, in the ♂ below the cell of the forewing opalescent blue. Ecuador, Peru.

Th. schausa *Jones* (153 f). The ♂ is above black, the cell and submedian area metallic purple blue, *schausa*. behind the cell with a small scent-spot, the anal angle of the hindwing tan-coloured, fringes grey. Under surface more purple-brown, thickly strewn in red with red dentate lines, a red marginal band and a tan-coloured border; the forehead is red, too. The ♀ is of a duller blue, with a broader black border. Brazil. (Castro, Sao Paulo.)

Th. aurugo *sp. nov.* (153 g) resembles *oxida* above by the deep violet colour, but it has no scent-scales *aurugo*. along the subcostal, the distal margin is narrower black, the fringes orange-brownish. On the under surface the wings are very conspicuously lemon-coloured, strewn with red scales, and with similar, though not no very dentate transverse lines. Nearly the whole proximal margin of the forewings inclusive of the lower cell-half is of an opalescent greyish-green colour, the abdomen beneath orange-brownish; the basal half of the proximal margin of the hindwing is more greyish-brown. According to 2 ♂♂ from Cuzco (Peru) from the Coll. FASSL.

Th. commodus *Fldr.* (153 g) to a certain degree approximates *hybla* and especially *adunca*. The *commodus*. shape of the hindwings like in the latter. Above lustrous greenish-blue with very broad blackish-brown margins; beginning from the distal half of the cell the blue colour warms into a deep metallic olive-green towards the apex. Beneath the scheme of markings is likewise similar; on the hindwings the two dentate lines are separated at the costal margin by a large, olive-greenish or yellowish triangular spot; the marginal area is olive-green with small, purple-brown spots in front of the border in whitish-grey rings, being proximally mounted by angular spots of the same colour. Colombia.

Th. elongata *Hew.* (150 f) is likewise another specialisation of the same group. The blackish-brown *elongata*. forewings are only below the cell strewn with metallic blue, at the cell-end is the hardly noticeable large black scent-spot. Hindwings in the inner-marginal half somewhat more extensively blue. Beneath blackish-brown, at the proximal margin and border of the forewing lighter, almost whitish, with several, irregularly undulate, dark lines. The hindwings appear marbled by densely strewn light scales and exhibit several very irregularly dentate transverse lines. Marginal line distinctly black. From Ecuador and Bolivia.

Th. bilix *sp. nov.* (153 g) approximates *mishma*. Above lustrous metallic-blue with broad black *bilix*. margins and apex, costa and fringes red-brown; hindwing with a long-extended anal angle and equally long tail on the lower median vein. Beneath greyish-brown, strewn with red, with transverse lines consisting of incoherent lunular spots, on the forewings 2 close in front of the border, on the hindwing 3 equally distant from each other; each wing exhibits red discal transverse streaks; the inner-marginal blue is absent. Described according to a ♂ from the Rio Aguaca Valley (Colombia) from the Coll. FASSL.

31. Goleta-Group.

Th. goleta *Hew.* (154 e) is immediately recognizable by the peculiar shape of the wings with the *goleta*. deep concave indenture between the median and radial veins of the forewing, and by the long-stretched anal

angle of the hindwing. Above brown; beneath dull brown, on the forewing before the apex at the costal margin a light small spot bordered on both sides by brown. Hindwings whitish, clouded in brown; a small spot at the base of the costal margin, a broader band in the centre and an irregular marginal band dark-brown. Colombia.

crambusa. **Th. crambusa** Hew. (154 f) is somewhat larger, of the same shape of the wings, but with a short small tail on the lower median vein. Brown with small black spots in the anal part of the hindwing. Fringes white, on the forewing partly brownish. Beneath very much like the preceding, somewhat more multifariously marbled with a chestnut-brown spot bordered on both sides by whitish in the middle of the proximal margin of the hindwing, between the median veins a rusty-yellow spot and near the anal angle greyish-white dusting. Brazil, Bolivia.

binangula. **Th. binangula** Schs. is unknown to me like the following, but presumably belongs here; the shape of the wings is the same as in *crambusa*. Above dark-brown with a darker spot at the cell-end and some blue at the base of the forewing; hindwing, except the broad brown costal margin, light-blue with a small black spot between the median veins. Beneath greyish-brown with a dark cell-end spot bordered on both sides by white; the whitish apex is marbled in brownish-grey and proximally bordered by a brown, distally white shade. Hindwing with a round brown, white-ringed spot at the base of the costal margin; postdiscal double, whitish, inwardly bordered at the costal margin and proximal margin by a white angular spot; distal margin darker, dusted in reddish towards the anal region. Expanse of wings: 19 mm. Peru.

bolima. **Th. bolima** Schs. is much larger, the forewings more rounded. Above similarly coloured, but with black spots in front of the distal margin of the hindwings. Also beneath very similar with distinct brown, white-ringed spots in the centre of the costal-, cell- and proximal margin. Castro (Paraná).

32. Culminicola-Group.

culminicola. **Th. culminicola** Stgr. (153 g). Above deep violet with black margins and a particularly broad apex. Fringes white-speckled. STAUDINGER, in his description, has overlooked the greyish-brown scent-spot at the upper cell-end. Beneath blackish-grey, particularly distally strewn with white, with black dentate lines. The ♀ is above extensively light bluish-grey with a lilac shine. Colombian Andes at an altitude of 3500 to 4400 m, also from Cuzco (Peru).

alatus. **Th. alatus** Drc. (153 g, h) may be a distinct species owing to the unspeckled reddish fringes. The upper surface is lighter violettish-blue with a red lustre, the scent-spot is the same. The disc of the forewing beneath orange. Described from North Peru (11 500 ft.).

anosma. **Th. anosma** sp. nov. (153 h) is above quite dark-brown without a scent-spot, only the hindwings exhibit a faint violet lustre in the disc on being obliquely exposed to the light. Fringes unspeckled, brown, hindwing with a longer small tail at the lower median vein. The monotonously greyish-brown under surface strewn with red scales, with incoherent dark lunular spots entirely resembles that of *bilix*. A ♂ from Bogotá (3000 m) from the Coll. FASSL.

33. Irus-Group (*Incisalia* Minot).

augustus. **Th. augustus** Ky. (= *augustinus* Ww.) (153 h) undoubtedly is closely allied to the preceding group. Above brown, the hindwings analwards copper-reddish. The under surface is reddish-brown, in the basal half darker with a dark dentate median band of the hindwing and lighter, proximally darker-bordered, small triangular spots in front of the more purple-brown border. Distributed in the northern and western parts of North America. Larva carmine-red, with short hair.

iroides. **Th. iroides** Bsd. is extremely allied to *augustus*, above not different, beneath the space behind the postdiscals is not lighter than the border, the markings are more indistinct, the forewings almost unmarked. Pacific States. — f. **immaculata** Cokle is an albino form: straw-coloured to canary-yellow, above and beneath without any spots. A unique specimen from Kaslo in British Columbia.

fotis. **Th. fotis** Strecker. Size and shape of *augustus* (153 h); above unicolorously dark-grey. Beneath the forewings are rather dark slate-grey; with a submarginal row of almost obsolete dark dots, a hardly distinguishable, irregular, darker line through the disc; inwardly from the latter the wing is strewn with lighter atoms. In contrast with *augustus*, the hindwing exhibits beneath near the distal margin a white line followed by a band which is composed of dispersed, black, small scales, proximally from it a series of round, white spots or dots, each of which exhibits some black atoms; proximally from it a not very distinct light, dark-tinged line. From Arizona.

hadros. **Th. hadros** Cook & Watson. ♂ above brown, ♀ bright rusty-red with a copper-lustre, towards the margin and the base somewhat clouded. Fringes one-coloured, only near the apex with a white margin. Beneath dark-brown, the hindwings towards the margins dusted in grey, the broadest at the anal angle, otherwise marked like *irus*, mostly only faintly indicated; on the hindwings in the centre of the costal margin with a white diffuse spot; on the forewings stands a whitish postdiscal. Expanse of wings: 32 to 38 mm. — Texas.

Th. irus *Goldt.* (153 h) is above unicolorously greyish-brown, beneath almost just the same as the *irus*, preceding, more blackish-brown; the transverse lines of both wings have a distal white tinge at the costal margin. In the large, more southern form **arsace** *Bsd.* there appear reddish-lustrous spots before the anal part of the hindwings. Distributed in North America. The larva lives on the plum-tree.

Th. mossi *Edw.* (= *polios* *Cook & Watson*) extremely resembles the preceding; beneath the marginal area of the forewing is not brightened up, the dark basal area of the hindwing somewhat more extensive, distally bordered by a fine white line which is often very broad so that it may grow to a band of the colour of a grey-horse of about 2 mm width; the distal part is more indistinctly marked. Widely distributed from New Jersey, New Hampshire, Nova Scotia, Colorado, Canada, Vancouver.

Th. henrici *Grote & Rob.* which was often disputed by American authors with respect of its right of being regarded as a species, differs above by broad distal margins of a copper-reddish tinge; beneath the blackish-brown basal part is sharply and very irregularly defined, often distally accompanied by a complete, white line. From Maine to West Virginia, rather rare. The larva lives just like the preceding. — f. **solatus** *Cook & Watson* from Texas has more uniformly coloured basal and marginal areas beneath, more chocolate-brown and yellowish-brown, above less coppery lustre.

Th. eryphon *Bsd.* (154 f) is above dark brown, on the hindwings in an anal direction warming into copper-brown, fringes white-speckled. Beneath red-brown, on the hindwings more lilac-brown with purple-brown dentate lines, the proximal one bordered proximally by white, the distal one distally, with similar, small marginal spots and, in front of them, pointed, proximally black triangular spots. Distinguishable from the following, very similar species by the postdiscal being almost rectilinear on the forewing. California, Colorado.

Th. niphon *Hbn.* (154 f) is above and beneath extremely similar, but on the forewings beneath, the postdiscal projects sharply outside on the lower radial vein. The larva lives on pines. Nova Scotia to Colorado.

34. *Dolylas*-Group.

Th. dolylas *Cr.* (150 e). Above pale lilac-blue with very broad blackish-brown margins, in the ♂ with a very large, deep rust-brown, black margined scent-spot in the centre of the forewing. Beneath white towards the border yellowish with several blackish and brownish-yellow transverse markings. Widely distributed; from Guiana, Colombia, Bolivia, the Amazon.

Th. spurius *Fldr.* (= *dolosa* *Stgr.*) (150 f) is above, except extensively lighter hindwings, with a broad white costal margin and quite a narrow black distal margin, almost like the preceding, but it has no small tail and the scent-spot seems to be throughout lighter brown. Colombia.

Th. hypocrita *Schs.* (153 h) has neither a tail; above the blue is somewhat more extensive, the border of the hindwing equally broad black. Beneath the proximal part of the forewing as far as the border is broad blackish-brown, the costal base whitish, somewhat clouded in brown, the hindwings more yellow, the post-discal and submarginal brown transverse lines are united analwards and terminate into the anal angle. Mexico, Costa Rica.

Th. ellida *Hew.* (150 e) resembles the preceding above, is darker lilac-blue with a broad black apex of the forewing, rusty-yellow to brown fringes and without a scent-spot; HEWITSON describes such a scent-spot, but I am unable to find it. The hindwing exhibits in front of the border, in an anal direction, 3 small black spots. Beneath the ♀ is like the preceding, the ♂, however, much more variegated by the deep red-brown of the bands and of the triangular basal spot of the hindwing. Venezuela to South Brazil.

Th. malina *Hew.* (150 e) resembles *dolylas* above, but it has quite a different scent-spot: the larger part in the cell is dark-brown, the smaller part placed obliquely above and distally from it is more greyish-brown, the whole spot is surrounded distally by greenish-grey. Beneath brownish, towards the distal margin reddish ochreous-yellow with several brown, narrow bands being convergent towards the anal end on the hindwings. Brazil, Sao Paulo.

Th. palegon *Cr.* (= *myrtillus* *Cr.*, *juicha* *Reak.*) (150 d, c) is allied to the preceding species, above silky-glossy greyish-violet with much narrower margins and only a small, but likewise double scent-spot, the ♀ dull greyish-brown. Beneath the distal margin is brighter rusty-yellow, the proximal surface dusted with violetish-grey, the bands more dentate. From Mexico to South Brazil, common.

Th. cyrriana *Hew.* (153 h) greatly resembles the preceding according to the figure and description; above the black distal margin and apex are entirely absent, the small scent-spot is red-brown, the tail much smaller. Beneath the wings are marked as in *palegon*, but quite brown, the hindwings darker clouded, without the rusty-yellow border. Described from Peru.

Th. nannidion *Burm.* is said to resemble above *Th. lausus* (154 e) in size and colour; forewings brown, hindwings light-blue like there, the under surface is said to approximate that of *palegon*, but to be lighter grey with fainter, posteriorly shortened, brown bands without the rusty-yellow marginal part. Immediately recognizable by the very long, 3rd palpal joint. Argentina (Corrientes).

jada. **Th. jada** Hew. (150 f) we include here as the nearest ally of *malina*. Above lilac-blue with a very broad apex of the forewing, a red-brown anal lobe and small tail, fringes white; at the cell-end a slightly visible black streak-spot, the scent-spot being absent; the ♀ is coloured just the same except a somewhat rounder shape of the wings. Beneath yellowish-white with olive-brownish lines, similarly marked as *malina*. Common in Mexico and Guatemala.

calesia. **Th. calesia** Hew. (150 f) resembles somewhat *ellida* (150 e), but it might more correctly be placed beside *commodus* (153 g) in the *arria*-group. Above greenish-blue with a broad black apex and margins with 2 rather long tails beside the extended anal lobe; without a scent-spot. Beneath red-brown with deep dark-brown markings which are partly finely bordered by bluish-white; in the middle of the costal margin and of the border there is one larger, light, yellowish-brown patch each. Venezuela, Ecuador, Colombia.

35. Dinus-Group.

dinus. **Th. dinus** Hew. (150 f) is known to me only from the description and figure, for which reason its position here is dubious. Shape about that of *elongata* (150 f) or *commodus* (153 g), above similar, without a scent-spot. Beneath red-brown, on the forewing with a large brown triangular spot in the middle of the costal margin, and brown spots in front of the border; hindwing clouded in a darker brown, margin more rusty-yellow, a brown spot near the costal base and two macular bands behind the middle. Surroundings of the black anal lobe dusted in white. Described according to a ♀ from Brazil.

36. Amyntor-Group.

a) tailed species.

amyntor. **Th. amyntor** Cr. (= *menalcas* Cr.) (153 i). Above deep metallic indigo-blue, towards the margin gradually warming into the moderately broad, blackish-brown margin; anal lobes red-brown. Beneath brilliantly green, the proximal margin of the forewing grey; hindwing with a rudimentary row of lunular spots behind the middle, dark cherry-red, to black, distally white-pupilled, mostly there is at the costal margin only one, and analwards 3 or 4 eye-spots; between, below and above the median veins, in front of the border, are yet 3 small cherry-red spots, the one in the middle being the largest. Forehead metallic-green. Abdomen above indigo-blue, beneath yellowish. The ♀ is in the basal half dull greyish-blue, distally blackish-brown. Mexico to Brazil, rather rare.

sicrana. **Th. sicrana** Jones (153 i). I am unable to decide whether this animal is of a different species from the preceding. The description coincides with it except the forehead being described as brown, with metallic-green scales and a white spot between the antennae. The figure exhibits the hindwings beneath marked with larger white spots nearer to the border. Castro (Paraná).

chloris. **Th. chloris** Hew. (153 i) is described according to but 1 ♀; nor do I know it; it looks above alike, but, according to the figure, it seems to have 2 longer tails and a long-stretched anal lobe; beneath the postdiscal macular series of the hindwing is entirely black, distally not bordered by white. Brazil.

herodotus. **Th. herodotus** F. (= *leucania* Hew.) (153 i) is smaller, above duller indigo-blue with quite a narrow, black margin and few scent-scales in the upper cell-corner at the rising of the uppermost radial. Beneath green, equally, but much more finely marked than *amyntor*, the white macular line is mostly more complete, forehead metallic green. From Mexico to the Amazon at altitudes of up to 3000 ft., everywhere common. — In Argentina flies: **Th. acastoides** Berg (= *acaste* Burm. nec *Prittw.*) differing by its larger size, the undulated brown marginal band of the hindwing beneath and a brown-tinged, white macular band.

fusius. **Th. fusius** Godm. & Salv. (153 i) differs merely by the brown colour of the upper surface. Mexico to Panama.

bertha. **Th. bertha** Jones (153 i). Distal margin of the hindwing more straight, not so inflated, anal lobe not developed. Above dull indigo-blue, beneath not to be mistaken for any other species by the peculiar, white-dusted median band. Paraná, Rio Grande do Sul.

pastor. **Th. pastor** Btlr. (154 a) is easily distinguishable by the uncommonly lustrous deep blue colour above, beneath by the brown lunular spots on the margin of the hindwing. The ♀♀ entirely resemble above those of the other species. Mexico to Panama.

b) untailed species.

longula. **Th. longula** Hew. (154 a) has above the same magnificent *Morpho*-blue as *pastor*, but a somewhat broader black margin and a longer extended anal angle. Beneath the green is tinged somewhat ochreous-yellowish; the macular band as in *herodotus* (153 i), only much less visible and inwardly darker shaded; between it and the border there runs a second nebulous band; at the base of the hindwing is often a brown spot of a variable size. Forehead brown, abdomen beneath yellow. The ♀ is above dull greyish-blue, with broad blackish-brown margins. From Colombia, Ecuador and Bolivia.

agricolor. **Th. agricolor** Btlr. (154 a). Shape of the wings similar to that of *bertha*; above coloured like *herodotus*, beneath differing from all the others by the hindwings being broadly marked in red-brown at the base and at the margin and being dusted in white; besides they exhibit in the centre yet a strongly undulated band. Mexico to Panama.

Th. acaste *Prittw.* (= *lycimna* *Hew.*) (154 a) entirely resembles *herodotus* (153 i) except the absence *acaste* of the tail, but on the hindwing beneath, it exhibits a complete and scarcely interrupted, fine, white transverse line, being proximally mostly tinged with cherry-red; there is often also a white discal streak. Brazil (Sao Paulo, Rio Grande do Sul, Sta. Catharina).

Th. remus *Hew.* (154 b) is above more greenish-blue; beneath the transverse band of the hindwing *remus* consists of small red-brown spots, of which only the lowest is white-pupilled; close before the border there is yet a row of small black, white-dusted spots. The ♀ is above greyish-blue, beneath more richly marked in red-brown, as far as to the costal-marginal angle of the hindwing; also on the forewing there are behind the middle of the costal margin small red-brown spots. Brazil.

37. *Dumetorum*-Group (*Callophrys* *Billb.*).

Th. dumetorum *Bsd.* (= *viridis* *Edw.*) (154 b) replaces our *Th. (Callophrys) rubi* in North America. *dumetorum*. Above blackish-brown, in the ♂ with a smooth oval spot at the cell-end, fringes whitish, at the anal angle brown. Beneath deep green except the proximal margin of the forewings being brownish-grey; the proximal margin of the forewing red-yellow; both wings are traversed by a curved band of oblong, white small spots. — The egg is deposited on the flower-buds of *Hosackia argophylla*, but the larva is not yet known. California, Rocky Mountains.

Th. affinis *Edw.* does not differ above, but beneath it is quite unmarked green. Utah. *affinis*.

Th. apama *Edw.* from Arizona is above like *dumetorum* (154 b), beneath marked almost like *castalis*; *apama*. untailed. Above blackish-brown with an oval, black stigma; beneath the forewings are yellowish-brown, in the apical area and at the costal margin golden-greenish; in the disc a transverse row of small spots consisting of black, distally white-tinged, proximally red-brownish-tinged, small streaks. On the hindwings there is a discal, somewhat irregular row of similar spots of which those in the costal half are moon-shaped; expanse of wings: 27 mm.

Th. sheridanii *Edw.* is the last species belonging to the „*Callophrys*“-group. It has hitherto been *sheridanii*. exclusively found in the Rocky Mountains.

38. *Janias*-Group.

Th. janias *Cr.* (= *romulus* *F.*, *cecina* *Hew.*) (154 b) is above magnificently deep ultramarine-blue *janias*. with black veins, a broad black apex and a narrower black distal margin. In the upper cell-corner in the apical black a dark brownish-grey scent-spot. Beneath magnificently emerald-green including the thorax, legs, forehead, palpi, borders of the eyes and shoulders. On the hindwing there is a postdiscal transverse line mostly present only analwards and forming here a W, a spot between the median veins, the tail and the white-bordered fringes velvety-black. In the ♀ being above greyish-blue to brown, on the hindwing beneath, the black transverse line is complete as far as the costal margin, also a large black anal spot. — In the form *hassan* *Stoll* (154 b) the *hassan*. black spots above are bordered by a broad orange-red. Most widely distributed from Mexico through the whole of Central America as far as Guiana, Colombia, Bolivia, the Amazon, and South East Brazil.

Th. esmeralda *Jones* (154 b) is closely allied to the preceding, but it has above much broader black *esmeralda*. margins; beneath the hindwing exhibits a fine, black, undulate postdiscal line, being the most distinct at the proximal margin. The spot between the median veins is quite orange. The ♀ is above brown with a faint lilac-grey lustre; beneath the black undulate line is more distinct, the orange spot larger, a second one is at the anal angle. Castro (Paraná).

39. *Thabena*-Group (= *Jaspis* *Kaye*).

Th. thabena *Hew.* (154 b). Above brilliant blue with a large black scent-spot in the cell of the fore- *thabena*. wing, a narrow black margin and a somewhat broader apex; beneath light-grey with 2 fine transverse lines, the proximal one inside bordered by orange, outside by white and beginning at the margin of the hindwing with a distally arranged, large black spot, strongly dentate; anal angle extensively yellow. The ♀ is above dark brown, at the anal angle of the hindwing and at the proximal margin white-spotted. Surinam to the Amazon.

Th. temesa *Hew.* (154 c) is beneath almost like *thabena*, but above very dark ultramarine-blue *temesa*. with a brown oval discal spot. Guiana to the Amazon.

Th. talayra *Hew.* (154 c) is above brilliant-blue, bordered like *thabena*, but with a small scent-scale- *talayra*. spot of the same colour at the upper cell-end. The under surface is lighter, almost white, the line-markings the same, but at the anal angle two orange-red spots. Common from Mexico to Brazil. — From Pará and Espiritu Santo the f. *castitas* *Drc.* (154 c) is described with a much duller, more greenish blue and a somewhat broader *castitas*. black margin; the under surface is darker, at the anal angle more red.

- beera*. **Th. beera** Hew. (154 c). More violettish-blue than the preceding with a broader black margin and a larger scent-spot; beneath darker grey, the line-markings the same except the costal-marginal spot of the hindwing being more streak-shaped; anal-angular spots smaller. Ecuador, Brazil.
- exiguus*. **Th. exiguus** Drc. (154 c) is marked like the preceding, but above more indigo-blue with a greenish tinge and without any scent-spot; beneath like the preceding. Surinam.
- castimonia*. **Th. castimonia** Drc. (154 c) is above as blue as *beera*, but without the scent-spot and with but quite a narrow black distal margin without getting broader at the apex and with a distinct red anal spot also above; the under surface is lighter with but little red at the anal angle of the hindwing. Colombia.
- pura*. **Th. pura** sp. nov. (154 c) is very well to be included here. Above unicolorously blackish-brown, the hindwing at the anal angle with a small yellowish spot and a short white marginal line before the otherwise black one. Beneath silvery-white with an extremely fine brownish postdiscal showing the same course as in *beera*, but being placed somewhat more into the centre of the wing; also the small spot being placed distally at the costal margin of the hindwing is very small and fine. There are no submarginals at all, only at the anal angle stands a tiny yellow spot being above bordered by black, next to it the traces of a blackish crescent. Described according to 1 ♂ from Sao Paulo.

40. Meton-Group (*Rekoa* Kaye).

- meton*. **Th. meton** Cr. (= *metus* Hbn., ♀ *augustus* F.) (150 d) on the one hand resembles *palegon*, on the other hand it forms the transition to the following group. The ♂ is above of a delicate light-lilac with a white scent-spot, the ♀ almost white. The under surface is light-yellow to rusty-yellow with similar lines as in *malina* but an eye-spot in the middle of the costal margin of the hindwing. From Mexico to Colombia and Brazil, everywhere very common.
- phrynisca*. **Th. phrynisca** Burm., perhaps a form of the preceding, is somewhat smaller, the forewings above much more extensively black, beneath at the costal margin of the hindwing there is no eye-spot. Described according to 2 ♀♀ from Argentina (Corrientes).

41. Mazurka-Group.

- atesa*. **Th. atesa** Hew. (154 d) is above only in the proximal half of the wings brilliant blue, a round brown scent-spot stands already in the apical black. Beneath light-brown, very peculiarly marked in red-brown with a large black eye-spot in the middle of the costal margin of the hindwing and a bronze-green dusting at the anal angle. Panama to the Amazon.
- mazurka*. **Th. mazurka** Hew. (154 d) is perhaps not allied at all to the preceding, it is only placed here on account of the analogy of the marking beneath. Above the blue is still more reduced in the ♂, a scent-spot is absent. Beneath the eye-like spot at the costal margin of the hindwing is much more developed and exhibits 2 blue pupils. The ♀ is above quite brown. Amazon.

42. Narbal-Group.

- narbal*. **Th. narbal** Stoll is unknown to me in nature. According to the figure and description it must be very closely allied to the following; it seems to be a little larger and has beneath at the base of the costal margin of the forewing and hindwing extensive red spots. Surinam.
- amplus*. **Th. amplus** Drc. (150 k) is above brilliant-blue with a moderately broad black distal margin and a small, blackish-grey scent-spot in the upper cell-corner. Beneath the forewings are brown, unmarked, except the narrow red base of the costal margin; the hindwing exhibits in the middle of the costal margin a black, distally white eye-spot, in front of the border a fine black, distally white undulate line, a black anal-angular spot and next to it a spot strewn with bluish-white. Venezuela, Amazon.
- ophelia*. **Th. ophelia** Hew. (150 k) is very similar, has above broader black margins and a larger scent-spot; beneath the costal-marginal eye-spot is absent, the base of the hindwing is more extensively red, a marginal spot between the median veins is black. Bolivia, Amazon.
- hypsea*. **Th. hypsea** Godm. & Salv. (150 k) differs by a decidedly greener blue above, the distal margin, particularly of the apex, is much narrower black; the scent-spot exhibits at its lower margin a narrow light-brown part. The under surface is as in *ophelia*, but the black marginal spot between the median veins is absent and replaced by only white dusting. Panama. — **stictos** Drc. (151 a) from Colombia I can only take to be a form of *hypsea* with a green upper surface, I do not find any other differences.
- athymbra*. **Th. athymbra** Hew. (150 i) is beneath exactly like *hypsea*, the bases of the wings more chestnut-brown, above the blue is reduced by the very broad black apex, the scent-spot is very large, double, proximally red-brown, distally greyish-brown. Amazon (Itaituba).
- Th. gemma** Drc. (151 a ♂; the figure (150 k) denoted as *gemma*-♀ is wrong, it represents the upper surface of the allied *rocena*) resembles the following species from which it is discernible by the upper surface

exhibiting a deeper purple-blue and an oval, somewhat smaller scent spot. Beneath the ground-colour is of a somewhat deeper tinge, the two small white spots on the forewing bordering on the basal red are absent, and the hindwings exhibit a second red spot at the inner-marginal base. Peru.

Th. minyia Hew. (150 h) is above lustrous blue, of a somewhat greenish tinge, the apical half blackish-brown, in it lies the small round greyish-brown scent-spot. The under surface is ochreous-brown, the bases of the wings red, on the forewings bordered by two, on the hindwings by one white spot, the former two distally, the latter proximally bordered by black; the forewings exhibit yet a white oblique band at the cell-end, the hindwing at the proximal margin the beginnings of a white undulate line, between it and the black anal angle there is some greenish or bluish-white dusting. French Guiana to the Amazon. *minyia.*

Th. porthura Drc. (150 h) is above deeper ultramarine blue, the scent-spot is placed in the dark purple-blue. The under surface is more ochreous-yellow on the hindwings, the forewings are without the two small white basal spots, but on the hindwing a black, bluish-white-ringed eye-spot borders on the basal red, the black, distally white postdiscal extends as far as to the centre of the wing, and mostly there is even yet a small white spot at the costal margin, the anal angle is more extensively green. Panama to Colombia. *porthura.*

Th. rocena Hew. (150 k a *gemma*-♀) has no scent-spot, but such a broad black costal margin that the deep violettish-blue remains confined to the basal inner-marginal half of the forewing. Beneath similarly marked as the preceding, but the ground more greyish-brown. Below the cell of the forewing is a large black spot; behind the cell, between the lower radial and lower median veins, there is a white arcuate line; the anal angle of the hindwing extensively strewn with metallic green, between the median veins a jet-black spot bordered above by orange. Colombia to the Amazon. *rocena.*

Th. fessa Mschlr. described only according to 1 ♀, seems to me to belong here. Above dark-brown, towards the base with a bluish-grey tinge. Under surface yellowish-brown, marked almost like *atena* (150 h), but the forewings without any marking, the hindwing with the costal-marginal eye-spot of *amplus* (150 k) and its allies, but without any basal red; farther outside there is another smaller white dot bordered distally by black; postdiscally, towards the proximal margin, a white, towards the base black undulate line, towards the margin whitish-blue dusting, at the anal angle a black spot being yellow towards the base. Surinam. Forewings 15 mm long. *fessa.*

Th. atena Hew. (150 h) is above brilliant-blue, towards the margin suffused in purple with a round, brownish-grey scent-spot in the upper cell-corner, and a broad black apex. Beneath like the preceding, but on the forewing a white oblique band at the cell-end, proximally bordered by black, forming on the lower median vein an acute angle projecting outside. The markings of the hindwings are bluish white, analwards very much metallic green dusting. Guatemala to the Amazon. *atena.*

Th. geba Hew. (150 h) resembles the preceding above, perhaps of a slightly greener tinge, beneath darker brown, the discal band of the hindwing more developed and especially behind the middle of the cell moved farther towards the base, all the markings a little more intense, the bluish-white still deeper blue. Before me from Bolivia and Colombia. *geba.*

Th. melleus Drc. (150 i) entirely resembles *atena* beneath, but above the blue is much less lustrous and strongly reduced by the apex and also the distal margin of the hindwing being much broader black. The scent-spot is the same. Colombia. *melleus.*

Th. florens Drc. (150 i) is likewise very closely allied to the preceding, on the forewings lustrous and extensively blue as *atena*, on the hindwings lighter blue. Beneath the ground-colour is darker, more leaden-coloured, towards the margin with a coppery lustre; the white line of the hindwing runs more uniformly and is less broken. Amazon (Tapajos). *florens.*

Th. ravus Drc. (150 i) is compared with *minyia* (150 h) by the author, above with a smaller, rounder scent-spot and a lighter, reduced blue. The under surface is brighter red-brown, the white spots bordering the basal-red are absent, so is the red colour on the hindwings, but the costal-marginal eye-spot is present instead. Amazon. *ravus.*

Th. color Drc. (150 i) resembles somewhat *athymbra* above, it is of a more brilliant blue than the latter, without any scent-scales, but with a dark spot in the distal half of the cell. Beneath lighter, almost without any basal red, only faintly tinged lilac-reddish, on the forewings with a postdiscal row of moon-spots, the markings only feebly expressed. Guiana. *color.*

Th. sista Hew. (151 a) initiates a special subordinate group of species resembling each other very much, with a much more slender structure and more delicate wings, partly almost diaphanous. Above brilliant blue with broad black margins and a quite uncommonly large scent-spot of a brown colour, being extended from the distal half of the cell almost to the proximal half of the radial and median veins. Beneath all these species are indiscriminately almost of the same colour and marking, grey with bluish-white transverse lines, on the hindwings broken, forming a W towards the anal part, anal margin lustrous metallic grass-green, in it two black spots bordered above by yellow, at the base of the costal margin of the hindwing an isolated white spot. Guiana, Colombia, Brazil. *sista.*

- aurora*. **Th. aurora** Drc. (151 a) is above much brighter and more extensively blue with a somewhat smaller, black scent-spot immersed in the blue; beneath lighter, more brownish, the markings finer. Brazil (Espiritu Santo, Sta. Catharina, Rio Grande do Sul).
- malvina*. **Th. malvina** Hew. (151 a) is a little larger, above duller violettish-blue with a somewhat broader, black apex than *aurora* and a large, red-brown scent-spot, beneath somewhat browner, the proximal line of the forewing very oblique and consisting of single, small spots. Brazil.
- janthina*. **Th. janthina** Hew. (151 b), with longer, almost diaphanous wings and a violet upper surface with a slight yellowish reflection, has only a small, narrow scent-spot at the lower cell-end on the median; beneath no difference. Guatemala to Brazil.
- armilla*. **Th. armilla** Drc. is coloured above like *janthina* (151 b), but the shape of the wings is that of *sista* (151 a), and the scent-spot at the lower cell-end is more prominent than in *janthina*; the under surface is darker. Rio de Janeiro.
- flosculus*. **Th. flosculus** Drc. (151 b, c) resembles *armilla* above, but the blue is more extensive, with a purple lustre and not so brilliant; the under surface is greyer, the markings more distinct, broader white. Espiritu Santo.
- cydonia*. **Th. cydonia** Drc. (151 b) has the shape of *janthina*, but quite black forewings and a somewhat broader black margin of the cornflower-coloured hindwings. Beneath there is no difference. Colombia.
- mutina*. **Th. mutina** Hew. (151 b) is beneath almost like *sista* of which it has the shape of the wings, but the anal angle of the hindwing has no green, but bluish-white dusting. The upper surface is entirely different, dark blackish-brown, on the proximal margin of the forewing, and in the larger inner-marginal half of the hindwing, it has a deep indigo-blue tinge, without a scent-spot. Guiana to the Amazon.
- mecrida*. **Th. mecrida** Hew. (151 b) has above a somewhat more extensive, more greenish blue, on the under surface there is instead of the small basal, costal-marginal spot of the hindwing a white stripe being distally bordered by blackish-brown and extending as far as the lower cell-angle. — In some cases this stripe is confluent in the middle with the postdiscal dentate-line; this is **anastomosis form. nov.** (151 b). Guiana to the Amazon.
- conoveria*. **Th. conoveria** Schs. is a little larger, above more extensively metallic-blue with a dark spot at the cell-end, but without any scent-scales. Beneath there is hardly any difference, but on the hindwings the postdiscal (median) white line runs straight from the costal margin to the lower median vein on which it is broken; then running in the shape of a W to the proximal margin. Expanse of wings: 24 mm. Petropolis.
- myrtusa*. **Th. myrtusa** Hew. (151 d) resembles the following, but on the hindwing the distal band beneath is absent, on the forewing the white costal -marginal spot is removed more towards the base, and between the red spot of the tail and the anal angle there is extensive, bluish-white dusting. Amazon.
- myrtea*. **Th. myrtea** Hew. (151 b) is very similar, the ♂ above dull violettish-blue with a broad black apex, without a scent-spot, the ♀ dull bluish-grey, distally broad blackish-brown. Beneath brownish-grey, on either wing with two white rows of lunular spots, the proximal one being proximally bordered by black, the distal row distally, the hindwings in the ♂ with a very convex costal margin which covers a red-brown scent-scale-spot on the under surface of the forewing below the median. Marginal line subtile black, proximally white; between the tails an orange-red, black-pupilled spot, a smaller one at the anal angle, between them some white dusting. Colombia, Bolivia, Amazon.
- malvania*. **Th. malvania** Hew. (151 c) is larger, more lustrous metallic blue, but only in the basal third of the forewing; the costal margin of the hindwing broadly brown, the distal margin narrowly black. Beneath it resembles the preceding, but the white costal-marginal spot of the hindwing is removed more towards the margin as the beginning of the white postdiscal, the costal margin is less convex, and the forewing is without the distal macular line. The 3 last species might also be placed in the corresponding subordinate group of the *sichaeus*-group. Amazon.
- bianca*. **Th. bianca** Mschlr., described according to a ♀ being closely allied to the preceding, has remained unknown. Above dark-brown, towards the base greyish blue, on the hindwings more extensive. Beneath greenish-grey, the postdiscal on the forewing consisting of separate, white, towards the base black, small spots, on the hindwing continued as a strongly broken stripe; submarginal, white, towards the margin black, small spots; spot of the tail oval, red, bordered by yellow; anal spot black, between both bluish-white dusting. From Surinam.

43. Polibetes-Group.

- polibetes*. **Th. polibetes** Cr. (= zoe Reak.) (152 c). This and the following species all exhibit a black or black and white costal-marginal spot near the base of the hindwing beneath. Above deep blue with a moderately broad, sharply delimited costal margin and distal margin and fine black veins and a large black median spot;

in the upper cell-corner is a round, brownish-grey scent-spot varying greatly in its colour, close below it a smaller, crescentiform, blackish-grey one and between both a reddish-brown, fine row of scales. The ♀ is more greenish-blue, with a much broader, blackish-brown border. The under surface is extremely variable, lighter or darker brown with a violet lustre, on the forewing an arcuate or straight line or row of spots, in front of the border blackish spots; on the hindwing, beside the basal dot, a curved row of spots, with a distal silvery-blue tinge, behind it a row of spots and between the tails a red, black-pupilled spot. — In *sedecia* Hew. (152 i) the line *sedecia* of the forewing is straight, distally, like all the spots anyhow, with a broader bluish-white tinge. Common from Mexico to Brazil.

Th. thyrea Hew. (152 f) is somewhat larger, the blue greatly reduced by very broad black margins, *thyrea*. without the large black median spot, the single brown scent-spot surrounded by black. Beneath almost like *polibetes* (152 c), but of a more intense violet, the proximal margin of the forewing extensively yellowish-grey, on the forewings the macular band in front of the border is absent. Abdomen beneath yellow. The ♀ is above dull greyish-brown with broad blackish-brown margins, the under surface more grey with an orange tinge. Panama to the Amazon.

Th. arindela Hew. (152 b) has above more extensive greenish-blue, so that the scent-spot is situate *arindela*. in the ground-colour. Beneath the white macular lines are more developed, on the forewing there are beside the postdiscal yet two nearer to the proximal margin. Abdomen above greenish-blue, beneath orange. Nicaragua.

Th. epytus Godm. & Salv. (152 c) resembles above more *thyrea* (152 f) by the scent-spot being situate *epytus*. in the black, beneath the forewings are without markings, the hindwings as in *orgia* (152 e) with a dark discal streak of the hindwing. Panama.

Th. stigmatos Drc. (152 b) resembles *arindela* above, but it has a more obtuse and broader black *stigmatos*. apex of the forewing; the under surface is almost like in *orgia*, but the forewings are without any markings at all. It originates from the interior of Colombia.

Th. orgia Hew. (152 e) looks above like a small *polibetes* without a black median spot, the scent-*orgia*. spot is remarkably light. The ground-colour of the under surface is more yellowish-brownish, otherwise equally marked. Common from Mexico to the Amazon.

Th. m-album Bsd. (= *psyche* Bsd.) (152 d) for which SCUDDER has established the genus *Eupsyche*, *m-album*. is more slender, otherwise above like *orgia* (152 e), but with a distinct red anal spot of the hindwing and somewhat lighter blue. Beneath also marked the same, but the postdiscals form coherent white, proximally brown-bordered lines with a distinct W at the proximal margin. The red anal-angular spot is large and sends a connecting stripe towards the red tail-spot, between both there is bluish-white dusting on a blackish-brown ground. The range of the species extends from the Southern States (New Jersey, Wisconsin) to Venezuela. — The larva lives on *Quercus* and *Astragalus*.

Th. ostia Hew. (152 d) likewise resembles above *orgia* (152 e), but it is somewhat more greenish-blue *ostia*. and has an extensive black apex of the forewing. On the under surface the white macular bands are moved much nearer to the border, and on the hindwings they run more uniformly bent, parallel to the margin; the red spots are well developed. Brazil.

Th. vibidia Hew. (= *socigena* Hew.) (152 c) greatly resembles the preceding, above darker purple-*vibidia*. blue, the scent-spot more oblong, red-brown. The under surface, particularly of the hindwings, is darker brown, and here the proximal white macular band begins at the costal margin with a distally removed spot; the red spot between the tails appears to be placed more inside. Mexico to the Amazon.

Th. hecate Godm. & Salv. (154 d) from Mexico and Nicaragua is very closely allied, deeper blue, *hecate*. with a more distinct stigma. The forewings bear a discal line beneath.

Th. hewitsoni Ky. (= *ira* Hew.) (152 d as *ira*) greatly resembles *ostia* above, but the distal margin *hewitsoni*. of the hindwings is only quite narrowly black, the scent-spot is smaller. Beneath the markings are more obsolete, the white lines finer, the forewings without any markings at all. Mexico.

Th. punctum H.-Schäff. (152 d) is smaller, more compact, with rounder hindwings, coloured like *punctum*. *m-album*, but without any red at the anal angle. Beneath coloured like *m-album*, the white macular band in front of the border of the forewing quite obsolete, on the hindwing removed very far towards the margin, the red spots intense, mostly connected. In the ♂ the white dot in the middle of the costal margin of the hindwing is very minute or it is absent altogether, in the ♀ being above dull greyish-blue it is more distinct. Guiana to the Amazon.

Th. nitor Drc. (152 h) is perhaps only an aberration of *punctum* with beneath unmarked forewings *nitor*. and almost absent submarginal spots on the hindwings, on which the proximal macular band is more distinct and more coherent. Amazon.

- fancia.* **Th. fancía Jones** (152 b) closely allied to the preceding is above brilliantly metallic-blue with a greenish lustre in the basal half. The under surface is more yellowish-grey, the submarginal macular band of the forewing is more distinct, distally broad white, reaching down as far as the lower median vein, on the hindwing the proximal macular band is placed not so near to the margin, the spot of the tail is smaller, orange. Castro (Paraná).
- echella.* **Th. echella Hew.** (152 f) is another stage of development of *polibetes* (152 c) in which there appears a broad black discal band on the fore- and hindwings; in the upper cell-corner is the small round red-brown scent-spot. The under surface is lighter reddish-brownish, the marking almost as in *vibidia* (152 c). Amazon.
- phoenissa.* **Th. phoenissa Hew.** (152 e) we include here; above like *thyrea* (152 f), somewhat duller indigo-blue with a greenish shine, the veins of the forewings broader black, the scent-spot somewhat larger. The ♀ is duller greyish-blue with a dull metallic lustre. The under surface makes the species very easily recognizable by the abundant white marking. From Nicaragua, Panama, Colombia to the Amazon.
- selica.* **Th. selica Hew.** (152 c) somewhat resembles *m-album* (152 d) beneath, but between the postdiscal lines and submarginal macular bands it has on each of the wings a straight broad band of bluish-white dusting inserted; on the hindwing the costal-marginal spot has turned a streak, and often, particularly in the ♀, there are in the basal area some more bluish-white streak-markings. Above lighter greenish-blue, with a small round brown scent-spot; the ♀ is very similar, duller, with broader margins. Colombia, Bolivia, Brazil.

44. Rustan-Group.

- rustan.* **Th. rustan Stoll** (= *macaria Sws.*) (152 a) has very close relations to the preceding group. The ♂ is above dark-brown, only in the basal inner-marginal half of the forewing it has a dull blue tinge, with red-brown fringes, on the hindwing analwards a black marginal line and white hair at the anal lobe. The scent-spot is extremely complicated: at the cell-end a dark-brown round spot, in which there is distally a light fawn-coloured sector; behind the cell a four-cornered black spot, the proximal one is yet surrounded by slate-grey. The ♀ is duller, more extensively greyish-blue. Beneath with very characteristic markings. From British Honduras, Panama to Brazil.
- polama.* **Th. polama Schs.** presumably belongs here. Above dark violettish-blue with a narrow black distal margin with a long scent-spot being parted by a violet line, the proximal half lighter, the distal half darker brown; fringes red-brown. Beneath of a silky-lustrous brown, very similarly marked to *rustan* (152 a), but the spots a little finer, not so thick and more bordered by white; abdomen with a golden yellow, black-margined ventral line. The ♂ exhibits above and beneath darker and duller colours. Petropolis in South Brazil. Expanse of wings: ♂ 35, ♀ 36 mm.
- ortygus.* **Th. ortygus Cr.** (152 a) is above lustrous lilac-blue with moderately broad black margins and only a small brown scent-spot at the upper cell-end; proximal margin and anal lobe almost white, the latter with a black spot. The under surface is very pale lilac-grey with thick black spots arranged in the same way as in *rustan*, but the forewings are without the antemarginal band; the anal angle of the hindwing is extensively greenish and strewn with bluish-white. The ♀ is above coloured the same, but it has broader brown margins. Everywhere common from Mexico to Brazil, also in Trinidad. — In the stony deserts of West Mexico (Guerrero)
- lauta.* there flies a smaller, remarkable form which I denominate: ***lauta form. nov.*** (152 a); it is above lighter lilac, with a milky tinge, beneath with much smaller and dull brown markings that are tending to form more coherent lines.

45. Jebus-Group.

- jebus.* **Th. jebus Godt.** (152 b) is quite an isolated species, above dull steel-blue, with narrow black margins, and particularly in northern specimens with a red-brown anal spot of the hindwing and a small brown scent-spot in and above the upper cell-end. The ♀ is milky greyish-blue, with broad greyish-brown margins. The peculiarly brown marbled under surface of the hindwings makes it impossible to mix it up with other species. From Mexico to South Brazil and Peru, everywhere common.

46. Brescia-Group.

- brescia.* **Th. brescia Hew.** (= *thoana Hew.*) (152 f) is so closely allied to *punctum* (152 d) and its nearest allies that it must be made optional to the individual observer whether he prefers to range *punctum* into this family or not. Above lustrous blue with moderately broad black margins and a small, round, light-brown scent-spot at the upper cell-end, anal lobe orange. The ♀ is above greyish-brown, distally broad darker brown. The under surface is greyish-brown with a lilac reflection, marked almost the same as *punctum*, on the forewings with a distinct postdiscal band. Mexico to Nicaragua.
- orses.* **Th. orses Godm. & Salv.** (152 g). Like the preceding, with a broader black apex of the forewing and beneath at the anal angle with ochreous-yellow spots, not red ones. From Guatemala.

Th. ligurina Hew. (152 e) is deep steel-blue with a purple tinge, with a small brown scent-spot *ligurina*. at the cell-end, the ♀ greyish-blue with dark-brown, broader margins. Beneath ashy-grey, forewings without any markings, hindwings marked as in the preceding species, but the proximal band at the costal margin is placed more towards the base. Mexico to Panama.

Th. chlamys Drc. (152 g). Above like the preceding, but with a red-spotted anal lobe; beneath more *chlamys*. reddish, the red spots of the hindwing less developed, and the proximal white line less sinuous. The ♂ is above brown, in the disc greyish-blue. Paraguay.

Th. lyde Godm. & Salv. (152 f) is above metallic indigo-blue, the broad black apex and the narrow *lyde*. distal margin gradually pass over to the blue colour. The scent-spot at the cell-end is rather large, brown, bordered by an elevated, metallic greenish-grey ring; the anal lobe of the hindwing without any red. The ♂ is only little duller blue. Beneath ashy-grey, marked like the preceding species. Mexico to Panama.

Th. ergina Hew. (= *ela* Hew.) (152 e) is somewhat larger, otherwise above like *lyde*, also beneath *ergina*. alike, only more faintly marked, but of a light brownish ground-colour; the red spots of the hindwings larger, their black pupil smaller. Surinam, also from Jamaica.

Th. voltinia Hew. (152 k) is still larger, above deep indigo-blue with a greenish lustre and a large, *vollinia*. roundish, brown scent-spot with a greenish slate-colour floating round it, on the anal lobe a reddish spot; beneath darker brown than *ergina*; the two submarginal macular bands are closer together. Brazil. Bolivia.

Th. buccina Drc. (152 h) differs above from the preceding by a deep steel-blue colour, similarly as *buccina*. in *ligurina*, and an entirely circular scent-spot; the ground-colour beneath is a warm red-brown, the two white lines of the hindwing are still closer together. Brazil.

Th. zebina Hew. (152 f as *zelina*) is also in the ♂ above bluish-grey with a roundish dark scent-spot *zebina*. and dark spots before the distal margin of the hindwing; anal lobe with red spots. The ♀ is above lighter, between the tails also above with a red, black-pupilled spot. Beneath light brownish-grey, on the hindwings similarly marked as in the preceding species, but the white lines are more remote from each other, the orange-red spots are very large and between them there is bluish-grey dusting; the forewings likewise exhibit 2 white, ante-marginal macular lines. Mexico to Nicaragua.

Th. guadala Schs. is allied to *brescia* (152 f) and seems also to approximate *zebina*; I only know it *guadala*. from the description: above distinguishable by the metallic steel-blue colour, the black scent-spot at the cell-end being somewhat oval, the anal lobes likewise spotted in red. The ♀ is in the basal third bluish-grey, distally blackish-brown; hindwing at the distal margin spotted in black, anal lobe red. Beneath dark grey, marked like *brescia*. Mexico (Guadalajara). Expanse of wings: ♂ 30, ♀ 28 mm.

47. Cupentus-Group.

Th. cupentus Cr. (= *annulatus* Gmel.) (154 d) has the same scent-spot as *lyde* (152 f) and its allies, *cupentus*. but it is larger here and placed nearer to the base by the very short cell. The forewings are above brownish-black, proximally strewn with metallic blue. The under surface is brown with white transverse bands and on the hindwing a white discal streak forming a sling with the proximal band; between the tails an orange-brown, black-pupilled spot. Distributed from Nicaragua to Brazil, mostly common.

Th. comana Hew. (= *peralta* Mchlr.) (154 c). The ♂ is above greyish-blue with a slight lilac lustre *comana*. and a broad black apex; scent-spot double, obliquely overlapping each other as in *thyesa* (152 g), beneath dark-brown, distally reddish-brown. The ♀ is brown, towards the base with a slight greyish-blue tinge with a red, above white-pupilled spot at the anal angle and proximally fine white, black marginal line. Beneath quite similar to *cupentus* (154 d), yellowish-brownish, on the hindwings with a lilac shine. On the forewings the proximal band extends only as far as the lower median vein and grows narrower costally; on the hindwings the red spot between the median veins is removed more inwards; all the markings are more indistinct, more blurred. Brazil.

Th. cambes Godm. & Salv. (154 e) is rather similar, above the pale lilac-blue is very much reduced, *cambes*. on the forewings confined to the basal inner-marginal part; the fringes, particularly on the hindwings, are more rusty-brownish. The lower part of the scent-spot is oval, jet-black, the upper part very small, about crescentiform, brownish-grey, both parts embedded in a greyish-blue scaled ring. Beneath very much like *comana*, easily recognizable by the broad, lilac-white dusting of the costal angle of the hindwing; on the forewings the postdiscal white band is united with the proximal submarginal band on the lower median vein. Mexico, (Jalapa), Guatemala.

Th. molena Jones (154 e). The ♂ is above subdued dark metallic blue, the distal margin and apex *molena*. of the forewing broad black; in and behind the cell is a large oval, black scent-spot, parted by the blue transverse vein; anal lobes of the hindwings red. The under surface is brown with a lilac shine on the hindwings

and in the marginal area of the forewings; the markings like in the following species, but more faded and more indistinct. The ♀ is above brown, in the basal area suffused by violettish-blue, beneath less lilac. Castro (Paraná).

lemona. **Th. lemona** Hew. (154 e), described only in the ♀, is larger, above greyish-brown, distally dark-brown. Beneath greyish-brown, on the forewings a postdiscal, straight, white band and two antemarginal rows of white lunular spots, particularly distinct towards the apex. Hindwings with a white undulate median line, at the cell-end in front of it 2 white streak-spots as in *cupentus*. Marginal area marked like on the forewings; the anal spot and a spot being pushed in more proximally between the median veins black, bordered above by red. Brazil.

lausus. **Th. lausus** Cr. (= *libanius* Cr.) (154 e) undoubtedly has close relations to *cambes*, for which reason we include it here. Above it resembles the said species, of a purer and more extensive milky lilac-blue, the scent-spot almost as it is there, but the upper brownish-grey part nearly just as large as the lower one, being deep velvety-black. The ♀ is duller and almost whitish. Beneath purple-brown with broad, purely white markings, on the hindwings arranged almost as in *cambes* with a very prominent white trapezoid-spot at the costal angle; the spot of the anal lobe is quite black. Distributed from Nicaragua to the Amazon.

48. Mycon-Group.

mycon. **Th. mycon** Godm. & Salv. (152 g). Above extremely lustrous ultramarine-blue with a very large, cinnamon-brown scent-spot filling up half the cell, and a narrow black margin. Beneath light greyish-brown with a very fine, proximally brown, distally white discal stripe being broken on the hindwing and forming a W at the proximal margin; in front of the border there are indistinct, small lunular spots, between the median veins a large red spot being proximally more yellow, distally black-pupilled; between this spot and the anal lobe being distally black, then white and proximally reddish-yellow, there is bluish-white dusting on a brown ground. The ♀ is above brown, towards the proximal margin, particularly on the hindwings, spread over by a pale blue. From Mexico to Colombia. The southern form from Brazil (Rio Grande), **murex** Drc. (152 h), is somewhat darker and duller blue with a larger scent-spot and a broad black margin, beneath lighter with a less angled discal stripe.

49. Thyesta-Group.

thyesta. **Th. thyesta** Hew. (152 g) and its nearest allies exhibit some resemblance to the *brescia*-group in the marking beneath, but the linear markings are finer and more streak-like. The shape of the wings and the upper surface is quite different: above metallic indigo-blue with a broad black apex of the forewing and costal margin of the hindwing. The scent-spot is double: the part in the cell is black, obliquely outside above it is the distal brown part which is not at all reproduced in the badly executed figure. The under surface is greyer than in the figure, the W ought to be placed nearer to the proximal angle. Colombia, Amazon.

caninius. **Th. caninius** Drc. (154 e) differs from the preceding by almost entirely blackish-brown forewings, only the proximal margin is strewn with blue, also the hindwings are opalescent blue only in the inner-marginal half. The under surface is browner, the markings fainter, placed nearer to the border and without any white dusting before the anal angle. Venezuela, Bolivia.

pharus. **Th. pharus** Drc. (152 k) is larger than *thyesta*, also the scent-spots larger and more intensely prominent; the blue has a somewhat greenish tinge and is more extensive than in *caninius*. The under surface is darker, the lines straighter. Amazon (Pará), Bolivia (Songo).

radiatio. **Th. radiatio** Drc. (152 k) has the same scent-spots, but quite black forewings, and on the hindwings also only the disc is purple-blue. The under surface is dark-brown, the forewings almost without any markings. At the anal angle the red spot is absent. Amazon.

munditia. **Th. munditia** Drc. (152 i). In this species only the distal brown part of the scent-spot is present, the black spot in the cell-end is visible in an oblique exposure to light, but it does not contain any scent-scales; it is a very small species, the blue as extensive as in *caninius*, but more slate-blue. Under surface reddish-grey, in the ♀ lighter, with the markings of *thyesta* (152 g). The ♀ is above unicolorously brown. British Guiana.

jactator. **Th. jactator** Drc. (152 i) entirely resembles *thyesta* (152 g) beneath, but it differs greatly above: on the blackish-brown forewings with a radiantly blue proximal part there is at the cell-end a rather large, deep velvety-black scent-spot; hindwings likewise blue with a black distal margin of about 1 mm width. Paraguay.

50. Avoca-Group.

avoca. **Th. avoca** Hew. (154 f) is above lustrous blue with a green reflection, dark-brown margins and a small, round, red-brown scent-spot. Beneath red-brown with a violet purple tinge, with a postdiscal white macular band and small, whitish-dusted antemarginal spots of the forewings. Hindwing in the larger anal

half lilac-white with a submarginal brown macular band and an orange spot between the median veins. In the purple-brown basal half there is a white macular band before the centre and behind it a second one being broadly dusted in grey on both sides. Amazon.

Th. olbia Hew. (154 f) has a larger, double, proximally black, distally brown scent-spot and the *olbia*. ground-colour is a purer sky-blue with a very broad blackish-brown apex. Beneath the forewings are reddish-brown-grey, towards the distal margin densely dusted in white with the same lines as the preceding, and a white discal streak; the hindwings are silvery white, densely clouded in brown, with an indistinct brown, distally white-bordered, undulate median band. Amazon. — In the form **phallica** Hew. (154 f) the white dusting beneath is almost entirely absent. *phallica*.

Th. erema Hew. (= *biston* Mschlr.) (154 f) exhibits above a somewhat more violet tinge in the *erema*. still more reduced blue and has a very complicated, uncommonly large scent-spot filling up almost the whole cell: red-brown, proximally bordered by slate-blue, distally with 2 irregular, darker brown triangles on it, the surroundings of which are, distally and towards the costal margin, again dusted in red-brown. Beneath brown with fine, white, torn markings and black spots at the anal angle and between the median veins. Guatemala, Guiana, Amazon.

Th. elsa Hew. (= *primno* Godm. & Salv.) (154 g) reminds us of the preceding, but it seems hitherto *elsa*. known only in the ♀. Above greenish-blue, with broad blackish-brown margins; beneath purple-brown, the proximal margin of the forewings whitish, otherwise marked as in *avoca* (154 f). Hindwings with irregular, fine, white markings and a white spot in the middle of the costal margin, distally broad whitish, dusted dark, between the median veins with a straw-coloured spot. Described from Panama.

Th. feretria Hew. (154 g) I do not know in nature, but it seems likewise to be allied to *erema* and *feretria*. to be described only according to 1 ♀. Above like *elsa*, beneath reddish-brown with a small white basal spot on each wing; forewing at the costal margin dusted in purple-brown with a white discal streak, a white post-discal macular band and light antemarginal band; hindwings at the base and in the centre purple-brown, with a very irregular white macular band in the middle and a light-brown antemarginal band; the anal lobe and a spot of the tail are black, the distal margin between is white. Habitat unknown.

Th. primnoza Dyar is perhaps the ♂ of *elsa*, above blackish-brown, in the basal two thirds of the *primnoza*. proximal margin as far as the lower cell-wall and in the disc of the hindwing light metallic blue, consequently about as in *erema* (154 f), with a most peculiar dark-grey scent-spot extending subcostally almost in half the length of the wings. Beneath dark grey, at the proximal margin whitish, hindwings only in the basal third grey, distally whitish, marked about as *elsa*, but the spot of the tail is above bordered by red. Expanse of wings: 30 mm. Mexico.

Th. hirsuta Prittw. is likewise unknown to me; it is described as a ♀, but according to the very *hirsuta*. peculiar scent-spot which seems to be equal to that of *primnoza*, it can only be a ♂; below it, at the cell-end there is yet a coniform black spot. Forewings blackish-brown, dusted in blue, two thirds of the hindwings blue with a dark costal margin; fringes white and grey speckled. Beneath light-grey, the forewings marked as in *elsa*; hindwings behind the postdiscal dusted in a sooty brown, the darkest at the costal margin; in this area there is yet a line formed of white crescents; at the anal lobe and between the median veins there is one orange spot each with a black pupil. Size and shape of *Th. quercus*. Brazil.

Th. megamede Prittw. may also belong into this group. Above azure, with brownish black margins, *megamede*. the discal spot light grey. Forewings beneath grey, at the border whitish, the broadest at the apex, in it an obsolete, grey macular band, farther proximally follows a brown, somewhat curved band, still farther some small white spots at the costal margin. Hindwings chestnut-brown mixed with white, at the costal margin a conspicuous white trapezoid-spot dusted in the middle by yellowish; in the centre the traces of a white, dentate line, the basal area quite chestnut-brown; at the anal angle a black spot being bordered above by white. Patria? This species may belong near *olbia* (154 f). Size and shape of *Th. ilicis*.

Th. zenaida Dyar, likewise unknown to me, is the best ranged here. The ♂ is above black, dusted *zenaida*. all over in blue except the margins, with an elliptic brown scent-spot filling up the distal half of the cell. The ♀ is dusted in a duller blue. Under surface dark brownish-grey, on the forewings a fine white, antemarginal moon-spot-line, proximally shaded by a broad dark-grey. Hindwing with a dark-grey shade at the base and in front of the margin; the centre is crossed by a white moon-spot-line being marked very irregularly at the cell-end; behind it another irregular moon-spot-line; marginal area whitish with a dark undulate line before it; between the median veins a black spot being red above. Expanse of wings: 29—31 mm. Mexico.

51. Lycabas-Group.

Th. lycabas Cr. (= *terentia* Hew.) (154 g). We unhesitatingly set down CRAMER's figure which *lycabas*. has hitherto not been noted to HEWITSON's species. The ♂ is above dark brown, suffused by a deep violet-blue

with a brownish-grey oval scent-spot, the ♀ is duller and more greenish blue with a marginal line being distally bordered by white, proximally by black, near the anal angle of the hindwing, which is long-stretched almost like a tail. The under surface has very characteristic markings similar to those of the *ledaea*-group. Panama, Colombia, Amazon.

52. Xami-Group.

- xami*. **Th. xami** *Reak.* (= *blenina* *Hew.*, *siva* *Edw.*) (154 g) is above brown, in the disc often more or less red-yellow; beneath pea-green on a red-brown ground with curved red-brown, distally broad white postdiscals, behind them distinct submarginal spots and orange anal spots. Vancouver, Arizona, California, Mexico.
- rhodope*. **Th. rhodope** *Godm. & Salv.* (154 g) is similar to *xami*, but the hindwings exhibit above a large orange anal spot and small black submarginal spots. Beneath, the postdiscal band is more strongly undulate, at the median veins broken, but not deeply angled. Mexico.
- loki*. **Th. loki** *Skinner* is above light brown with a tiny black lunular spot at the anal angle of the hindwing, being proximally somewhat lighter. Beneath light brown with a greenish tinge, marked as *xami*, but easily separable by a series of black submarginal spots, extending from the costal margin to the anal angle. California.
- spinetorum*. **Th. spinetorum** *Bsd.* (= *ninus* *Edw.*) (154 g, h). Above greyish-brown, towards the base tinged in a greenish bluish-grey; beneath dull reddish-brown, marked like *xami*. Colorado, California, Mexico.
- johnsoni*. **Th. johnsoni** *Skinner* is regarded as a doubtful form of the preceding by the author. Above reddish brown without the bluish-grey tinge, with a darker costal margin. Beneath the same, but the white postdiscals not so coherent, more like small spots, particularly on the hindwings, on which the 5th (beginning from the costal margin) is displaced, the last being longer than the others. Marginal line black, on both sides with white borders, at the anal angle terminating into a black spot; there are no orange anal spots. The smaller and darker ♂ exhibits the usual sexual spot. Length of forewings 14 to 15,3 mm. British Colombia; Seattle, Washington.
- castalis*. **Th. castalis** *Edw.* ♂ above yellowish-brown, both wings with a broad dark costal and distal margin. Stigma small, oval. Hindwing somewhat darkened in the disc; the distal tail quite short, the other long with a white apex; forewings below at the base and in the apical part of the margin green, the rest chestnut-brown, the shortened, interrupted discal band white. Hindwings beneath green with a white marginal line exhibiting 3 small, bluish-grey crescents at the anal angle, at the middle one of which there is on top a black spot. Right across the disc runs a sinuous chain of small white spots being anteriorly margined in brown. ♀ above chestnut-brown, the green beneath darkened. Expanse of wings 27 to 30 mm. Waco (Texas).
- ilavia*. **Th. ilavia** *Beutenm.* from Texas has a resemblance to *autolytus* (154 k), but it deviates by the under surface of both wings exhibiting only 1 transverse line. ♂ above brown with a large, red-yellow postdiscal spot of the forewing and a similar, though smaller spot in the anal part of the hindwing. Beneath rather light loam-coloured; on the forewing an interrupted, distally white-tinged transverse line. The dark line of the hindwing forms a W at the anal angle. At the anal angle itself a blue-scaled lunula, in front and behind this a small, black-marked, orange spot. ♀ similar. Expanse of wings 24 to 26 mm.
- nelsonii*. **Th. nelsonii** *Bsd.* (154 h) is above blackish-brown, in the disc bright red-yellow as *xami*, beneath duller reddish-brown, marked very much like the preceding species, but much more indistinct, the lines much finer, the small antemarginal spots smaller. — The form **exoleta** *Edw.* has beneath entirely obsolete transverse lines, f. **muirii** *Edw.* is smaller, with a darkened basal part of the hindwing beneath. California, Colorado.
- adenostomat*
tis. **Th. adenostomatis** *Edw.* (154 h) is the largest species in this group, above greyer with a fine, white marginal line at the anal angle of the hindwing; the under surface is whitish brownish-grey; the somewhat lighter marginal area is defined on the forewing by a whitish line, on the hindwing by dark submarginal moons. California.
- tacita*. **Th. tacita** *Edw.* Allied to the preceding, above light leaden-coloured, at the margin somewhat darker, as well as the discal spot and the veins. The tails of the hindwings very small and thin; near the anal angle of the hindwing an obsolete ochreous shade; fringes of both wings dull white. Under surface lighter; before the border a line of dark, small crescents; across the centre a curved chain of small oval spots. Hindwings marked indistinctly, at the anal angle a small black spot, as well as a bluish spot and hereafter a triangular, light yellowish, black-margined spot. Expanse of wings 24,5 mm. California (Mendocino Co.).
- saepium*. **Th. saepium** *Bsd.* (154 h). Above yellow red-brown, beneath dull reddish-brown, with the usual lines being distally distinctly tinged in white; at the anal angle of the hindwing 2 small black spots, between which there is bluish-grey dusting. Pacific States. — In Colorado there occurs **fulvescens** *Edw.* being still lighter yellowish-red.

Th. chalcis *Behr* (154 h) is somewhat smaller, darker brown, also beneath darker, with much duller *chalcis*. markings, without any white. California, Utah.

53. Grunus-Group (*Habrodias* *Scudd.*).

Th. grunus *Bsd.* (154 i) is above light orange-brown, in the disc still lighter, particularly the *grunus*. are often bright orange. The under surface is likewise reddish-brown with 2 rows of tiny, often indistinct antemarginal spots; between the median veins and at the anal angle, often also between both, small black spots with green-silvery pupils. — The bluish-green, short-haired and lighter striped larva lives on *Quercus chrysolepis*. California, Nevada.

54. Crysalus-Group (*Hypaurotis* *Scudd.*).

Th. crysalus *Edw.* (154 i) is a large species differing greatly from all the others we know. Above *crysalus*. blackish-brown, in the basal half of the forewing and subapically, as well as in the disc of the hindwing, lilac, towards the anal angle of both wings spottend in orange. Beneath greyish-brown with darker discal streaks bordered on both sides by white, and with dark, distally white-tinged, postdiscal stripes on both wings, on the hindwing also with a proximally whitish additional basal streak; blackish submarginal lunae are proximally bordered by white on both wings, on the forewings analwards distally by orange-yellow; on the hindwing there is behind them towards the anal angle an increasing bluish-silvery dusting, between the median veins and at the anal lobe orange-red, black-pupilled spots being often connected by a bridge. California, Arizona, Utah, and South Colorado. — The form *citima* *Edw.* has above no orange spots and is beneath more grey-coloured. *citima*.

55. Calanus-Group.

Th. calanus *Hbn.* (= *falacer* *Godt.*, *inorata* *Grote & Rob.*) (154 i) is above plainly dark-brown with *calanus*. an oblong-oval — twice as long as broad — lighter scent-spot in the distal half of the cell; beneath nearly just as dark brown with postdiscal and submarginal rows of darker spots, distally bordered by fine bluish-white lines and similar discal spots. Between the median veins and above them, as well as at the anal angle, there are dark-red spots, the space between them is densely strewn with bluish-white. — f. *lorata* *Grote & Rob.* is *lorata*. somewhat smaller, beneath lighter with less distinct small spots. — The larva lives on oak-trees. In the Atlantic States and the Rocky Mountains it is common.

Th. heathii *Fletch.*, described only according to 1 ♀, is unknown to me. Above like *calanus*, beneath *heathii*. fawn-coloured with pearl-grey postdiscal spots, 4 of which on the forewing are oval, bordered on both sides by a darker band, 5 of which on the hindwing are more four-cornered, bordered on both sides by a black band; marginal spots as in *calanus*, towards the anal angle likewise scarlet, between them a plainly white, not blue spot. Expanse of wings 26 mm. Manitoba (Long River).

Th. ontario *Edw.* resembles *melinus* (159 g); expanse of wings 26 mm. On both surfaces brown, the *ontario*. forewing with a large, smooth, oval scent-spot, the fringes dark, in some places white; hindwings before the anal angle with some small, reddish-yellow scales. Beneath lighter brown, the small spots of the discal row touch each other on the forewing except 2; a distal row of more obsolete spots. On the hindwing the spots of the distal row are separated, the row straight, forming a W in the anal part. In front of the border black and bluish bordered internerval spots the 4 apical ones of which are small, the 5 th and 6 th marked in orange-red. Near the base of the tail a heap of blue scales; in the anal region a red spot marked in black and white. Based upon 1 ♂ from Ontario (July).

Th. liparops *Bsd.* (= *strigosa* *Harr.*) (154 i) is above brown like the others, beneath maybe some- *liparops*. what greyer, marked just the same, but by the widening of the dark spots the fine white stripes are much more apart from each other and often very indistinct. — The larva lives polyphagously on the most different foliage-trees, on Rosaceae and Ericaceae. Distributed in the North Atlantic States and the Rocky Mountains, but nowhere common.

Th. edwardsii *Snds.* (= *fabricii* *Ky.*) (154 i) vice versa differs beneath from *calanus* by a considerable *edwardsii*. diminution of the small dark spots which are mostly all round bordered by white, so that small eyespot-rows are produced; above there is hardly any difference, perhaps the brown tinge is somewhat lighter, the scent-spot is thrice as long as broad, appearing therefore narrower. — The larva lives on oaks. In the Northern States, mostly common.

Th. wittfeldi *Edw.* (154 k) is larger than the preceding, above differing by the darker colour and a *wittfeldi*. large orange spot between the median veins and a fine bluish-white, proximally black, marginal line analwards. Beneath the white lines are more continuous, placed nearer to the border, the red anal spots larger and more intense, the space between them less blue. Florida.

- autolyceus*. **Th. autolyceus** Edw. (154 k) resembles *melinus* (159 g) above, but the orange spots are much more extensive. Beneath brown, similar to the preceding species, with dark, distally white-bordered postdiscals and black submarginal crescents which are analwards distally spotted in red. Texas, Missouri and Kansas.
- alcestitis*. **Th. alcestitis** Edw. (154 k) is above dull-brown with the usual oval scent-spot in the ♂, beneath very much like *autolyceus* with whitish discal streaks and dusted greenish-blue in the submarginal submedian area of the hindwing. Texas and Arizona.
- oslari*. **Th. oslari** Dyar is closely allied to *alcestitis*, but smaller, the upper surface greyer brown, beneath ashy-grey instead of brown, and the red markings outside the distal band are less developed. Expanse of wings 16 mm. Tucson, Arizona.
- acadica*. **Th. acadica** Edw. (= *souhegan* Whitney) (154 k). The upper surface is brownish slate-grey, towards the anal angle with small orange spots on the hindwings and an oval scent-spot. Beneath differing by black cell-end-streaks and by the postmedian and submarginal macular rows being replaced by smaller black, white-ringed spots; analwards there are small antemarginal red spots, and between the spot of the tail and the anal spot there is greenish-blue dusting. — The larva lives on willows. Northern States, Nevada, Arizona.
- californica*. **Th. californica** Edw. (= *borus* Bsd., *cygnus* Edw.) (154 k) differs from *acadica* above by its light-brown colour, also on the forewings at the proximal angle with 2 small orange spots; beneath grey, with a reddish-brown tinge, near the apex of the forewing with small reddish-yellow marginal lunulae. In the ♀ the under surface is more dirty white. California.
- ityis*. **Th. itys** Edw. (154 k) is above brown, particularly in the ♀ with a light reddish-yellow brightening towards the proximal angle. Beneath light greyish-brown, the submarginal row of spots quite obsolete on the forewings, on the hindwings there is here a complete row of black dots; at the anal angle a velvety-black spot, above it some small orange scales; between this and the orange spot of the tail a bluish spot margined in black; the postdiscals consist of minute black, white-ringed spots. Expanse of wings: 32 mm. Prescott, Arizona.
- auretorum*. **Th. auretorum** Bsd. Above brown with 1 or 2 small orange spots towards the anal angle on the hindwing, beneath likewise brown, the row of eye-spots undulate, not very distinct and placed near the border, at the anal angle with 2 tiny reddish-yellow lunulae, the anal lobe bordered by black. California.
- dryope*. **Th. dryope** Edw. (154 k) is above quite light-brown, towards the base slate-grey, at the anal angle with 2 small yellowish-red spots, the one below the median veins being pupilled in black. The under surface is whitish-grey with the usual rows of eye-spots and a small orange spot between the tails. California, Nevada, Utah.
- sylvinus*. **Th. sylvinus** Bsd. is above darker blackish-brown, otherwise very similar to the preceding. Beneath light ashy-grey with a dark cell-streak and 2 curved rows of eye-spots, the hindwings between the tails with small orange, black-pupilled spots and towards the proximal margin from them a bluish-grey spot. Common in California.
- putnami*. **Th. putnami** Edw. 30 mm. Above fawn-coloured with white fringes. Hindwings with 4 indistinct, dark small crescents and an anal spot covered with golden-yellow. Tails black, with white margins and a broad white apex. Under surface greyish-white. Forewing with a discal luna and 6 submedian, oval spots, each with a white ring; near the anal angle 4 black streaks. Hindwing with a discal luna and a row of 7 spots. Marginal markings obsolete, anal spot orange, marked in black, the 2nd and 3rd with interspersed small blue scales, the 4th black, above orange. Utah, Colorado.
- spadix*. **Th. spadix** Edw. is allied to the preceding and just as large. Above mouse-coloured with a large, chestnut-brown shade on the forewing. The band-marking beneath very much blurred, on the hindwing irregularly broken; the anal spots are dirty brown, there is not the least to be noticed of orange or blue. Expanse of wings 24.5 mm. South Carolina.
- tetra*. **Th. tetra** Behr. Above light-brown, beneath lighter; both wings with a joint, more indistinctly tortuous median row of whitish lunulae; on the hindwings small black, antemarginal crescents, anteriorly with some whitish scales. Tail-spot orange, between it and the anal angle a blue spot. Expanse of wings: 30 mm. California.

56. Behrii-Group (*Callipsyche* Scudd.).

- behrii*. **Th. behrii** Edw. (= *kali* Streck.) (154 k) somewhat resembles the subgenus *Erora* in the scheme of markings beneath. Above red-yellowish brown with a broad blackish-brown costal and distal margin. Beneath yellowish-grey with a curved, on the hindwings strongly broken, postdiscal band of black, distally white, small spots and small submarginal lunular spots, between the median veins of the hindwings with a more intense black spot behind. Pacific States, Rocky Mountains.

57. Gargara-Group.

Th. gargara Hew. (155 a) is a smaller species which is difficult to range. The ♀ is blackish-brown *gargara*, above, towards the base blue; beneath brownish-grey, the indistinct postdiscal band darker brown, the space behind more red-brown; on the hindwing there is behind the dentate, dark-brown postdiscal a broad, lilac-white band; the two small anal spots are bordered upwards by orange, then by yellow. Amazon.

58. Ocrisia-Group.

Th. ocrisia Hew. (= *peruviana* Ersch.) (152 b) is above blackish-brown, on the forewing towards *ocrisia*, the proximal margin with a slight steel-blue reflection and near the base a large, round, brown scent-spot embedded in a slate-grey circumscription like an eye. The hindwing is in a very variable extension strewn with metallic-blue, mostly only in the inner-marginal half; there are also some blue antemarginal crescentiform spots. — In case the blue disappears altogether, we have **zora** Hew. before us. — Beneath likewise blackish-brown, forewing at the proximal margin whitish-grey, at the apex yellowish-brown, marbled with very irregular and indistinct markings, between the median veins a small orange spot. Very widely distributed from Mexico through the whole of Central America as far as Peru, Bolivia, the Amazon, and Paraguay.

Th. ocrida Hew. (152 a) is above similar, the ♂ is more blue, also on the forewings, the scent-spot *ocrida*, spot proximally dark-brown, distally black; the ♀ unicolorously brown. Beneath very easily recognizable by the yellow anal angle of the hindwing, in the ♀ the whole distal margin is broad yellow. Colombia, Amazon.

Th. arpoxida sp. nov. (155 a) connects *ocrida* with *arpoxais*; shape and colouring above as in the *arpoxida*, former, cyanean-blue with a broad black apex and costal margin, also the scent-spot is the same. Beneath dark-brown, lighter marbled, like *ocrisia*, but with the silvery-blue linear markings of *arpoxais*, also parallel to the base of the costal margin there is one like it. Described according to 1 ♂ from the Rio Songo (Bolivia) from the Coll. FASSL.

59. Thales-Group.

Th. thales F. (= *thrasyllus* Hbn.) (155 a) is closely connected with the preceding group and has *thales*, the same shape of the wings. Above black, strewn with blue in a very variable extension, particularly in the shape of spots before the distal margin of the hindwings, often also at the anal angle of the forewing. The small, hardly visible scent-spot is dark-brown. Beneath purple-brown with 5 bluish-white costal-marginal spots of the forewings and fine blue linear markings, at the anal angle broadly strewn with greenish-golden. The ♀ is above unicolorously brown. Distributed from Nicaragua to South Brazil and common. — **thalesa** Hew. is *thalesa*, presumably only an insignificant form in which the costal spots beneath are more intense, and the last is situate closer to the apex.

Th. arpoxais Godm. & Salv. (= *clepsydra* Drc.) (155 a) really belongs into a group of its own, *arpoxais*, but as it greatly resembles the preceding beneath, we range it here. Above magnificently cyaneous with a broadly black apex and a large black spot filling up the distal half of the cell, the subcostal above it set with a silvery-grey scent-scale-stripe. Beneath purple-brown, at the apex of the forewing and at the anal angle of the hindwing lighter brownish with blue markings and some green dusting at the anal angle. Panama to Bolivia (Rio Songo).

60. Besidia-Group.

Th. besidia Hew. (152 h) is apparently a very rare, smaller species; the ♂ above lustrous blue, *besidia*, with a broadly black apex and a rather large, pear-shaped, dark scent-spot at the cell-end and behind it; the ♀ is above duller and lighter blue with an extensive black margin and apex. Beneath reddish-brown with a lilac reflection; there is a characteristic median band of the hindwing, being proximally broadly tinged in red (in the figure unfortunately greenish). Brazil, Colombia, Bolivia (Rio Songo, FASSL).

Th. torris Drc. (155 a) closely allied to the preceding, above more indigo-blue, darker, beneath lighter *torris*, greyish-brown without the purple tinge, both wings at the distal margins broadly whitish, the transverse bands proximally not shaded by red, but by sepia-brown; the orange spot between the tails is absent. Rio Grande.

Th. bagrada Hew. (152 k) differs from *besidia* by its duller lilac-blue colour being more confined; *bagrada*, below the brownish-grey part of the scent-spot it another black one on the base of the median veins. Beneath coloured like *besidia*; the proximally red median band of the hindwing begins at the costal margin with an isolated spot dislodged outwards and being bordered by black and white on both sides. The ♀ is above and beneath lighter. Amazon.

Th. obelus Drc. (152 k) approximates *bagrada*, is above more lustrous dark-blue with a smaller *obelus*, round single scent-spot at the cell-end, beneath darker red-brown, the median band of the hindwing more coherent and more sinuous. The ♀ is above brown, beneath somewhat paler. Brazil.

- litteratus*. **Th. litteratus** Drc. (155 a) has above quite brown forewings with a small, light, oval scent-spot; hindwings brown, in the larger proximal half metallic blue, with a red anal spot. The under surface is lighter, the markings as in *besidia*, but narrower and distally bordered by a pure white. The ♀ is on the hindwings dull greyish-blue with indistinct, small, brown marginal spots. Paraguay.
- nugar*. **Th. nugar** Schs. (155 b) is very closely allied to the preceding. Forewings brown with a small light scent-spot, hindwing in the larger proximal half metallic light lilac-blue. Beneath brownish-grey, the proximal line orange-brownish, distally white, between the radial veins dislodged outwards, the costal spot, however, only slightly so. Described from Mexico (Jalapa), but it is before me also from Colombia (Rio Aguaca Valley) and from the Songo (Bolivia) and, therefore, apparently widely distributed.
- xorema*. **Th. xorema** Schs. is likewise similar, above like *obelus* (152 k), beneath lighter; the transverse bands are dark-brown, not red, outside broadly whitish; the ♀ is above dark-brown, towards the base suffused with blue. Expanse of wings: 20 mm. Brazil.
- cauter*. **Th. cauter** Drc. (152 i). Above likewise very much like *obelus* (152 k), the blue more indigo-coloured, the distal margin of the hindwing broader black and with a very large, red anal spot. Beneath more rusty-brown, the markings very broadly tinged in red, the postdiscal band of the forewing, beginning from the lower radial vein, dislodged inwards, that of the hindwing on both sides bordered by black and then by white, the whole anal area extensively red. The ♀ is above brown with a large, orange anal spot. British Guiana, Brazil.
- lanckena*. **Th. lanckena** Schs. is allied to *bagrada* (152 k). Above unicolorously blackish-grey with a red anal spot of the hindwings. Beneath light-brown with red, distally black-, then white-bordered lines, on the hindwing at the costal margin, then between the radial veins distally expanded, otherwise like the allies. Expanse of wings: 28 mm. Peru.

61. Tiasa-Group.

- tiasa*. **Th. tiasa** Hew. (155 b). ♂ above deep purple-blue with comparatively narrow black margins and a small double scent-spot, inside black, outside greyish-brown; at the anal angle of the hindwing a red spot. Beneath brown with white lines, on the hindwings contiguous; the extensive red anal spot connected with the spot between the median veins by a red band. Amazon.
- ortalus*. **Th. ortalus** Godm. & Salv. (155 b) is very closely allied to the preceding; the ♂ is above less purple-blue; on the under surface of the hindwing the white lines diverge more from each other towards the costal margin. The ♀ is above plainly brownish-grey with a greenish reflection at the base of the wings. From Mexico.
- praxis*. **Th. praxis** Godm. & Salv. (155 b) differs from *ortalus* by the much broader blackish-brown apex of the forewing. The anal lobe is beneath black, upwards but quite slightly red, towards the proximal margin strewn with white; between it and the small red spot of the tail lies a blackish spot in the brown ground. The ♀ is above dull brownish-grey, towards the base with a slight, bluish-grey tinge. Panama to Brazil (Sta. Catharina).

62. Erix-Group.

- erix*. **Th. erix** Cr. (= *tyrrhenus* Hbn., *erissus* Hbst.) (155 b). Above magnificently ultramarine-blue with a moderately broad, black margin; the discoidal cell is very short, therefore the position of the small black scent-spot in the upper corner near the base, above at its outside it is touched by a tiny brown scent-spot at the base of the subcostal veins; at the anal angle a minute red-brown spot. Beneath coffee-brown, on the forewing with 2 antemarginal lines, the inner one of which is distally bordered by white. Hindwings darker with a bluish-white, proximally dark-tinged, postdiscal W-line and an antemarginal row of dark spots, bordered on both sides by a lighter colour and being interrupted between the median veins by a red, black-pupilled spot. In the anal lobe a red spot bordered above by black and white. Amazon.
- timoclea*. **Th. timoclea** Hew. (155 c) is considerably larger, darker indigo-blue, with a much larger, oval, blackish-brown scent-spot surrounded by slate-green scent-scales, with a broader black apex. Beneath similar to *erix*, the fine lines formed of silvery-blue scales sprinkled on it; at the base of the costal margin is a silvery-blue dot. From Ecuador.
- cetra*. **Th. cetra** sp. nov. (155 c) resembles the preceding above, but it has longer hindwings, a duller steel-blue colour and a larger, double scent-spot, the proximal half being red-brown, the distal half, being separated by the blue transverse vein, greyish-brown. Beneath very similar; on the forewings the curved proximal line is likewise bluish-white, on the hindwings the blue basal dot is absent, the postdiscal line is clearer, not composed of dispersed scales. According to a pure ♂ from Muzo (Colombia) from the Coll. FASSL.

Th. ismarus Cr. (155 c) of which we reproduce a copy of CRAMERS figure, seems to me to be closely *ismarus*, allied to *timoclea*. The same seems to me to be the case with

Th. phalantus Cr., perhaps both are the sexes of one species; at any rate neither of them has been *phalantus*, identified up to this day, for which reason we confine ourselves to this short remark; both originate from Surinam.

63. *Spurina*-Group.

Th. spurina Hew. (= *stagira* Hew., *volana* Hew., *timaea* Hew., *lydia* Ky.) (152 h, i) is above steel- *spurina*, or slate-bluish grey, with a dull greasy lustre, narrow black margins and a double scent-spot, the upper distal portion brownish-grey, the lower red-brown. Fringes blackish-grey, at the anal angle white with a black marginal line before it. The ♀ is dull greyish-brown, towards the base bluish-grey, towards the anal angle with blackish marginal spots and a reddish or bluish spot in the anal lobe. Beneath brown, the ♀ lighter. On the forewings a curved or straight row of lunular spots, brown, distally mostly whitish; on the hindwings a strongly curved, postdiscal similar one, and an antemarginal, very dull one, being lighter tinged on both sides; between the median veins a red crescent with a small, black dot; in the anal lobe a black spot with mostly some red above between it light-blue dusting. — The insignificant form **erenea** Hew. has a still narrower black distal margin *erenea*, and on the hindwings beneath a less curved median band. From Panama to Colombia and the Amazon.

Th. endera Hew. (= *thestia* Hew.) (155 c) is above greasy-lustrous greenish-blue, with a broadly *endera*, blackish-brown apex and margins. Scent-spot large, oval, brown; ♀ duller greyish-brown, towards the base bluish-grey. Beneath more intensely brown than the preceding with more distinct submarginal lines on both wings and very much larger red spots. Amazon.

Th. genena Hew. (155 c) looks almost the same above, but the scent-spot is smaller; on the hindwings *genena*, beneath, the postdiscal band makes an almost U-shaped curve, whereas in *endera* it runs almost rectilinearly to the proximal margin. Amazon.

Th. buris Drc. (155 d) differs from the preceding by its almost purely green upper surface and double *buris*, scent-spot: in the cell black, behind it brown; beneath not different. The ♀ is above brown with an orange anal spot, beneath paler than the ♂ with more red at the anal angle. Amazon.

Th. illex Schs. seems to approximate the preceding and has the same double scent-spot; above metallic *illex*, blue with a broadly black apex and a narrowly black distal margin and a red anal spot. Beneath brown with the same markings as *buris*, only somewhat more bluish instead of white. Expanse of wings: 33 mm. Colombia.

Th. caltha Drc. (154 d) is above dark-brown, towards the base suffused by purple-blue; almost *caltha*, the whole cell is occupied by a slightly conspicuous, purse-shaped scent-spot with a longitudinal opening from which whitish scent-scales spring forth. Beneath like *spurina* (152 h, i), but with more red at the anal angle. The ♀ is above quite brown with an orange anal spot. Amazon.

Th. emessa Hew. (155 d) resembles *endera* (155 c) above, but it is brighter bluish-green, the margins *emessa*, are deeper black and more sharply defined, so that the dark-brown scent-spot becomes more prominent. The ♀♀ are in all these species above equally coloured, dull brownish-grey, towards the base tinged bluish-grey. The under surface is lighter than in the others, orange-grey with the usual, little differing lines and small red anal spots. Amazon.

Th. eliatha Hew. (155 d) is above more extensively greenish-blue than *genena* (155 c) and possesses *eliatha*, a large, double scent-spot, the proximal half of which is orange-brown, the distal half greyish-brown; beneath likewise similar to the said species, but on the hindwing the lines are not so close together and the distal one consists of conical or triangular, whitish spots being distally bordered by brown. Only between the tails there is a small red spot, the anal spot is black, between both there is bluish-white dusting. Brazil.

Th. ericusa Hew. (= *voconia* Hew.) (152 g, h) is the most closely allied to the larger *spurina* (152 h) *ericusa*, and has the same greasy-lustrous, steel-grey colour, but only a small, brownish-grey scent-spot behind the cell, the proximal part has disappeared except some traces of it. Beneath somewhat lighter, with a lilac tinge, between the anal- and tail-spots dusted more bluishly, the marking the same. Colombia, Bolivia, Brazil.

Th. sycena Hew. (155 d) presumably also belongs to this group, although the ♂ is without the scent- *sycena*, spot. Above metallic blue with a black apex and a narrow distal margin. Under surface brownish-grey with the same markings; on the forewings the row of spots is almost straight, on the hindwings more strongly broken, than in the other species. Brazil.

- legythia*. **Th. legythia** Hew. (152 i) is so closely allied to *emessa* (155 d) that it may coincide with it. Above greenish-blue with a black costal margin and apex and a black scent-spot. Beneath on the hindwings the post-discal band runs somewhat differently towards the costal margin, otherwise everything is alike. Nicaragua.
- gargophia*. **Th. gargophia** Hew. (152 i) resembles the preceding, but it is above not so green, but of a purer blue, and it has a double scent-spot, proximally black, distally brownish-grey. Beneath alike. Brazil (Espiritu Santo).

64. *Sophocles*-Group.

- sophocles*. **Th. sophocles** F. (♀ = *basalides* Hbn., *wilhelmina* Ky., *sphinx* Godt., ♀ *dindymus* Ww., *virginia* Stgr. i. l.) (155 d) initiates a very characteristic group. The ♂ is above radiantly azure-blue, on the forewings, however, only in a parallel-bordered stripe between the proximal margin and the lower median vein, the rest is blackish-brown; three fourths of the cell are filled up by the deep-brown scent-spot. The under surface is whitish-grey, in the basal inner-marginal part of the forewing brownish-grey; on the forewings 2 lines composed of brownish crescentiform streaks, the proximal one very constant and characteristic by the luna between the upper radial veins receding towards the base; hindwing in the distal part almost white with a tiny orange spot between the median veins; the postdiscal strongly broken; there is mostly a third line in the basal part. Brazil.
- sospes*. **Th. sospes** sp. nov. (155 e) is very similar, above slightly duller blue, the just as broadly black apical part exhibits in the disc an indigo-blue lustre; in the upper distal cell-corner is the very small, oval, deep brown scent-spot; beneath very light brownish, of the lines only the postdiscal one is visible, being, however, also very slightly marked; the orange anal spots are both present, though small and dull. According to 1 ♂ from Colombia in my collection.
- tephraeus*. **Th. tephraeus** Hbn. (= *faventia* Hew.) (155 e) is above similar to *sophocles*, but the apex is less extensively black, so that the proximally brown, distally black scent-spot is entirely surrounded by blue. Beneath the ground-colour is light ashy-grey, in the place of the scent-spot brownish, the distal part of the hindwing very much dusted in white, the lines distally bordered by a clear white, brought nearer to the border, mostly with a fine white discal streak. The ♀ resembles the other species, it is of a duller blue, distally broader brownish-grey. Distributed from Mexico to the Amazon and everywhere common.
- leucophaeus*. **Th. leucophaeus** Hbn. (= *halala* Hew., *parvinotus* Kaye) (151 c ♀, 155 e ♂) differs above by only quite narrowly black distal margins and a smaller, more distinctly double scent-spot. Beneath grey as *tephraeus*, but the markings more like in *sophocles*, the distal margin of the hindwings mixed with white, the postdiscal line of the forewings almost straight. Brazil, Venezuela, Trinidad.
- volupia*. **Th. volupia** Hew. is above not to be distinguished from the preceding, beneath more monotonously grey, the anal lobe black, without a red border. Guatemala, Nicaragua.
- purpurea*. **Th. purpurea** Drc. (155 f). Above darker than *leucophaeus* and with a broader, black distal margin, the scent-spot still smaller and distinctly bipartite. Under surface pearl-grey without the white mixture at the distal margin, forewings quite unmarked; the postdiscal line on the hindwing separated more into single spots. Brazil (Espiritu Santo).
- hostis*. **Th. hostis** Schs. is likewise closely allied, but it has above a broader black apex and costal margin. The small double scent-spot is proximally brown, distally grey, both parts surrounded by blue, touching the black costal margin above. Beneath more brownish-grey, marked as in *leucophaeus* (154 e), the red spot of the tail much larger. Expanse of wings: 28 mm. Brazil (Novo-Friburgo).

65. *Doryasa*-Group.

- doryasa*. **Th. doryasa** Hew. (155 e) is above magnificently lustrous ultramarine blue with a sharply defined, velvety-black apex and a narrow distal margin. The larger, black part of the scent-spot is situated in the cell, the smaller, brownish-grey part behind it. The ♀ is dull blackish-brownish, on the hindwings suffused by a dark steel-blue. The under surface is brown with a fine black, distally white postdiscal line forming a W at the proximal margin. Marginal line quite obsolete, 2 red anal spots, between them bluish dusting; marginal line black, proximally intensely white. Colombia, Amazon. — **epidius** Godm. & Salv. (155 f) is slightly different, but easily separable by the almost vanished, red spot on the tail of the hindwing beneath. Panama to Colombia.
- nota*. **Th. nota** Drc. (155 f). Above not to be distinguished from the preceding, beneath more light straw-coloured with fainter and less undulate transverse lines; the antemarginal rows of moon-spots are absent altogether, the red spots have almost disappeared. Colombia (San Sebastian).
- leos*. **Th. leos** Schs. (155 f) has above a much larger black scent-spot in the cell-end, otherwise very similar to *doryasa* (155 e). Beneath darker brown and easily recognizable by the peculiarly curved postdiscal line. Costa Rica.

Th. nivepunctata Drc. (155 f). We add here 2 very different species being otherwise not related to *nivepunctata*. any other group. The species before us has above the greasy-lustrous indigo-blue of *spurina* (152 h, i), but a much broader dark apex and at the cell-end a pear-shaped, brownish scent-spot. Beneath not to be mistaken for any other species by the chocolate-coloured, white-dotted under surface. The ♀ is above duller coloured, otherwise the same. From British Guiana and Surinam.

Th. porphyreticus Drc. (155 f). Above about as *tephraeus*, but with a broader black margin and a smaller dark-brown scent-spot. Beneath brown with a violet reflection, very characteristic by the two large, white, costal-marginal spots of the hindwing. Peru (Rio Napo).

66. Syncellus-Group.

Th. syncellus Cr. (151 i, k). ♂ above magnificently lustrous blue with a moderately broad black margin and a black scent-spot behind the cell, bordered in the cell by a smaller, red-brown spot being circumscribed like an eye by slate-blue. Beneath greyish-black with a darker transverse line and silvery green dusting at the anal angle in the shape of 2 short transverse lines, the proximal one forming a W; abdomen beneath yellowish-white. The ♀ is above darker steel-blue, beneath more yellowish-brown. Everywhere extremely common from Mexico to the Amazon; northern specimens generally have a narrower black margin. — From West Mexico (Guerrero) I received a number of specimens of a smaller, much lighter form with an almost extinct scent-spot and beneath light yellowish-grey ground-colour, which I denominate **deserta** form. nov. (151 k); — *deserta*. **eribaea** Hew. (151 k) is a form with the postdiscal on the under surface being distally broadly dusted by light-blue, from the Amazon. — *bitias* Cr. is most probably a synonym of *syncellus*.

67. Hebraeus-Group.

Th. hebraeus Hew. (151 k) entirely resembles above our figure of *deserta* (151 k), but it is of a more violet colour, the scent-spot is the same, smaller than in *syncellus*, the extensive black part behind the cell is absent. Beneath brownish with undulate, black streak-markings which are well to be seen from the figure. Bahia.

Th. cimelum Gosse (151 k) is extremely similar and above not to be distinguished, the under surface, however, is much more clouded in dark and more indistinctly, more blurredly marked. Brazil to Paraguay.

68. Pelion-Group.

Th. pelion Cr. (= *simplex* Walch., ♂ *thallus* Cr., *aeolus* F.) (148 e). Above blue with a narrowly black margin and a large, black scent-spot. Beneath blackish-grey with a slight purple tinge and a broad, white band of the hindwing parted by the veins; between the median veins an antemarginal, carmine spot, at the anal angle some silvery-blue scaling. Brazil, Trinidad, Ecuador.

Th. paphiagon Fldr. (148 f). ♂ above radiantly greenish-blue with a large, black scent-spot at the cell-end and some black dusting behind it. Distal margin narrowly black. On the upper surface of the hindwing there is a pencil of black hair on the submedian. The ♀ is more green with a much broader, blackish-brown margin. Beneath brownish-grey with a whitish inner-marginal area and black veins, a small, white, costal-marginal spot of the forewing and a yellow apical spot of the hindwing, in front of the anal margin of which there are 2 red spots. Colombia, Venezuela, Peru.

Th. ochus Godm. & Salv. (148 f) resembles the preceding above, darker blue and with a much larger black discal spot below the scent-spot and a black hair-pencil at the submedian. Beneath likewise similar, the light costal marginal spot of the forewing is larger and triangular, the apical spot of the hindwing not yellow but whitish, extending subcostally as far as the base. Before the margin only one red spot, a smaller one in the anal lobe. Mexico, Guatemala, Panama, Costa Rica.

Th. boreas Fldr. (148 f) likewise belongs here; it is smaller, above similar to *paphiagon*, beneath much more variegated by more abundant yellow spotting, a red costal margin of the hindwing, and more extensively red spots between the median veins and above them. Colombia, Amazon.

69. Coelebs-Group.

Th. coelebs H.-Schöff. (= *fidena* Hew.) (155 f, g) is above lustrous steel-blue, more greenish than *spurina* (152 h, i), distally very broad blackish-brown with long hair above in the submedian space of the hindwing and a hair-pencil at the base of the subcostal, without a scent-spot. The ♀ is above duller greyish-blue. Beneath brown, the postdiscal line darker, on the hindwings distally white, beginning in the middle of the costal margin; anal lobe black, above bordered by white, between it and the large red spot of the tail blue dusting. Cuba, Hayti.

- panchaea*. **Th. panchaea** Hew. (= *scoteia* Hew.) (155 g) is above rather similar, in the ♂ bluer, the hindwings of a rounder shape. Beneath the transverse lines are fine, nearer to the margin and parallel to it, the red spot on the tail smaller. Amazon. Minas Geraes.
- pion*. **Th. pion** Godm. & Salv. (155 g) looks above like the preceding and has the same subcostal hair-pencil and the submedian hairing on the hindwings; beneath it is duller and more indistinctly marked, the small red spot quite insignificant. Perhaps it is a form of *panchaea* and its northern representative. Distributed from Mexico to Panama.
- oppia*. **Th. oppia** Godm. & Salv. (155 g) is above much more extensively blue and, on the hindwings, it has a distinct, small, red anal spot. Above the subcostal hair-pencil of the hindwing is a black scent-spot. Beneath it is much more abundantly marked in white, also before the margin. Described from Mexico.
- piplea*. **Th. piplea** Godm. & Salv. (= *subobscura* Lathy). Allied to *pion* (155 g); the ♂ with the small hair-spot on the upper surface of the hindwing near the base of the subcostal vein. But beneath the wings are of a more intense colour than in *pion*. The dark-red anal spot of the hindwing is much larger, the two transverse macular stripes nearer to each other. West Indies: St. Vincent (Grenada).
- martialis*. **Th. martialis** H.-Schüff. (155 g) on the whole resembles *coelebs* above, but it is of a duller sky-blue and immediately distinguishable by the large, indistinctly defined, discal spot. Beneath the markings are likewise very similarly arranged, but instead of the rows of moonspots there are rather broad white lines. Florida, Cuba, Jamaica.

70. Strephon-Group.

- strephon*. **Th. strephon** F. (= *sichaeus* Cr.) (151 d). Upper surface magnificently cornflower-blue with a very broad black apex with indistinctly visible scent-scales; the anal angle of the hindwing above bordered by white, in the black lobe a small red spot. Beneath brownish-grey, the proximal margin of the forewing whitish with a large, oval, brown scent-spot below the median, covered by the convex, bulging margin of the hindwing. The postdiscal lines are white, running on the forewing from the middle of the costal margin straight to the lower median vein, and from here as far as the proximal margin in the shape of a W; submarginally placed is a row of brownish moon-spots, bordered on both sides by white, between the median veins and at the anal angle interrupted by red spots. Amazon.
- cyllarus*. **Th. cyllarus** Cr. (= *strephon* Godt. nec F., *cyllarissus* Hbst.) (151 f) is above the same, only somewhat more greenish, and the angle between the median veins on the forewing is still blue, in *strephon* already situate in the apical black. Beneath much lighter, the markings duller and finer, parallel to the margin. The ♀, as almost all of this group, is above much duller and the blue more confined, the shape of the wings rounder and broader. Brazil to Peru. — **deliciae** Drc. (151 i) seems to be based only upon an aberrative specimen in which all the black markings beneath are absent; taken in North Brazil.
- porphyritis*. **Th. porphyritis** Drc. (151 h) does not differ from *strephon* above and it is just as dark beneath, but the marking is parallel to the border as in *cyllarus*, the white colour very prominent, the scent-spot much smaller, nut-brown and nearer to the base; the disc exhibits a silky lustre. Brazil (Tapajoz and Para).
- perola*. **Th. perola** Hew. (151 g, h). Above like *cyllarus*, distinguished on the hindwing by the broad blackish-brown costal margin shining as if polished. Beneath the white markings are strongly developed, the postdiscal line more strongly and irregularly broken, the blackish-brown scent-spot extends as far as the median. Amazon, Bolivia.
- tyriam*. **Th. tyriam** Drc. (151 h) differs from the preceding above by the reduced blue of the forewings, which does not reach the anal angle, but is cut off by the broadly black distal margin; the costal margin of the hindwing is likewise polished. The under surface is lighter, the scent-spot smaller, lighter straw-coloured than the ground. Brazil (Pará), Bolivia.
- trebonia*. **Th. trebonia** Hew. (151 e) differs from the preceding by the large scent-spot in the distal half of the cell; the ground-colour is a lighter, greener blue. Beneath as in *perola*. Ecuador.
- uterkudante*. **Th. uterkudante** Drc. (151 e) has above the blue of *strephon* (151 d) and no scent-spot; beneath it differs from the preceding by a straw-coloured scent-spot and much broader black and white transverse lines, the proximal one of which begins at the costal margin with a large triangular spot. Colombia.
- ostrinus*. **Th. ostrinus** Drc. (151 f). Above like *strephon*, but without the red spot in the anal angle of the hindwing. The ground-colour beneath is of a decidedly greenish tinge and the scent-spot is absent altogether Cayenne.
- Th. phoster** Drc. (151 f) does not differ from *cyllarus* above. The ground-colour beneath is much darker and lustrous; the scent-spot is much larger, but it does not contrast in the colour; the postdiscal band is very prominent; the red spots are very strongly developed. Surinam, Colombia (Muzo).

Th. foyi Schs. resembles the preceding above, in the anal lobe a small orange spot. Beneath light *foyi*, greyish-brown, without a scent-spot, the markings as in *phoster* (151 f), duller, but on the forewing the submarginal line is absent, the proximal one extends only as far as the lower median vein. Described from Peru.

Th. purpurantes Drc. (151 g) is above greener blue than *foyi* and has no orange spot in the anal lobe; *purpurantes*, beneath the black and white postdiscal line is more sharply broken angularly and more prominent. The scent-spot is of a silky-lustrous straw-colour, in the centre darker. Peru.

Th. acameda Hew. (= *paulina* Stgr. i. l.) (151 f) resembles *cyllarus* above, but it has a green-reflecting *acameda*, polished costal margin of the hindwing, the costal angle itself being blue. On the under surface the basal half at the hindwings, particularly towards the costal margin, is darker brown, the scent-spot is quite light cement-coloured; the strongly broken lines are well reproduced in the figure. Amazon, Colombia, Peru.

Th. elika Hew. (151 g) has above a decidedly lighter and greener blue with a more narrowly black *elika*, distal part. The under surface is much lighter whitish-grey, the lines finer, towards the costal margin on the hindwing more divergent, the red marginal spots smaller and duller, the costal margin of the hindwing is less convex, the scent-spot hardly contrasts with the ground. Brazil.

Th. ambrax Ww. (151 f) has a still much narrower black apex and distal margin, and is immediately *ambrax*, recognizable by the large, oval, red-brown scent-spot at the upper cell-end. Beneath light ashy-grey, the large scent-spot clay-coloured, the lines as in *acameda* (151 f). Nicaragua, Panama, Colombia, Brazil.

Th. adela Stgr. (151 h) is a well characterized species, above something like *ostrinus* (151 f), the blue *adela*, rather very much confined, with a distinct red anal spot and a broad, blackish-brown costal margin. The under surface is brown, not greenish, between the postdiscal transverse line and the distal margin, in the whole length, a brownish macular line extends, bordered on both sides by whitish. The costal margin of the hindwing scarcely bulged out, the forewings without any scent-spot. Amazon District.

Th. syedra Hew. (151 e). A smaller species, above almost like *strephon* (151 d), beneath entirely light *syedra*, brownish, the ♀ somewhat darker, the lines arranged about as in *cyllarus* (151 f), the costal margin of the hindwing strongly convex, covering the yellowish, large scent-spot; on the hindwings the antemarginal, macular line begins at the costal margin with 2 isolated brown spots. Guatemala to the Amazon.

Th. enenia Hew. (155 h) is allied to the preceding; above more greenish-blue, beneath very light *enenia*, grey, towards the apex on the forewings reddish-brown, the lines very much like those in *syedra* (151 e), the marginal area of the hindwings extensively whitish, the postdiscal broadly white, the submarginal line consisting of tiny brown spots, the second of which beginning from the costal margin is the largest. Brazil.

Th. rickmani Schs. seems to belong here and to resemble *purpurantes* (151 g); on the forewings the *rickmani*, blue colour is confined to the surroundings of the submedian, the hindwings have only a narrowly black costal and distal margin; above the anal lobe in which there is no red there is a white spot. Beneath light olive-brown; on the hindwings the postdiscal line runs rectilinearly from the subcostal line to the lower radial; the anal red very broadly developed beyond the upper median vein. Colombia.

Th. imma Prittw. is a species that has hitherto not been identified, described according to a *imma*, single ♀ which may belong here, but also to the *orcynia*-group (p. 788). Size and shape of *Th. quercus* (Vol. I, t. 74 d); above blackish-brown, in the basal part of the forewing and on the hindwing extensively dull sky-blue. Beneath light ashy-grey with the 2 usual white transverse lines reaching almost the proximal margin also on the forewings and touching each other on the hindwings in cell 4; the spot on the tail is red, the anal spot black, only proximally dusted in red. Patria?

Th. metanira Hew. (151 c) also belongs yet into this group, in spite of the deviating scent-spot on *metanira*, the upper surface of the forewing which is situated in and behind the cell-end; it is dark brownish-grey, in the proximal part a jet-black pupil. Forewings above rather extensively radiantly greenish-blue. Beneath the forewings are unmarked greyish-brown, without the scent-spot, the hindwings marked as in *perola* (151 g, h), but without a convex costal margin and with very slightly developed red, in the ♀ almost entirely without any red, but instead of it more copiously dusted in greenish, so that it also resembles the *atema*-group (= *narbal*-group, p. 765, t. 150 h—k). From the Amazon to Peru.

Th. lorea Mschl. which has remained unknown to me, seems to be the most closely allied to the *lorea*, preceding, unless it coincides with it. It is described to be above azure with a broadly blackish-brown costal margin, apex and distal margin, at the end of the discocellular with a round, blackish-brown scent-spot. Beneath dark brownish-grey, the marking of the hindwings is as in the preceding, the forewings likewise as they are there, without any markings. Surinam.

Th. ericeta Hew. (= *munatia* Hew.) (151 d). Above of a magnificent radiantly blue like *strephon*, *ericeta*, with the same broadly black apex of the forewing; the costal margin of the hindwing has a polished black lustre, suffused by indigo-blue. The under surface is variable, brown or grey, the proximal white line diverges far

inside towards the costal margin as in *strephon*, also on the forewings which exhibit a whitish inner-marginal part and a large, somewhat darker brown scent-spot. Guatemala, Panama, Colombia.

pulchritudo.

Th. pulchritudo Drc. (151 e) is allied to the preceding, above more extensively blue with a small-polished spot on the hindwing, entirely covered by the forewing; the under surface is greenish-blue, not as in the figure on which the silvery greenish-blue opalescent spot in the discocellular is neither reproduced at all, below it a large, brownish scent-spot, the lines quite similar as in *ericeta*, only towards the costal margin not so greatly divergent; the red anal spots are almost entirely absent. Amazon, Colombia (Rio Negro: Coll. FASSL).

carteia.

Th. carteia Hew. (151 h, i) is above scarcely distinguishable from *ericeta* (151 d), the polished spot is very extensive, opalescent olive-green. Beneath brownish-grey with a large, blackish-brown, silky spot on the forewings; the costal margin of the hindwing is very strongly convex, the lines as in *ambrax* (151 f), only placed a little more towards the margin. Ecuador, Amazon.

zigira.

Th. zigira Hew. (151 i) is much smaller than *carteia* with a more narrowly black apex of the forewing, otherwise very similar; also beneath similarly marked, but the ground of the wings is of a purer light grey, the hindwings at the distal margin more dusted in white. Amazon, Venezuela, Peru.

falerina.

Th. falerina Hew. (151 i) we include here yet, although it makes a very different impression; much smaller, above deep violet-blue with very broad black distal margins and a brown-yellow, polished, unsealed spot at the base of the hindwing towards the costal margin. The under surface is greenish brownish-grey, the costal margin of the hindwing strongly convex, covering a lustrous, darker spot of the proximal margin of the forewing. On the hindwings the postdiscal begins with an isolated black spot, towards the base of it is a second, distally white spot. Guiana, Amazon.

71. Latagus-Group.

latagus.

Th. latagus Godm. & Salv. (155 h) has certain relations to a part of the preceding group by the black spot of the costal margin of the hindwing above, being partly covered by the expanded proximal margin of the forewing; the ground-colour above is lustrous blue with a moderately broad black apex and a narrow distal margin, beneath brownish-grey with 4 white transverse lines before the margin of the hindwing and a red spot of the tail. Panama.

oratus.

Th. oratus Godm. & Salv. (155 h) we append directly here; it is above silky blue, the hindwings with a yellowish-brown subcostal stigma, beneath grey with an irregular grey, proximally white bordered discal line and an indistinct, dark submarginal line bordered on both sides by white. The proximal margin of the forewing opalescent bluish-green. Mexico, Guatemala.

72. Gadira-Group.

gadira.

Th. gadira Hew. (155 h) is without tails, above lustrous ultramarine-blue with a large, oval, brown scent-spot and a moderately broad, velvety-black margin. Beneath light brownish-grey with white lunular lines and 2 orange-red, black-pupilled anal spots. The ♀ is darker violettish-blue, particularly on the forewings very broadly bordered by blackish-brown. Guatemala to Colombia.

norax.

Th. norax Godm. & Salv. (155 h) is smaller, lighter blue, with broader black margins and a rounder scent-spot; the under surface is somewhat lighter, striated with many white lunular lines. Guatemala to Colombia.

levis.

Th. levis Drc. (155 h) greatly resembles *norax* above, but the scent-spot is smaller, round and black; beneath more yellowish-brown in the distal part, in the larger basal half sharply delimited darker brown; the markings on the whole similar, but not white, but brownish, the hindwing besides with an undulate, dark-brown median band. Amazon.

conchylum.

Th. conchylum Drc. (155 i) also like *norax* with a somewhat narrower black margin; the scent-spot is much narrower and lighter. The red spots of the hindwing are almost entirely absent, and only in the dark-brown, towards the base blue-reflecting ♀ they are somewhat more visible. Brazil to Paraguay.

minthe.

Th. minthe Godm. & Salv. (155 i) resembles *gadira*, being of a somewhat lighter, silky-lustrous blue and very easily recognizable by the under surface of the forewings which is opalescent blue in the inner-marginal half. From Mexico.

elana.

Th. elana Hew. (152 g) resembles above *gadira* with its magnificent blue, but it has a tail and broader black margins. Beneath brownish-grey, at the proximal margin of the forewing lighter, the marking likewise resembles somewhat the said species, but it also resembles *punctum* (152 d) by a small black and white dot in the middle of the costal margin of the hindwing. Colombia to Brazil.

mulsus.

Th. mulsus Drc. (152 d) is above deeper purple-blue than the preceding and has beneath entirely unmarked forewings, and the dot of the costal margin of the hindwing is absent, too. It likewise has a long tail. Amazon.

Th. vieca Schs., apparently described according to a ♀, larger than *gadira*, without a tail, above *vieca*. blackish-grey, in the basal inner-marginal part of the forewing lilac-grey, the hindwings white, dusted in lilac-blue with a blackish-grey costal margin and distal margin. Beneath light brown, marked like *conchylum* (155 i), in the median area broad whitish with a white costal marginal streak. Venezuela.

73. Laeta-Group (*Erora* Scudd.).

Th. laeta Edw. (= *clothilde* ♀ Edw.) (155 i) is the typical representative of a small group probably *laeta*. comprising only this one species, but varying a great deal. The name-type is distributed in North America but apparently very rare. Above brown, towards the base suffused by blue; beneath fawn-coloured with post-discal bands and such at the margin of the hindwings, composed of tiny, orange-red, distally white-bordered spots. It flies from Quebec to West Virginia and Arizona; there are no details known as to its life-history. — **quaderna** Hew. (155 i) from Mexico is above abundantly dusted in a violettish-blue, with small dark spots before *quaderna*. the distal margin of the hindwings and orange fringes. The colour beneath is of a shade like a grey-horse, distally with a greenish shine. This is probably the ♀ of **attalion** Godm. & Salv. (155 i) which is quite brown above, *attalion*. with tiny, blue, submarginal spots of the hindwings. — **aura** Godm. & Salv. (155 i) from Costa Rica and Panama *aura*. is likewise similar, but black above, the hindwings only in the centre blue without a blue submarginal; beneath the colour is more bluish-grey, without the red small submarginal spots, and the median line of the forewing is placed nearer to the distal margin.

Th. phrosine Drc. (146 e) is a peculiar small species, which perhaps belongs into this group; above *phrosine*. dark-brown, the fringes of the hindwings white. Beneath white with a faint silvery reflection, in the disc of the forewing a bluish tinge; the postdiscal band consists of single, tiny, copper-brown spots, on the hindwings there are besides minute submarginal dots. Abdomen beneath white. Peru, Bolivia.

Th. castrena Jones (156 d) differs above from *phrosine* by lilac-blue scales being strewn on the base *castrena*. of the proximal margin of the forewing and on the hindwings. The ground-colour beneath is light lilac-blue, in the ♀ more yellowish-grey with a similar marking as in the former, though more copious. Castro (Paraná).

74. Nana-Group.

Th. nana Fldr. (155 k) is a most peculiar species not to be mistaken for any other species. The shape *nana*. of the wings peculiarly high. The colour is above dull indigo-blue with a slight lilac lustre; the whole costal-marginal half of the hindwing is of a light-grey lustre and in its basal half there is a roundish scent-spot of the same colour. Beneath light bluish-green with a faint lilac shine, in the inner-marginal area of the forewings brownish-grey; on the hindwings with a fine white lunular line, towards the inner-margin proximally bordered by blackish, at the acute anal angle a small black spot; there is no tail. Forehead brown, palpi at the sides green. Colombia.

Th. facuna Hew. (156 a) is larger, of a more slender shape of the wings. Forewings above blackish- *facuna*. brown, in the basal inner-marginal part as far as the middle of the cell suffused by indigo-blue; hindwings in the disc of a violettish-blue lustre, from which the large brown scent-spot stands out in bold relief, filling up the whole basal part, inclusive of the cell; the costal margin itself is lustrous lighter brownish. The ♀ is duller and more extensively blue. Beneath emerald-green; forewings unmarked, in the inner-marginal part brown; the hindwings with an indistinct postdiscal line of blackish, distally lighter, though not white-bordered, small streak-spots. Fringes brownish, near the anal angle black, at the base white; at the tip a small black spot. Forehead, palpi and tibiae green, legs black, wreathed in white. Rio Grande.

Th. senta sp. nov. (156 a) greatly approximates the preceding, it is larger, the distal margin of the *senta*. hindwings more convex, the wings dusted in a purer blue, the hindwings much more extensively, because the distal and proximal margins are only narrowly black. The costal margin of the hindwings dark-brown, in its basal half we notice the much smaller, red-brown lustrous, though little contrasting scent-spot of an oblong shape. Beneath the green is a shade more yellow, of the postdiscal line there is only the beginning of a W left at the anal angle, behind it is a small black spot. Forehead, palpi and femur green. 1 ♂ from Colombia (Cañon del Tolima) from the Coll. FASSL.

Th. opisena Drc. (155 k) is a smaller, ultramarine species with a broadly velvety-black apex and *opisena*. distal margin. Beneath emerald-green, often only with the beginnings of a postdiscal at the proximal angle of the hindwings, which, however, may also be extended as far as the costal margin; a small spot and the fringes at the anal angle are black, occasionally with an orange-red upper tinge. Colombia.

Th. biblia Hew. (155 k). Above plainly brown, beneath of delicate bluish green, like all the following *biblia*. species with a peculiar lilac-blue shine of a silky or mother-of-pearl lustre; at the anal angle of the hindwing a tiny black spot. Amazon.

Th. ares Godm. & Salv. (155 k) greatly approximates the preceding, being above suffused with a *ares*. purple-violet; on the green under surface there is an indistinct, whitish postdiscal and also at the cell-end a streak. Forehead green. Guatemala, Amazon.

- smaragdus*. **Th. smaragdus** *Drc.* (155 a) exhibits above a purple-violet reflection like *ares*. Beneath the postdiscal is more distinct, also on the forewings there are traces of it; it is immediately recognizable by the white fringes beneath being velvety-black at the base. Colombia (Rio Aguaca Valley), Brazil.
- semones*. **Th. semones** *Godm. & Salv.* (155 k) differs from the preceding by the leaden-lustrous, indigo-coloured upper surface, black forehead and entirely unmarked green under surface. Mexico.
- subflorens*. **Th. subflorens** *Schs.* (156 a) resembles somewhat the preceding above, but it is strewn with a purer metallic blue, with a broadly black apex of the forewing, green forehead and beneath discal lines composed of small, high lunular spots on both wings, but on the forewings only indicated, between the median veins of the hindwings also traces of a small orange-red spot, and a light discal streak. Costa Rica to Colombia.
- camp t.* **Th. camp** *Jones* (156 a) is above dull blackish-blue, distally purer black, hindwings with narrowly black margins, fringes brown. Beneath very pale green, with a particularly intense lilac-blue shine. Forewings unmarked, hindwings with a greyish-white discal streak and the discal line as in *subflorens*, but distinct only towards the proximal margin; in the anal lobe a black spot bordered above and beneath by white, between the median veins an orange-red, black-ringed spot; palpi white, forehead green. Paraná.
- quassa*. **Th. quassa** *sp. nov.* (156 a) greatly approximates the preceding, but it is above purple-brown, the hair of the proximal margin and the fringes of the hindwings snow-white. The under surface is the same, the postdiscal band as far as the costal margin very distinct, composed of high, proximally brown, distally white, lunae, also present on the forewing near the costal margin; fringes of the hindwing also beneath white, but with a deep velvety-black basal line. The forehead is black. 1 ♂ from Sa. Catharina (Coll. WERNICKE).

75. Schausi-Group.

- schausi*. **Th. schausi** *Godm. & Salv.* (156 a) is the typical representative of an extremely peculiar, small and very little known group the species of which are apparently all very rare hitherto. Above metallic ultramarine-blue, at the distal margin broadly brownish-black. Beneath blackish-grey, on the hindwings with jet-black veins. The disc of the forewing metallic blue, a whitish spot at the base of the costal margin of the hindwing, at the base of which there is a small, scarlet spot surrounded by some opalescent blue scales. Mexico, Nicaragua.
- miranda*. **Th. miranda** *Godm. & Salv.* (156 a) resembles the preceding, the anal angle of the hindwings is somewhat more drawn forwards, the wings above more purple; beneath the apex of the forewing exhibits a yellowish-white spot, the hindwings a tripartite, subapical spot, the base of the cell and the proximal margin likewise a yellowish-white spot; the abdomen is white beneath. Amazon, São Paulo.
- crepundia*. **Th. crepundia** *Drc.* (156 b) is above dull olive-brown, towards the base with an indigo-blue reflection. Beneath likewise olive-brown, with a yellowish-white, brown-veined apex of both wings, the forewings in and below the cell opalescent greyish-blue; at the base of the hindwings a large red spot. Peru.
- insignis*. **Th. insignis** *Godm. & Salv.* (156 a). Only the ♀ is known: above blackish-brown; beneath the forewings are just the same, at the proximal margin lighter with a yellowish-white apical spot; the hindwings are orange-yellow, with broad blackish-brown veins and small brownish spots at the costal angle and between and below the median veins. The bases of all the wings spotted in orange-red. Mexico, Panama.

76. Sesara-Group.

- sesara*. **Th. sesara** *Godm. & Salv.* (156 a) is an isolated species which would have to be renamed, if it remains in the large collective genus, since the same authors have already before denominated a *Thecla* with the same name. Above the forewings are blackish-brown, the hindwings blue with a fine, bluish-white marginal line in the black anal part, in which there is a reddish-brown spot; a small, short tail. Beneath silky brown, in the distal part lighter and more reddish; the postdiscal blackish-brown, on the hindwings irregular; in the anal part no red spots, only 2 black dots; fringes rusty-brown. From Mexico.

77. Orobiana-Group.

- orobia*. **Th. orobia** *Hew.* (152 a) is above deep peacock-blue with black veins and narrowly black margins. Beneath deep purple-brown, the proximal margin of the forewing light-grey; in the lower cell-half and behind it between the median veins scales of a brilliant bluish-green; at the costal margin in the middle and before the apex one whitish blurred spot each; from the proximal one there emanates a row of white dots. Hindwings with a blue basal dot and a postdiscal row of similar dots. Anal angle dusted in golden-green. Panama, Colombia, Bolivia, Venezuela, Amazon.
- orobiana*. **Th. orobiana** *Hew.* (152 a) is doubtful as to its being justified to be called a species, the chief mark is the absence of the blue stripe through the disc of the forewing beneath; the other marks stated are: larger,

with a broader black margin, above and beneath absent white costal-marginal diffuse spots vary greatly, if larger series are to be looked at. It lies before me from the Amazon and Colombia.

Th. orocana Drc. (156 b), however, is undoubtedly a different species; it has above all no tail, but *orocana*. an extended, inwardly curved anal lobe of the hindwing, as some species of the *amyntor*-group (p. 762). The colour above is a lighter, radiant greenish-blue, the apex of the forewing is very broad black; whereas in *orobita* and *orobiana* the blue colour of the hindwing above the upper radial vein extends constantly in the shape of a bow into the brown costal margin, it runs here below the said vein straight on to the distal margin. Beneath there is little difference: the blue discal stripe of the forewing is absent, on the hindwings there are at the anal angle but very sparse golden-green scales. Peru; Colombia (Cañon del Tolima).

78. Hyacinthus-Group.

Th. hyacinthus Cr. (156 b) is above sky-blue with a narrow black margin; beneath the forewings *hyacinthus*. are greenish-blue with a narrow black margin and two bands before the distal margin, the hindwings exhibit a yellowish-brownish band from the middle of the proximal margin to the costal angle, broadly bordered in black, and black spots before the distal margin. West Indies.

Th. pholeus Cr. (= *philanthus* Stoll) (156 b) is a little similar, above peacock-blue, the ♀ brown; *pholeus*. on the under surface the ♂ is greenish-blue, the ♀ yellowish-grey with black bands and a yellowish-brownish stripe on the hindwings as in the preceding. — Whereas the northern specimens from Surinam and Cayenne always exhibit some small, metallic greenish-blue spots in the median black band of the hindwing, the southern specimens from Brazil and Colombia are always without them, they may therefore be denominated **meridionalis** *form. nov.* (156 b). — At both the habitats there occur small ♂♂ with a brown ground-colour above like the ♀♀: **feminalis** *form. nov.* *meridionalis*. *feminalis*.

Th. selina Hew. (156 b) cannot be justly called a distinct species, as long as a ♂ fitting to it has not *selina*. been ascertained. The ♀ does not differ from that of *pholeus* above, but beneath the forewings are unicolorously brown with 2 darker submarginal bands; on the hindwings the costal margin next to the base is broad red-brown, otherwise as in *pholeus*. The most positive assertion for the qualification of the species is the fact that in the black median band there are always greenish-blue spots which are forever absent in southern specimens of *pholeus*. Brazil, Ecuador.

Th. nautes Cr. (153 b) is larger, above darker with a small, darkbrown scent-spot and broadly darkened *nautes*. veins. The under surface is very characteristic and unmistakable. In the ♂ the proximal half of the forewing is peacock-blue, but not in the ♀ which is also above brown. Ecuador, Amazon.

Th. elis Cr. (156 c) preponderantly differs by its under surface; the forewing exhibits in the disc *elis*. 3 or 4 black, blue-pupilled eye-spots standing below each other; on the hindwing there is at the costal margin nearer to the base another black, blue-pupilled eye-spot; the yellowish-grey longitudinal stripe extends towards the costal angle, in *nautes* between the radial veins to the distal margin. Brazil.

Th. bactriana Hew. (156 c) we insert here on account of the under surface resembling somewhat *bactriana*. *pholeus*, though it is otherwise quite isolated. Above light-blue with a broadly black apex and a large, light-ringed scent-spot. Beneath yellowish-brownish with similar spots and bands as *pholeus*. Amazon.

79. Empusa-Group.

Th. empusa Hew. (= *tympania* Hew., *bethulia* Hew., *halciones* Bllr.) (156 c) is above deep blue, *empusa*. in the larger apical half black. The under surface is light grey with fine brown postdiscal lines, distally bordered by white, proximally by a very fine orange-yellow, on the hindwing beginning with an outwardly displaced streak-spot at the costa; quite indistinct, small, submarginal lunular spots are only visible on the hindwing by being on both sides dusted in white; at the anal angle there is a small black spot, being above bordered at first by white, then by orange; proximally follows a white-dusted part, then between the median veins again an orange, small spot. Distributed from Mexico to the Amazon and Bolivia.

Th. purpuriticus Drc. (156 c) is above just the same, beneath darker, on the hindwings between the *purpuriticus*. median veins before the border much more extensively dusted by orange, the submarginal shades placed nearer to the postdiscal and more proximally. Colombia.

Th. tarena Hew. (156 c) is most similar, above hardly different, but the costal margin of the hindwing *tarena*. is broadly brown. The under surface is more brown, the lines as in *empusa*, but more indistinct, the red spot of the tail placed more proximally. Guiana.

Th. gentiana Drc. (156 d) differs above from *tarena* by a very large, black, oval scent-spot being proxi- *gentiana*. mally surrounded by slate-blue scales. Beneath like the preceding, the lines still weaker and a little straighter, the red spot removed more towards the margin. Colombia.

- lemuria*. **Th. lemuria** Hew. (156 d) is considerably smaller, above deep ultramarine-blue, with an oval, dark-brown scent-spot behind the cell and a moderately broad black apex, a narrow distal margin. Beneath light brownish-grey, marked like *empusa*. Colombia, Brazil.
- collustra*. **Th. collustra** Drc. (156 d) does not differ beneath, but above it is greyish-black, of a purple lustre, without a scent-spot, the hindwing in the proximal half more indigo-blue with a small red anal spot. Trinidad.
- argerona*. **Th. argerona** Hew. (156 e) is on the forewings above only at the base and in the disc of the hindwing somewhat darker, more indigo-blue. Beneath light reddish-grey, marked like the preceding, on the forewing, only a short postdiscal extending neither to the costal margin nor to the proximal margin; on the hindwing the grey spot between the spot of the tail and the anal spot is above also bordered by red. Brazil.
- melma*. **Th. melma** Schs. (156 d) seems to belong into the same group. Above of a purer blue with a less extensive apical black than in *empusa*, beneath more olive-brownish, the lines more distinct and broader, the space between the anal spot and the spot of the tail dusted in a bluish white. Costa Rica, Panama.
- ophia*. **Th. ophia** Hew. (156 e) is above extensively blackish-brown, only towards the base and proximal margin greenish-blue with a large, dark, hardly visible discal spot without any scent-scales, the forewings entirely blue except the broad costal margin and narrow distal margin. Beneath brownish, marked like *lemuria* (156 c), but somewhat more prominent, the submarginal macular bands more distinct, also on the forewing. Amazon.
- laconia*. **Th. laconia** Hew. (156 e) looks above just the same, but it has a large, oval scent-spot. Beneath lighter, the lines finer, lighter, more strongly broken, more remote from the border. Amazon.
- cupa*. **Th. cupa** Drc. (156 e) differs from *laconia* by the blue entering into the cell of the forewing and a broader black costal margin of the hindwing; at the cell-end of the forewing lies only a small, round, indistinct scent-spot instead of the large oval one in *laconia*. The under surface is lighter, the discal bands proximally bordered by brown, on the forewing in the lower half removed more towards the margin. Rio Grande.
- gnosia*. **Th. gnosia** Hew. (156 e) probably belongs to the same group, it has a rounder shape of the wings, is smaller, above of a purer, though more subdued blue, the ♀ brownish, with violettish-blue hindwings. The under surface entirely resembles that of the preceding. Colombia, Peru, Bolivia.

80. Echion-Group.

- echion*. **Th. echion** L. (= *crolus* Cr.) (156 e, f) is a very variable species: above dull-lustrous indigo-blue with a very broad blackish-brown apex of the forewing and costal margin of the hindwing; the larger distal half of the cell is filled up with scarcely contrasting, dark-brown scent-scales of a slight steel-blue lustre. The ♀ is much duller with a white marginal line on the hindwings in the anal direction. Beneath lighter or darker brownish-grey, particularly in the ♀ often whitish-grey, in the ♂ the disc of the forewing is more brown, in some places clouded in a somewhat darker colour, the forewings with 2 lines, the hindwings with roundish, copper-coloured to light-orange spots, bordered by black, before the distal margin a dentate line, and the usual orange-red, black-pupilled, small spots. Very common from Mexico to South Brazil. — A smaller form flying in Mexico, *echiolus* form. nov. (156 f) shows the spots on the hindwings beneath more subdued, more pale-orange with a disappearing dark bordering.
- crolinus*. **Th. crolinus** Btlr. (156 f) is similar, but above much more extensively and brilliantly blue, so that the whole proximal half of the cell remains blue, behind it a four-cornered, black discal spot. Beneath not essentially different, but the spots on the hindwings are not so round, but more oblong, so that more of a transverse band is produced. Mexico to Panama.
- vomiba*. **Th. vomiba** Schs. seems to be closely allied to *crolinus*, on the forewing the blue is confined to an inner-marginal stripe, beneath it differs by a more complete additional basal of the hindwing, which is somewhat interrupted only above and below the cell. Expanse of wings: 22 mm. Petropolis in South Brazil.
- venustus*. **Th. venustus** Drc. (156 f) is above like *crolinus*, the fringes of the forewing copper-brown. Beneath darker brown, on the forewings the postdiscal band is much straighter; we do not find any real difference from *crolinus*. Described from Brazil.
- labes*. **Th. labes** Drc. (156 f) is smaller, above dull brown with a large black scent-spot, the hindwings only in the proximal half are slightly tinged in a greyish blue. Beneath there is no difference from *echion*; it is perhaps only a small form of it, from Trinidad.
- philinna*. **Th. philinna** Hew. (= *unilinea* Kaye) (156 g). Above similar to *echion*, but with quite a different scent-spot in two parts being placed almost vertically above each other: the upper part grey, the lower one brown. The under surface is likewise similar, but without the basal spots of the hindwings and extremely variable, white to brownish-grey, the spots themselves sometimes golden-yellow, sometimes copper-orange, or dul

brownish-grey, sometimes very large, sometimes very small. Just as common as *echion*. From Mexico to South Brazil. — The northernmost specimens from Mexico, *greppa* Dyar, have an almost white under surface. *greppa*.

Th. giapor Schs. (160 d). Above blue as *crolinus*, but with the double scent-spot of the preceding, *giapor*. the distal, grey portion smaller. The under surface likewise as in *crolinus*, but with a fine streak at the cell-end, the spots on the hindwings more coherent, linear, the postdiscal straight from the costal margin to the lower radial vein. São Paulo.

Th. fostera Schs. is unknown to me, but it presumably belongs here. Only the ♀ is known: above *fostera*. brown, the forewings only at the proximal margin, the hindwings more extensively dull light-blue; at the distal margin of the latter there are in the anal part 3 small red spots, above them some black ones. Beneath light-grey with a fine, red marginal line and a red streak at the cell-end; on the forewings a row of red spots from the costal margin to the lower median vein, the second spot from below inwardly displaced; on the hindwings a red cell-spot and one above it, postdiscally a row of large, red spots, forming a broken W at the proximal margin; at the border the 2 usual red spots; above the upper median vein yet a third, smaller one. On the head a red spot. São Paulo.

Th. cydrara Hew. (156 g) and its nearest allies we most appropriately combine with the *echion*-group *cydrara*. to which they exhibit many relations. Above almost like *echion*, only somewhat more metallic greenish-blue. Beneath very easily recognizable by the large, chocolate-brown, triangular spot at the costal margin of the forewing. Very common and widely distributed from Mexico to the Amazon.

Th. ufentina Hew. (156 g) is above considerably more extensively coloured in a radiant, metallic *ufentina*. greenish-blue with a scent-spot in the cell. Beneath the forewings are quite brown with a lilac reflection, the hindwings have a large, brown spot in the basal costal-marginal part. São Paulo.

Th. viceta Hew. (156 g) has almost quite brown forewings and a very small scent-spot, only the proximal *viceta*. margin exhibits a narrow blue tinge, the hindwings are more extensively blue. Beneath like the preceding, only the brown costal-marginal spot is larger, and at the costal-angle there is also a brown spot. Amazon (Santarem).

Th. opalia Hew. (156 g, h) is above somewhat more extensively blue than the preceding, beneath *opalia*. quite purple-brown with white macular rows. Described from the Amazon.

Th. verania Hew. (156 h) initiates another subordinate group of mostly smaller species, which is likewise *verania*. closely allied to *echion*; the copper-brown basal spots of the hindwings beneath are here partly united with the proximally displaced postdiscal. *verania* is above radiantly light blue with a very narrow, black distal margin and a but slightly broader apex, without a scent-spot. On the hindwing beneath the 2 usual, orange-red anal-spots are absent. Amazon, Ecuador and Bolivia.

Th. fabulla Hew. (156 h) resembles *philinna* (156 h) above and has likewise a double scent-spot, the *fabulla*. proximal lower part of which little contrasts with the brownish-black ground, the upper part being smaller and lighter grey. Beneath on the hindwings almost like *verania*, only darker brownish-grey, on the forewings with a straight, brown-red postdiscal band; in the anal angle we do not notice the distinct W of the said species, but only a triangular, brown-red spot; at the anal angle and between the tails 2 orange spots. Guiana, Venezuela, Amazon.

Th. dolium Hew. greatly resembles the preceding, more purple blue and duller, with an only single *dolium*. scent-spot at the cell-end-beneath lighter, the copper-red spots bordered with a more distinct white. Honduras.

Th. ceglusa Hew. (156 h) is above more extensively blue with a small, indistinct, brown scent-spot *ceglusa*. behind the cell and a small red anal spot. The under surface is very much like that of *fabulla*. Amazon.

Th. petilla Hew. (156 h) has much more extensively blackish-brown forewings which are blue only *petilla*. at the proximal margin, without a scent-spot. Hindwings lustrous greenish-blue. The under surface has a reddish or lilac tinge, the distinct, brown, submarginal, small lunular spots are on both sides bordered by white, the spots of the hindwings arranged about as in *fabulla*, but larger, the red anal spots large; on the forewing the postdiscal band is longer and more parted into small spots, the uppermost of which at the costal margin is quite isolated. Amazon.

Th. phobe Godm. & Salv. (156 h) is discernible from the preceding by the red-brown colour being *phobe*. on the hindwings much more extensive and flown together and reaching almost to the margin. Mexico, Guatemala.

Th. velina Hew. (156 i) likewise greatly resembles the preceding, but here the red-brown is still more *velina*. extensive and reaches as far as near the base of the hindwings, the ground-colour being lighter, almost whitish. Amazon.

81. Dindymus-Group.

Th. dindymus Cr. (= sphinx ♂ Godt.) (156 i) is allied to the *sophocles*-group by the under surface, *dindymus*. but above it is extensively brilliant blue, without a scent-spot, with a but little brownish-black apex. Beneath

very light whitish-grey with white, proximally grey-tinged, postdiscal dentate lines and grey submarginal lunae being on both sides bordered by white; the small orange anal spots are very small. Amazon, Bolivia, Peru.

stilbia. **Th. stilbia** Hew. (156 i) resembles the preceding above, but beneath it is easily discernible by the postdiscal band being composed of crescents and exhibiting at the costal margin a separate small spot, which is removed more towards the margin. Brazil (Espírito Santo).

villia. **Th. villia** Hew. (156 i) belongs likewise here, the ♀ above more greyish-brown, towards the base with a dull ultramarine-blue tinge; the under surface is also very similar, somewhat more brownish with a lilac shine; on the forewings the postdiscal band extends to the proximal margin, on the hindwings it runs a little more straight, and there is a whitish discal streak indicated; the orange spot of the tail is larger, pupilled with a black triangle. Honduras to the Amazon.

proba. **Th. proba** Godm. & Salv. (156 i) is above still more extensively and lighter blue than *dindymus*, beneath whitish, without any marking at all. From Panama.

lenitas. **Th. lenitas** Drc. (156 i) is above monotonously dull-brown, only at the proximal margin quite narrowly dusted with blue, the hindwings in the disc a little more extensively violettish-blue. Beneath light brownish-grey, marked like *dindymus*, but the orange anal spots are absent altogether. Brazil to Paraguay.

strenua. **Th. strenua** Hew. (156 i) may also be yet included here. It differs above from the similar preceding species by a somewhat more extensive and brighter blue colour; beneath the ground-colour is more red-brownish, the white, proximally dark-bordered lines are removed a little more inwardly, also the red spot between the median veins; between it and the small anal spot the ground is dusted in a bluish white. Brazil.

heloisa. **Th. heloisa** Mschr. is a species that has remained unknown, described according to a ♀: above brown, on the hindwings with a grey tinge, towards the base lustrous bluish-grey with a red anal spot. Beneath light greyish-yellow; the postdiscal white, proximally bordered by brown, on the forewings removed inwardly below the lower median vein, on the hindwings towards the proximal margin forming a W; a series of white submarginal lunular spots is on the forewings only visible between the radial veins, on the hindwings interrupted above the upper radial vein; the small red anal spots proximally bordered by white; between the lower radial veins the white submarginal lunae are double. Length of forewings: 16 mm. Paramaribo.

purissima. **Th. purissima** sp. nov. (156 k) is only half as large as *dindymus*, above in the ♀ very much like it, dull lustrous greyish-blue, distally broadly grey. Beneath quite snow-white with an extremely fine, blackish postdiscal running almost the same, only less curved, more parallel to the border; the submarginal lunae the same, the tiny spot of the tail orange-red, between it and the blackish anal spot a small, grey, roundish spot. 1 ♀ from Panama (Lino) from the Coll. FASSL.

82. Orcynia-Group.

orcynia. **Th. orcynia** Hew. (= *anthracia* Hew., *aunia* Hew.) (156 k) has a somewhat variably blue upper surface, sometimes more violet, sometimes more greenish-blue, and the larger apical half of the forewing black; at the anal angle of the hindwing an indistinct, small, red spot. Beneath likewise variable in a more grey or brown tinge with a mostly very clear white postdiscal being proximally tinged in a fine darker colour, forming inwardly a V on the forewing below the lower median vein, whereas on the hindwings it is displaced outwardly between the radial veins and forms a flat W at the anal angle; brownish submarginal lunae are on both sides dusted cloud-like in white, the broadest above the median veins; the orange anal spots very small; a white double streak at the cell-end may be present or absent. Very common and most widely distributed from Mexico to Venezuela, Colombia and Bolivia.

catharina. **Th. catharina** sp. nov. (156 k) is very closely allied to the preceding, but I take it to be decidedly a different species. It is above not quite as extensively dull violettish-blue, the apex very broad blackish-brown. Beneath the postdiscal line on the forewing is parallel to the distal margin and composed of flat lunae, in all the specimens seen of *orcynia* running nearer to the anal angle and much more linear; on the hindwings there is instead of the two white cell-end-streaks one dark one, the two orange-red anal spots are better developed. According to 2 fresh ♂♂ from Sa. Catharina from the Coll. WERNICKE.

ahola. **Th. ahola** Hew. (= *cordelia* Hew.) (156 k) is above decidedly more lustrous greenish-blue and beneath easily distinguishable from *orcynia* by the white, basal, transverse line on the hindwing. Mexico, Colombia, Venezuela.

marmoris. **Th. marmoris** Drc. does not differ above from *ahola*; beneath the forewings exhibit a double, white cell-end-streak, the postdiscal line is more undulate, and before the distal margin there are dark circular spots, surrounded by white, no crescents. Colombia.

Th. fidelia Hew. (156 k) is above magnificently radiant light turquoise-green, the apex of the forewing *fidelia*, not so extensively black, beneath scarcely different from *orecynia*. Venezuela, Bolivia.

Th. keila Hew. (= *parasia* Hew.) (157 a) resembles *orecynia* above, but it has a long oval scent-spot *keila*, in the cell, being very little conspicuous; the under surface is likewise similar, but the postdiscal on the hindwing is towards the costal margin much broader white, on both wings somewhat nearer to the margin. Nicaragua, Guatemala.

Th. humber Schs. is closely allied to the preceding, above metallic blue; the costal margin, apex *humber*, and distal margin about just as extensively black as in *fidelia*; without a scent-spot, with a small, red and black anal spot of the hindwing. Beneath light brownish-grey, marked like the preceding, but the postdiscal runs on the hindwings from the costal margin in a straight line to the lower radial, then only it is broken and forms a W at the proximal margin. Expanse of wings: 23 mm. Venezuela.

Th. thoria Hew. (152 e) likewise approximates *keila*, above more violettish-blue, on the forewings *thoria*, confined to a stripe parallel to the proximal margin; the scent-spot is double: in the cell black, behind it red-brown. The under surface is more reddish-brown, the cell-end-streaks are absent, on the hindwings there is often a white streak-spot in the middle of the costal margin. The ♀ is duller bluish-grey. Venezuela.

Th. bassania Hew. (157 a) entirely resembles *ahola* (156 k) above, but the red-brown anal spot is *bassania*, perhaps more strongly developed. Beneath on the darker brownish-grey ground all the transverse lines are double and consist of regular semi-bows. Mexico to Panama.

Th. gabatha Hew. (= *balius* Godm. & Salv.) (157 a) is closely allied to *keila* (156 k) and has the same *gabatha*, scent-spot, but it is considerably larger and has much longer-stretched hindwings with a large, red anal spot; the ♀ is duller and lighter blue with dark, marginal spots being partly bordered by orange-red, of the hindwings; also beneath very similar. The forehead is red. Guatemala, Brit. Honduras, Colombia.

Th. sylea Hew. (157 a) has likewise a red forehead; it is above duller blue, inclusive of the cell, as the *sylea*, scent-spot of the preceding is absent, and the shape of the wings is not so long-stretched. Beneath marked almost just the same, only the postdiscal, at the costal margin of the hindwing, is placed more towards the base and proximally tinged in red, not black. Amazon.

Th. iopas Godm. & Salv. (157 b) is placed here by the authors, but to me it seems almost to be more *iopas*, closely allied to the *galliena*-group (p. 791). Wings intensely cyanic-blue with black margins, the anal lobe with a red spot. Beneath red-brown with blackish, distally white postdiscal lines being placed very near to the border, on the hindwings broken, at the anal angle angled; the anal lobe is black, inwards with a red dot, next to it a black, white-dusted spot, and besides a black, red-bordered spot of the tail. Nicaragua.

Th. orios Godm. & Salv. (157 b) has likewise resemblances to the *keila*-group, but beneath it resembles also *iopas* and *galliena* (157 f) by the postdiscal lines of the hindwings being placed very near to the border. Above blue with a broad black apex in which the rather large scent-spot is situate; the costal margin likewise rather broad brownish-grey. The anal angle somewhat produced, the tails only indicated. Beneath reddish brownish-grey. Guatemala.

83. Coelicolor-Group.

Th. coelicolor Btlr. (= *hena* Hew.) (157 b). The upper surface of the ♂ is sky-blue, with a broad black *coelicolor*, apex, in the anal lobe a small red spot. The ♀ is dull slate-blue with a lilac lustre. Beneath greyish-brown with white, straight postdiscal lines, on the forewing below the lower median vein displaced inwardly, on the hindwing near the proximal margin forming a very high W; before the border a brownish line, being proximally sharply, distally broadly and fadedly bordered by white; 2 red anal spots, white discal stripes are particularly in the ♀ well developed, or they are absent. From Nicaragua to Panama.

Th. pactya Hew. (157 b) greatly approximates the preceding; it is above more lustrous blue, beneath *pactya*, on the hindwings the postdiscal line is displaced somewhat inwardly below the lower radial vein, its dark bordering is proximally somewhat dusted in orange-red, the submarginal lunular line is much finer and bordered more by a brownish white. Ecuador, Colombia, Bolivia.

Th. peona Hew. (157 b) is above likewise similar, but it has a small dark discal spot, beneath almost *peona*, like *coelicolor*, the postdiscal running quite straight. Bolivia.

Th. cleocha Hew. (157 b) resembles the preceding above, but it also exhibits a likeness to the *cleon-* *cleocha*, group (p. 804, t. 159 d, e); the sky-blue is not so bright; the postdiscal line of the hindwing which is displaced inwardly on the hindwing below the lower radial vein like in *pactya*, is proximally bordered by black, then very broadly by orange-brown. Colombia.

- endela*. **Th. endela** Hew. (157 b) is above much more violettish-blue, the distal margin and apex duller blackish-brown; the under surface is browner, the postdisca line of the hindwings not so rectilinear, but more irregularly broken, between two veins always displaced once distally, once proximally. Colombia, Venezuela.
- epopea*. **Th. epopea** Hew. (157 c). The upper surface is dull lustrous ultramarine-blue with a broad black apex, in the ♀ much duller. The under surface is brown, at the proximal margin of the forewing white, the lines intensely white, the proximal line about in the centre, the distal one consisting of separated, white, distally black-bordered, small spots; towards the margin a third row of small, round, white spots, on the forewing much more indistinct, the red anal spots are very large, connected by a red bridge. Ecuador, Colombia.
- upupa*. **Th. upupa** Drc. (157 c) is above of a purer and deeper blue than the preceding, of a broader, rounder shape of the wings, the apex of the forewing broader black; on the under surface the postdisca line of the hindwing runs more obliquely and is displaced far inwards below the lower median vein, on the hindwing it is quite irregularly broken; at the rise of the lower median vein there is another isolated, drop-shaped, white spot; the red anal spots are not connected. Costa Rica to Colombia (Rio Aguaca Valley in Coll. FASSL).
- epopeoides*. **Th. epopeoides** Schs. is above at the proximal margin and in the basal half dull metallic blue with a broadly black apex, the hindwings finely bordered by black. On the grey under surface the postdisca line of the forewing extends only as far as the lower median vein, on the hindwings it runs in a straight line from the costal margin to the lower median; the antemarginal line consists of fine, white, separate, small lunular spots which are distally bordered by black. Expanse of wings: 20 mm. Mexico.
- picus*. **Th. picus** Drc. (157 c) is somewhat larger than *upupa*, above dull violettish-blue with a white line before the fringes of the hindwing near the anal angle. Beneath it likewise greatly resembles the said species, but it is easily discernible by the very extensive white dusting at the distal margin of the hindwings which exhibit besides a small red spot at the costal angle. Brit. Guiana, Brazil (São Paulo, Sa. Catharina).
- aholiba*. **Th. aholiba** Hew. (= *aritides* Schs.) (157 c) is separated from the preceding species by the large brown scent-spot which the cell of the forewing exhibits within the very broad blackish-brown apical colour; only the small basal half of the proximal margin is violettish blue like the disc of the hindwing. Beneath the wings are deep purple-brown, in the distal-marginal area of the forewing lighter brown; the lines are similarly arranged as in *coelicolor*, of a bright light-blue; on the hindwings the postdisca line is outwardly displaced between the radial veins; the red spots are connected by a bridge. Colombia, Venezuela.
- alihoba*. **Th. alihoba** Stgr. (157 d) from Bolivia is presumably a good species; the co-types lying before me exhibit above a somewhat dull milky blue; beneath on the hindwings the postdisca line runs more uniformly, between it and the submarginal line there is a broad stripe of bluish-white dusting, all the lines are more pronounced.
- aphaca*. **Th. aphaca** Hew. (157 d) we range here owing to its very similar marking beneath. The ♂ is above violettish-blue with a roundish, brownish-grey scent-spot behind the cell-end and a narrow blackish-grey margin; the anal lobe is very much stretched forward inwardly, exhibiting a small black spot, and before its fringes for a short distance a white line. The ♀ is tinged in a very dull lilac-blue, outside broad brownish-grey. The under surface is brownish-grey, in the ♀ lighter with similarly arranged lines as in *coelicolor*, but they are broader white, the proximal submarginal line of the hindwing is removed more towards the base at the costal margin and the discal side of the W does not touch this submarginal line. Brazil (Rio Grande do Sul).
- phacana*. **Th. phacana** sp. nov. (157 d) is a very closely allied species. The ♀ is above light greenish-blue, broadly margined by blackish-brownish, on the hindwings analwards with 3 or 4 small blackish spots behind the whitish marginal line. Beneath almost the same colours and markings, but the two submarginal lines of the hindwings are much clearer and more remote from each other, the space between the red spot of the tail and the black spot of the anal lobe likewise exhibits an orange-red spot being beneath pupilled in black. The shape of the wings is much rounder. 2 ♀♀ from Colombia (Rio Negro and Aguaca Valley).
- gaina*. **Th. gaina** Hew. (157 d) is easily to be united with this group. Above dull greyish-brown, towards the base with a somewhat greyish-blue tinge. Hindwings before the black marginal line with a white line, particularly distinct towards the anal part and some small blackish spots. The under surface likewise entirely resembles that of *coelicolor* (157 b), but the space behind the proximal submarginal line is filled up by an orange-red band as far as the costal margin. The large spot of the tail situate in it exhibits a black triangular spot. Ecuador, Bolivia.
- teatea*. **Th. teatea** Hew. (157 d) greatly approximates the preceding; above of a delicate light-blue in the disc with a somewhat diaphanous marking beneath, which is just like in *gaina*, but the white postdisca bands are twice or thrice as broad and the orange band is not so extensive. Colombia, Amazon.
- japola*. **Th. japola** Jones (157 h) is allied to *gaina*, but above dull steel-blue, distally broad greyish-black; hindwings at the anal lobe with a red spot. Beneath just like there, the white lines proximally with a broader red-brown tinge, the orange-red band of the hindwing is absent, only the 2 orange anal spots are present. Described from Castro (Paraná).

84. *Odinus*-Group.

Th. odinus *Godm. & Salv.* (157 e) is undoubtedly closely allied to *aholiba* (157 d). Above lustrous *odinus*, sky-blue, broadly margined in brownish-black with a blue submarginal line in the anal part of the hindwing. Beneath the forewings are marked as in *aholiba*, only the postdiscal line is more undulate and in the light inner-marginal area beneath the lower median vein it turns back with a distally open, obtuse angle. The hindwings are likewise alike, but more irregularly marked, the light-blue lines thicker and more luminous; at the costal angle of the hindwing there is often some red-brown dusting. Panama to Colombia.

85. *Corolena*-Group.

Th. corolena *Hew.* (152 k) is above deep violet, with a broad black apex and distal margin and a *corolena*, small light-grey scent-spot in the cell. Beneath deep purple-brown, the forewings unmarked, the hindwings with the postdiscal and submarginal lines being brought very near to each other and very near to the border; the former consisting of white, proximally black, small streak-spots, the latter of dark lunae bordered on both sides by white dusting. Abdomen beneath yellowish white. Guiana.

Th. viola *sp. nov.* (157 e) is very similar, above deep purple-violet, so that the dark apex scarcely *viola*, contrasts with it, differing by a very large double scent-spot, the proximal portion at the cell-end deep blackish-brown, the distal part greenish slate-grey; in the anal lobe a large red spot. Beneath similarly greasy lustrous lilac-brownish-grey, marked just the same on the hindwings, but with a much smaller red spot of the tail and also on the forewings a postdiscal line forming an angle inward below the lower median vein in the lighter grey inner-marginal area. Abdomen beneath white. Amazon.

Th. guapila *Schs.* (157 e) differs above by a much purer metallic blue, a considerably smaller scent-spot *guapila*, the proximal part of which is small, black, the distal part being oval and brownish; in the anal lobe no red. Beneath slate-grey, on the forewings the postdiscal line extends only as far as the lower median vein, on the hindwings it is displaced more inward, otherwise of the same shape. Abdomen beneath yellowish-white. Costa Rica.

86. *Galliena*-Group.

Th. galliena *Hew.* (157 e) is above deep indigo-blue with moderately broad black margins and a red *galliena*, anal spot of the hindwing. Beneath dark red-brown, the postdiscal lines placed near the border, darker brown, with a fine, white, distal tinge, on the forewings, however, but very little; the submarginal line less distinct, darker brown; between the tails a deep red spot pupilled in black; between it and the black anal spot a white-dusted spot. Distinguished from the species of the preceding group merely by the absence of the scent-spot. Nicaragua to Brazil.

Th. nisaee *Godm. & Salv.* (154 e) is very similar, but above violettish purple-blue, beneath the sub- *nisaee*, marginal line of the hindwing has a whitish tinge analwards. Panama to Colombia and Bolivia.

Th. lophis *Drc.* (157 e) differs from *nisaee* by a more metallic, purer blue and a more broadly black *lophis*, apex of the forewing. Beneath easily recognizable by an orange-red spot at the costal base of the forewing. Expanse of wings: 35 mm. Colombia.

87. *Orcidia*-Group.

Th. orcidia *Hew.* (157 f). Above dull indigo-blue with a narrow black margin and a small red anal *orcidia*, spot, beneath light brown, the base, the proximal margin of the hindwing, and two broad postdiscal bands dark-brown. On both wings are indistinct double cell-end-streaks; the postdiscals are situate at the proximal edge of the brown bands, copper-red, on both sides bordered by black and on the hindwings distally yet by white; at the border are darker submarginal lunae and spots, at the anal angle 2 narrow red crescents. The width of the red postdiscal varies, it may also be absent altogether. Occurring from Mexico to Brazil.

Th. myrsina *Hew.* (157 f) is above just the same, beneath the basal spot is more sharply defined, the *myrsina*, postdiscal lies on the forewings outside the brown median band, on the hindwings inside, without the red bordering; on the forewing it is displaced far inward below the lower median vein. Nicaragua to Colombia.

Th. tabena *Godm. & Salv.* (157 f) looks beneath like *myrsina*, but above it is one-coloured brown, *tabena*, From Mexico and Guatemala.

Th. tarpa *Godm. & Salv.* (157 e) resembles *tabena* and is above brown like it, but it is considerably *tarpa*, smaller and has beneath a white discal line, also the distal margin of the forewing is whitish. Mexico.

Th. taminella *Schs.* is above one-coloured brown with an orange anal spot, beneath very much like *taminella*, *tabena*, the light band yellowish-white, the brown band behind it distally bordered by white, on the forewings

straight, on the hindwings on the lower radial vein broken, from here proximally bordered by black. Expanse of wings: 20 mm. Castro (Paraná).

canacha. **Th. canacha** Hew. (157 f) resembles *tabena* above, the ♂ is brown, the ♀ on the hindwings blue-tinged; beneath likewise very similar, the brown band on the forewing very narrow, easily recognizable by the double rows of small arcuate spots before the distal margin of the hindwing; the postdiscal lines are proximally tinged by an orange brownish. Venezuela, Colombia.

arza. **Th. arza** Hew. (157 f) is above likewise brown like the preceding, the ground-colour beneath, however, is yellowish-white, with which the broad brown bands and the basal area are sharply contrasting; in the hindwings the white, dark-tinged postdiscal line penetrates analwards into the brown band. Mexico to Panama.

paralus. **Th. paralus** Godm. & Salv. (157 f) greatly approximates *arza*, but it is smaller, and the ground-colour beneath more a dirty grey, the dark bands are removed more inward, more faded. Guatemala, Costa Rica.

calatia. **Th. calatia** Hew. (157 f) deviates from the preceding by its orange-yellow under surface; the white postdiscal line traverses the brown band on both wings; the distal margin remains one-coloured yellow. Guatemala, Nicaragua.

aunus. **Th. aunus** Cr. (157 f) we add yet to this group, though it deviates greatly. Above indigo-blue. The under surface is yellowish-white, towards the margin warming into lilac-brown; the base of both wings and a large triangular spot at the costal margin of the forewing are brown; the hindwings exhibit a double, brown discal streak, the postdiscal line is strongly broken and makes a bend inward on the forewing below the lower radial vein; small orange anal spots are merely indicated. Guiana to Brazil.

duma. **Th. duma** Hew. (157 g). We here append this quite isolated animal. Above dark-brown, with a blue tinge, beneath yellowish-white, large median spots, broad postdiscal bands, and the distal margin brown. Bogotá.

88. Maeonis-Group.

maeonis. **Th. maeonis** Godm. & Salv. (157 g) is above light-blue with a broad black apex, beneath rusty-brown and distinguished by the postdiscal being moved as far as into the middle of the wing; the lines are white, the proximal line inside, the distal one outside bordered by red-brown, at the anal angle of the hindwing by black; the anal lobe and spot of the tail black, proximally bordered by a broad red-brown, between them a black spot being inside dusted in white. Mexico, Guatemala.

89. Tema-Group.

tema. **Th. tema** Hew. (157 g). Above dark-brown, the forewing at the proximal margin and the hindwing in the disc dusted in blue. The under surface is chocolate-brown, each of the wings with 2 white transverse lines in the middle and behind it, on the forewings straight, on the hindwings broken and dentate; each wing besides with 2 indistinct, white, antemarginal lines. The hindwings have two fine tails, above them and at the anal angle the usual, small red spots. Amazon.

paron. **Th. paron** Godm. & Salv. (157 g, h) on the whole resembles the preceding, but it has only one tail and the under surface is more greenish black instead of brown. Guatemala.

heraclides. **Th. heraclides** Godm. & Salv. (157 g) greatly resembles *paron*, but above it is metallic bluish-green, with a large, dark discal spot, behind which the wings exhibit a black reflection; the shape of the wings is a little more obtuse. Costa Rica.

sergius. **Th. sergius** Godm. & Salv. is above almost the same, but the discal spot is of a radiant blue, the black distal margin broader. This species and the preceding exhibit also a resemblance to the *trochus*- and *ronos*-group (p. 756), but they greatly deviate by the tails and the scent-spots.

dodava. **Th. dodava** Hew. (157 g) we include in this group. It is above lilac with a large, black discal spot behind the cell; beneath grey with whitish discal streaks and dentate lines, in the ♂ the proximal margin of the forewing is blue. Panama.

nora. **Th. nora** Jones (157 g) is very closely allied, larger, more slender, more purple-violet, the distal margin and apex only narrowly black, the scent-spot is the same. The under surface is more blackish, the white transverse lines are more subdued, on the hindwings proximally bordered by orange, more strongly broken, above the upper median vein displaced outward, between the orange anal spot a black, white-strewn spot. Brazil (Castro; Amazon).

aepea. **Th. aepea** (157 g, h) is a small, above dull ultramarine-blue species with broad blackish-grey margins; the ♀ is duller and lighter blue, the hindwings almost entirely brownish-grey. Beneath light-grey, with clear

and sharp markings: 2 postdiscal lines on each wing, the proximal one tinged inside in brownish, the distal one outside, the proximal line on the forewing straight, on the hindwing dentately broken, the distal ones on both wings more crescentiform. Ecuador, Peru, Bolivia.

Th. muatta *Hew.* (157 h) may be inserted here. Above dull indigo-blue with broad blackish-grey margins and a fine white marginal line before the fringes of the hindwing. Beneath grey with an oblique white postdiscal line on the forewings, which makes an acute angle inward below the lower median vein and is proximally bordered by dark-grey; on the hindwings it is broken and forms a W at the proximal margin; the submarginal line consists of small brownish spots, on which we notice inside whitish crescents; 2 orange anal spots. Brazil.

Th. muattina *Schs.* differs from the preceding only by orange fringes of the forewing and an orange anal spot above. Castro (Paraná).

Th. aepeona *sp. nov.* (157 h). Very near to *aepea*, larger, above more lustrous blue with a narrow black distal margin, only the apex is a little broader black. Beneath the forewings are marked about the same, on a lighter grey ground, on the hindwings, however, the postdiscal line begins in the middle of the costal margin and runs straight to the lower median vein, in order to form a W then; the submarginal lines are more apart from each other. Peru, Colombia.

Th. renidens *sp. nov.* (157 h) greatly approximates the preceding; it is above lustrous ultramarine-blue; the very broad blackish-brown apex runs in almost the same width close behind the cell as far as the lower median vein, then on the latter along to the very narrow black distal margin, its proximal bordering exhibits an intense violet lustre; the cell, on being exposed to an oblique light, is covered with indigo-blue scales. The under surface likewise resembles the preceding, the ground-colour is just a little more brownish; on the forewings the space between the submarginal lines, particularly towards the proximal margin, is filled up by orange-brownish; on the hindwings the proximal submarginal line is more irregularly broken, between the subcostal vein and the upper radial it protrudes more inwardly. Peru (Marcapata), Bolivia.

Th. mimula *sp. nov.* (157 g) differs by its smaller size and above by its plainly brown ground-colouring; the fringes of the hindwing at the base white, distally black, close behind there is a black marginal line being proximally bordered again by white. Beneath also very much like the preceding, pale olive-brownish grey; on the forewings the postdiscal line is situate close behind the cell and extends only to the lower median vein, the proximal submarginal line is removed far inward, the distal one being sharply separated from the white marginal line by an olive-brownish line. Hindwings marked about as in the preceding, but the distal margin, particularly within the scope of the orange spots, is extensively white. Pachitea (Peru).

90. Thespia-Group.

Th. bosora *Hew.* (157 k) forms the transition from the preceding group to this group. Above dull blue, the apex and distal margin of the forewings broadly brown-black, in the disc a large, brilliant, ultramarine-blue scent-spot; the marginal line of the hindwings black, proximally white; fringes likewise white, bordered by black. Beneath brown with clear, light-blue, undulate, on the hindwings broken transverse lines and discal streaks; on the forewings the postdiscal is proximally delimited below the lower median vein and runs very obliquely towards the whitish anal angle. In the anal part and at the costal angle of the hindwings there are red-brown spots. Ecuador to the Amazon.

Th. thespia *Hew.* (157) is above magnificently *Morpho*-blue with a narrow black apex, beneath peculiarly greyish-green with about the same linear markings as *bosora*, but the white discal streaks are absent; also here a red spot is situate at the costal angle. The ♀ is above dull-blue, very broadly bordered by greyish-black, beneath lighter, the red spots at the anal angle broadly flown together. Ecuador, Amazon.

Th. photismos *Drc.* (157 h) is allied to the preceding; above brilliantly bright sky-blue, with a moderately broad black-brown margin. Under surface greenish-grey with the same linear markings as the preceding, but without the red spot of the costal angle and with broadly flown together, red spots at the anal angle of the hindwing. Ecuador (Sarayaçu).

Th. margarita *sp. nov.* (157 i) is another similar species, above at once to be distinguished by the peculiarly mother-of-pearl green colour, exactly as in *margaritacea* (153 b), with a but extremely fine black marginal line and black, on the hindwings proximally white fringes. Beneath almost like *thespia*, without the costal-angular spot of the hindwing, the postdiscal line of which runs from the middle of the costal margin almost straight through to the W. Bolivia (Rio Songo).

Th. azurinus *Btlr.* (157 i) we append here, although there are no closer affinities on account of the similar under surface. Above blue with a red-brown, oval scent-spot and a broadly black apex; beneath greyish-green with similar linear markings as the preceding, but on the forewings only 2; they are less undulate and are, particularly on the hindwings, situate nearer to the border. Costa Rica.

91. *Critola*-Group.

critola. **Th. critola** Hew. (157 i) is an entirely isolated animal. Above lustrous ultramarine-blue with narrow black margins and a large black scent-spot. Beneath grey with brown transverse dashes, behind them on the forewings with a rusty-brown band and on the hindwings a chain of light-yellow small spots bordered distally by brown; the two small anal spots are yellow bordered above by brown. Mexico.

92. *Hesperitis*-Group.

hesperitis. **Th. hesperitis** Btlr. (= *cabiria* Hew., *perdistincta* Kaye) (157 i) is above black-brown, only on the hindwings beginning from the lower radial vein towards the proximal margin there is a blue sprinkling with a red spot in the anal lobe. Beneath brown, at the proximal margin of the forewing a little lighter; on the forewings an almost straight, darker brown, distally somewhat lighter tinged postdiscal line as far as the lower median vein, before the border an indistinct, darker line. On the hindwings the postdiscal line begins with a small spot being a little distally inclined; this line is black with a distal white tinge and, towards the proximal margin, proximally sometimes strewn with orange; the angle of the W, resting on the lower median vein does not reach so far towards the margin as the anal one; anal spot black, the spot of the tail copper-red with a black triangle in it, between both white dusting on a black ground. — In more southern specimens, = **lugubris** Mschlr., the spot of the tail is more brown. Most widely distributed from Mexico to Brazil.

aruma. **Th. aruma** Hew. (157 i) looks very much like the following above, but it differs by the broader black distal margin of the hindwings. Beneath it is marked like the preceding; the red colour at the anal spots is either absent altogether or it is just as extensive as in *hesperitis*. Guiana to Brazil.

camissa. **Th. camissa** Hew. (= *vespasianus* Btlr., *chariclorus* Btlr.) (157 k) is above magnificently ultramarine-blue with a violet lustre, the apex broadly black, on the median projecting pointedly towards the base. Distal margin narrowly black, the costal area of the hindwing broadly black. The under surface olive-yellowish, lustrous; marked as in *hesperitis*, the red spot of the tail reaches as far as or almost as far as the discal side of the W. Guatemala to Peru.

simasca. **Th. simasca** sp. nov. (157 k) differs from the preceding above by the increased blue colour being situated only below the lower median vein, the inner-marginal vein remains broadly black; on the hindwings there are only towards the anal angle some violet scales. Beneath there is no difference. Colombia (Rio Negro).

gedrosia. **Th. gedrosia** Hew. (157 k) is above blackish-brown, both wings towards the base with a deep violet-blue tinge. Beneath dark-brown, marked as *hesperitis*, the black of the postdiscal line more intense, the W more uniform, distinguished by the very large, red anal spots; in the surroundings of the spot of the tail there is on both sides extensive whitish dusting. Amazon.

devia. **Th. devia** Mschlr. seems to be very closely allied to the following. On the upper surface the forewings are blackish-blue, the hindwings lighter blue. The ground-colour beneath is grey-brown, the marking as in *xeneta*, the 2 red-yellow anal spots distinct. Length of forewings: 13 mm. Surinam.

xeneta. **Th. xeneta** Hew. (157 k) is above dull greenish indigo-blue, the forewings towards the margin with a bright ultramarine-blue reflection; the under surface is sooty blackish-brown, with the same markings which are distally somewhat lighter tinged and grow somewhat more purely white only within the scope of the W; in the northern, mostly a little lighter specimens some deep red-brown becomes visible at the anal angle, disappearing entirely in the sooty-black area in more southern specimens. From Guatemala to South Brazil.

partunda. **Th. partunda** Hew. (= *origo* Godm. & Salv.) (157 k) is of a deeper, more intense blackish-brown, on the hindwings the metallic-blue spot extends close to the base. The under surface is lighter, the anal spots with a broad red margin. Panama to the Amazon.

vitruvia. **Th. vitruvia** Hew. (157 c) seems hitherto to be known typically in but one specimen. Forewings black, at the proximal margin broadly ultramarine-blue, hindwings not metallic blue, at the distal margin broadly blackish-brown like at the costal margin. Beneath like the preceding, but the spot of the tail is not red, but

fortuna. dark-brown. The type originates from Para. — **fortuna** Drc. is above and beneath the same, but the spot of the tail is bordered by red. Peru, Amazon. — **torqueor** Drc. is above somewhat lighter blue, this colour on the forewing reduced, beneath like *fortuna*. From Brit. Guiana. — **indigo** Drc. has above on the forewings only a narrow blue stripe at the proximal margin and is beneath coloured as *vitruvia*; this form from Brazil is considerably smaller. — **anfracta** Drc. has above one-coloured greenish-black forewings, for the rest like the type. Described from Peru.

thama. **Th. thama** Hew. (158 a) is smaller and above very lustrous metallic-blue, more greenish than *xeneta*, the costal margin of all the wings very broad, the distal margin narrowly black. Beneath somewhat lighter than the said species, about as *partunda* with bright red spots, also the W is beneath filled up with red and proximally bordered the same. Panama to Colombia.

Th. atrox *Btlr.* is above smoky-brown with a purple reflection, beneath grey-brown with a cell-end- *atrox*, streak and very similarly marked to *thama* (158 a), the W beneath filled up with red, but proximally not bordered by red. Guiana to the Amazon.

Th. capeta *Hew.* (158 a) we include here owing to the under surface being marked the same. Above *capeta*, duller blackish-brown, the hindwings exhibit in the proximal-marginal half towards the margin a large, lilac-blue spot, in the anal lobe a small red spot. Beneath exactly as *hesperitis* (157 i), only of a somewhat more lustrous, olive-yellowish tinge. Nicaragua, Colombia.

Th. netesca *sp. nov.* (158 a) greatly approximates *xeneta* (157 k), but above on both wings it is dull *netesca*, steel-blue, with narrow blackish-brown margins. Beneath slightly lighter blackish-brown, the postdiscal line on the hindwing more irregularly broken, the submarginal lines much nearer to the margin, the small anal spots bordered by deep red-brown. Guiana to South Peru.

Th. vesper *Drc.* (158 a) is above deep metallic blue with rather broad black margins and behind the *vesper*, cell of the forewing a black spot being connected with the costal margin; in some specimens the cell itself is also black. Beneath very similarly marked to *thama*, but the ground-colour is a light ashy grey; on the hindwings the postdiscal line is more angularly broken, not with such pointed angles as there; the anal spots are lighter orange. Peru and Bolivia.

Th. zurkvitzi *Schs.* may yet be appended here. Above quite brown with a red anal spot of the hindwing *zurkvitzi*, and a white marginal line analwards. Beneath lighter brown with a blackish marginal line; the postdiscal line on the forewing is reddish-brown, distally black, then white-bordered, beneath the lower median vein displaced inward, on the hindwings proximally brighter and broader red, running as in *hesperitis* (157 i); the submarginal lunae darker brownish, on the hindwings bordered by whitish; the anal spots large, red; also above the spot of the tail some red. Expanse of wings: 25 mm. São Paulo.

93. Centoripa-Group.

Th. centoripa *Hew.* (= *hahneli* *Stgr.*) (158 a) looks above almost like *xeneta* (157 k), but the hindwings *centoripa*, are more extensively blue. Beneath similarly blackish-brown, but very peculiarly marked: the postdiscal line on the hindwing placed quite into the centre, beginning at the costal margin with a large black spot and containing the light discal streak in the middle of it; the W at the proximal angle distally bordered by white; the anal spots in the darkened distal margin are black. Colombia, Peru, Amazon.

94. Cecrops-Group (*Calycopis* *Scudd.*).

Th. cecrops *F.* (= *poeas* *Hbn.*, *beon* *Godt.*) (158 b) is the northern representative of a difficultly *cecrops*, separable group of small species of which a very great number is described that are surely partly coincident as synonyms. The present species is either above quite dark-brown, or on the forewings towards the base and on the hindwings in the inner-marginal half suffused with blue, in the ♀ more intensely. The hindwings exhibit towards the proximal angle a fine black marginal line being proximally bordered by blue-white, and a small red anal spot. The under surface is light-brown, the costal base of the forewing orange; both wings exhibit fine, double, orange-red discal streaks, on the hindwings more distinct, both with broad, orange-red discal bands on the forewings almost straight as far as the lower median vein, on the hindwings straight as far as the lower radial vein, then broken and forming a W at the proximal angle, distally finely tinged in black, then white. Distally follows the subterminal formed of blackish crescents, between the lower radial and the lower median vein more intensely black, placed nearer to the postdiscal line, distally filled up with 2 orange crescents which exhibit towards the margin high black triangular spots; then follows analwards a black spot densely strewn with blue-white; the anal lobe itself is above bordered first by white, then by orange; a fine black marginal line, proximally tinged in white. Everywhere common in the Southern States, West Virginia, Kentucky and Indiana. — **beon** *Cr.* (= *isobea* *Btlr.*, *baetra* *Hew.*, *caulonia* *Hew.*, *vibulena* *Hew.*, *belleria* *Hew.*, *jeneirica* *Fldr.*) *beon*, (158 b) is distributed in the whole of Central and South America to South East Brazil and mostly common. This form is above deeper blackish-brown, the hindwings in the ♂ more extensively and more metallic blue in a rather variable extent; in the ♀ the blue is mostly duller and lighter and is to be found also on the basal inner-marginal half of the forewing. The ground-colour beneath is generally darker brown, the postdiscal lines very much narrower red and much deeper, almost scarlet-red, the black filling up of the two red spots of the tail is much more reduced and does not reach as far as the marginal line, the space between them and the anal spot is not so extensive and not so blue, but more strewn with greyish-white.

Th. amplia *Hew.* (158 b) is above very similar, the blue is particularly in the ♀ somewhat more whitish, *amplia*, not so ultramarine-blue; beneath darker brown, on the forewings the proximal orange bordering of the post-discal line is absent, on the hindwings the orange marginal lunae are proximally bright ochreous yellow or

straw-coloured, the one above the upper median vein is but slightly indicated, its black pupil is absent. Guatemala, Nicaragua, Colombia, Guiana.

- nortia*. **Th. nortia** *Godm. & Salv.* (158 b). Both sexes are above more extensively and more deeply blue than *beon*, in the anal lobe is a small red spot. The under surface is more grey, the postdiscal line only towards the proximal angle of the hindwing proximally bordered by red-yellow, the submarginal lines are on both sides more distinctly bordered by white. From Guatemala.
- guzanta*. **Th. guzanta** *Schs.* is above brown, with a red anal spot of the hindwing; beneath the postdiscal lines are so broadly tinged in red as in *cecrops* (158 b), particularly on the hindwings; the cell-endstreak is only a light streak, not red and double; the moonspotted submarginal line is distally tinged in red which grows more intense between the median veins and is black-pupilled. Expanse of wings: 22 mm. Mexico (Jalapa).
- geminata*. **Th. geminata** *sp. nov.* (158 b) is very much like the preceding and distinguished by very intense, double, red discal streaks beneath; the submarginal line is distally dusted in orange also on the forewings, on the hindwings very broad and forms a continuous red band from the costal angle to the anal lobe. Rio Songo (Bolivia).
- suda*. **Th. suda** *sp. nov.* (158 b) is beneath scarcely different, the tinge is a little more olive, on the forewing there is a red-yellow marginal line, also on the hindwing it is somewhat red-yellow at the ends of the veins and the base of the fringes; above the forewings are black, at the proximal margin a metallic blue stripe; the hindwings are metallic sky-blue, at the distal margin and costal margin narrowly black, before the black marginal line with narrow, black, small spots. Rio Songo (Bolivia).
- lorina*. **Th. lorina** *Hew.* (158 c). Of this pretty species only 2 ♀♀ seem to have become known hitherto. Above dark-brown, both wings towards the base sky-blue. Beneath grey with similar markings as the preceding, but on the forewing the postdiscal line is regularly undulate and running through as far as the proximal margin, making a deep bow inward below the lower median vein; there is no discal streak at all; on the hindwing the submarginal line is red-brown, on both sides bordered by white; the two red spots of the tail and the anal spot are connected by a red bridge. Probably from Venezuela.
- cyanus*. **Th. cyanus** *sp. nov.* (158 c) is above brilliant light-blue with a broad black costal and distal margin, the hindwings are quite narrowly bordered by black, only at the apex a little broader; between the tails, before the border, a black dot; beneath hardly different from *suda*, only of a somewhat lighter and more yellowish tinge. Bolivia.
- talama*. **Th. talama** *Schs.* is quite a little species which may belong here. Forewings black, hindwings of a dark-blue tinge with a white marginal line analwards. Beneath light greyish-brown with dark, distally light-bordered cellular streaks; the postdiscal line dark-brown, distally whitish, on the hindwings proximally dark-red; darker brown submarginal shades are proximally bordered by whitish; the spot of the tail red with a little black pupil close at the border, and some red above the upper median vein. Expanse of wings: 17 mm. Petropolis in South Brazil.
- hosmeri*. **Th. hosmeri** *Weeks* is very incompletely described, but it may belong here. Above black with a slate-coloured reflection. Beneath brownish slate-coloured; the postdiscal lines red, distally white; the anal spot and two spots of the tail red. Expanse of wings: 23 mm. Venezuela (Suapure).

95. Endymion-Group.

- endymion*. **Th. endymion** *Cr.* (= *tyrtacus* *F.*, *xenophon* *Don.*, *hugon* *Godt.*) (158 c) is easily recognizable by the orange-ochreous colouring of the upper surface, only the costal margin of the forewings is broader dark-brown, the distal margin very narrow; the black marginal line of the hindwings is towards the proximal angle proximally bordered by white. Beneath brownish-grey, in the inner-marginal area of the forewing with an orange reflection with similar, but somewhat less broken postdiscal lines than in *beon* (158 b); the submarginal line carried out on both wings is a somewhat undulate brown line turning black analwards on the hindwings and being distally tinged in a broad orange as far as the lower radial vein. Colombia.
- cyphara*. **Th. cyphara** *Hew.* (158 c) is above very similar, but the costal part of the forewings almost as far as down to the lower median vein is brown, not so sharply defined as in *endymion*, but gradually warming into the orange. Beneath, the basal part of the wings as far as the postdiscal lines is somewhat darker brownish-grey than the marginal part; the spot of the tail is higher, broader red, with a thicker black pupil, the anal spot is also thicker black, the space between both not spanned by red. From Mexico to Venezuela, nowhere common.
- denarius*. **Th. denarius** *Btlr.* (= *calena* *Hew.*) (158 c) is likewise not dissimilar, but the orange colour is confined to the area between the median veins of the forewing; hindwings quite brown with a small orange anal spot. Beneath almost the same as *cyphara*, only darker, the postdiscal band less bordered by orange. Mexico to Panama.
- Th. sethon** *Godm. & Salv.* (158 c) is closely allied to the preceding, but the orange-copper spot is absent altogether, the costal margin of the forewing is rather darkened; the under surface is more red-brown, the postdiscal line more distinctly proximally bordered by red. Mexico to Costa Rica.

Th. plusios *Godm. & Salv.* is a somewhat doubtful species which neither fits entirely to *denarius*, nor *plusios*, to *sethon* (158 c); it differs from the former by its more red-brown wings and not darkened discal area. Mexico to Panama.

Th. perisus *Drc.* (158 c) is above monotonously dull brown with a small orange anal spot of the hindwing, *perisus*, beneath much lighter brown than *denarius*, equally marked, only the postdiscal band of the forewing is parallel to the distal margin, in *denarius* somewhat obliquely placed to it. Venezuela.

Th. joya *Dogn.* (= *callao Drc.*) (158 c) is above dark copper-brown, with a brown costal margin, *joya*, apex and distal margin, on the hindwings towards the proximal margin densely yellowish-haired. Beneath dark brown-grey, in the basal part, especially of the hindwing, darker than outside; the postdiscal lines rusty brown, distally tinged light-grey, the submarginal line composed of light-grey crescents, otherwise like *cyphara*. Peru.

Th. rugatus *Drc.* (158 d) greatly approximates *denarius* and *sethon*. Above dull olive-brown, the *rugatus*, hindwing towards the proximal margin with copper-coloured hair and a small orange anal spot. Beneath uniformly light olive-brown, the postdiscal line almost straight, broad dark-orange, distally bordered by black, then sharply by white; small, submarginal, dark nebulous spots, the spot of the tail large and of a brilliant orange. Abdomen beneath white. The ♀ is above and beneath lighter. Peru.

Th. nubilum *Drc.* is closely allied to *sethon* (158 c). Above blackish-brown with a small orange anal *nubilum*, spot. Beneath greyer, the postdiscal lines narrower, straighter and nearer to the distal margin. Castro (Paraná).

Th. fernanda *Jones* is above just the same, beneath yellowish grey-brown, the postdiscal line on the *fernanda*, forewing straighter, on the hindwing less sharply angled with a distally displaced costal-marginal spot; there are no discal streaks. Expanse of wings: 29 mm. Paraná.

Th. tirrhaea *Mschlr.* is unknown to me; size of *acaciae* (Vol. I, t. 73 b), hindwings rather long-stretched; *tirrhaea*, above plainly dark-brown, beneath lighter brown; the postdiscal line on the forewing straight, dark-brown, on the hindwing more dissolved into spots, towards the proximal margin angularly broken and distally bordered by white; double, darker brown, small submarginal spots; the spot of the tail large, oval, black, proximally edged by red-yellow, distally by white, between it and the black anal spot white dusting. Length of forewings: 13,9 mm. Surinam.

96. *Clarina*-Group.

Th. clarina *Hew.* (158 d) is above blackish-brown, at the costal margin of the hindwing brilliant *Morpho-clarina*, blue. Beneath reddish-brown, the postdiscal line is almost straightly carried through as far as the W and on the hindwing on both sides bordered by orange; the anal lobe with a small black spot, the spot of the tail orange, pupilled in black. Mexico to Panama.

Th. tamos *Godm. & Salv.* (158 d) is duller coloured, the blue which is much darker, is situate at the *tamos*, proximal margin, not at the costal margin. The under surface is very characteristic by the very much broadened postdiscal band of the hindwing, the submarginal band consists of white, distally black-bordered crescents and touches the discal side of the W on the lower median vein, it is, between the radial veins, placed nearer to the distal margin. Costa Rica, Panama.

Th. matho *Godm. & Salv.* (158 d) is not different above, beneath the white band of the hindwing is *matho*, only half as broad, the submarginal line uniformly undulate, not moonspotted. Brit. Guiana to Bolivia (Rio Songo).

Th. clarissa *sp. nov.* (158 d) we include here as the nearest ally. Above there are resemblances to *clarissa*, *tarania* (p. 810, t. 160 c, d), dull brown with a broad orange band in the anal part of the hindwing as far as beyond the lower radial vein. Beneath light-brown with white, proximally orange-bordered postdiscal lines, on the hindwings straight as far as the submedian, then in a plain, right-angled curve to the proximal margin; a broad, orange antemarginal band proximally undulately bordered by blackish. 1 ♂ from São Paulo.

97. *Calus*-Group.

Th. calus *Godt.* (158 d) is the only representative, distributed from Guatemala to the Amazon. Above *calus*, radiantly *Morpho*-blue with a very broad blackish-brown costal margin, apex and distal margin, the costal margin of the hindwing whitish, the distal margin narrowly black, only 1 tail. Beneath it is easily recognized by the triangular, dark-brown costal-marginal spot on the ochreous-brown ground. The ♀ is smaller, much duller, only in the disc of the hindwing light violet-blue, in the basal inner-marginal part of the forewing only somewhat tinged in light greenish bluish-grey.

98. *Demonassa*-Group.

Th. demonassa *Hew.* (158 d) looks above like *atrius* (158 c), beneath it reminds us of *calatia* (157 f), *demonassa*, but it has only one tail; the broad, red-brown discal bands are distally bordered by black and white lines, proximally only on the hindwing by the short cellular streak. From Mexico to the Amazon.

buphonia. **Th. buphonia** *Hew.* (158 e) is above plainly brown, beneath like the preceding, but behind the brown band of the forewing, in the anal part, there is a broad grey area, in the preceding not. Colombia, Amazon.

99. Atrius-Group.

atrius. **Th. atrius** *H.-Schäff.* (= *clitumnus* *Btlr.*) (158 e) has black forewings and radiantly ultramarine-blue hindwings with a black proximal margin and a very narrow distal margin increasing somewhat in width analwards. Beneath ochreous-brown with a faint silky lustre, marked about as the *hesperitis*-group (p. 794), but the postdiscal band of the hindwing is placed more towards the base at the costal margin. The ♀ is above dull blackish-brown, in the disc of the hindwing dark blue. From Guatemala to the Amazon, in the southern districts of the range common, to the north rarer.

mimas. **Th. mimas** *Godm. & Salv.* (158 e) is very similar, but the forewings are, from the cell to the proximal margin, likewise radiantly blue as the hindwings. From Panama to the Amazon, rare.

calor. **Th. calor** *Drc.* (158 e) is very closely allied to *atrius*, the forewings are dull greyish-brown, not black, also the hindwings much duller lilac-blue, at the costal margin whitish; nor is the proximal margin blackish-grey, but yellowish-white, like the abdomen. Beneath the same, only the discal bands are proximally broadly bordered by vermilion. Brazil.

petaurister. **Th. petaurister** *Drc.* differs from the preceding like *mimas* does from *atrius*, i. e. the inner-marginal part of the forewing is, as far as up to the cell, of the same dull blue as the hindwings. Brit. Guiana.

cos. **Th. cos** *Drc.* (158 e) has black, somewhat olive-tinged forewings and dark-blue hindwings being here, in contrast with the allies, broadly bordered in black at the costal, distal and proximal margin, and in the anal lobe a small red spot. Beneath like *atrius*. Guiana, Brazil.

100. Acis-Group.

acis. **Th. acis** *Drury* (= *mars* *F.*) (158 e) is above dark-brown, beneath very characteristic by the broad white bands of the hindwing, which meet between the median veins and are here interrupted by a large orange spot; at the base of the hindwing there are yet two tiny white spots below each other. South Florida, Antilles.

favonius. **Th. favonius** *Sm. & Abb.* (158 e) we include here owing to its external resemblance. The brown upper surface exhibits in the upper cell-end a small, oval, light scent-spot and analwards on the hindwings and between the median veins of the forewings orange spots. Beneath similarly marked as *acis*, but instead of the broad white bands there are narrow moonspot-rows. Almost the whole submarginal space is occupied by orange spots, between the spot of the tail and the anal lobe there is a long spot dusted in blue-white; the small basal spot of the hindwing may turn into a long streak. — The larva lives on oaks. Gulf-States as far as up to South Carolina.

101. Damon-Group (*Mitoura* *Scudd.*).

damon. **Th. damon** *Cr.* (= *gryneus* *Hbn.*, *damastus* *Godt.*, *smilacis* *Bsd.*, *auburniana* *Harr.*) (158 f) is above brown with an oval, brown-grey scent-spot in the upper cell-corner, the f. *discoidalis* *Skinner* has an ochreous-yellow to red-yellow disc of all the wings. Beneath green, at the proximal margin of the forewing reddish-brown, with white, on the hindwings very sinuously curved postdiscal lines, proximally broadly tinged in cinnamon-brown, and a short, similar basal transverse line; behind the white marginal line there are brown, small submarginal spots being dusted in greyish-white at the anal angle, between the median veins behind them an orange-yellow small spot being bordered above by black. — The larva lives on *Juniperus virginiana*. In 2 or 3 generations in the eastern United States.

102. Simaethis-Group.

simaethis. **Th. simaethis** *Drury* (= *sarita* *Skinner*, *lycus* *Hbn.*) (158 f) is above lustrous violet with a brown costal and distal margin, the anal lobe of the hindwing, being rather much drawn out, is rusty-brown. The ♀ is blackish-brown, towards the base with a bluish-grey tinge. The under surface is light green, in the inner-marginal part of the forewings grey with silvery white, transverse lines being proximally more broadly, distally more narrowly bordered by red-brown. The distal margin of the hindwing is, on the red-brown ground, densely dusted in white and exhibits before the anal angle 2 or 3 silvery spots. Most widely distributed from Texas to South Brazil, also in the Antilles.

moesites. **Th. moesites** *H.-Schäff.* is half as large as *simaethis*, above brighter dark-blue; beneath the red-brown postdiscal stripe is tinged white only on the hindwings in the inner-marginal part, and the whole distal part as far as to it is violetish-grey, towards the base cinnamon-brown, towards the costal margin silvery-blue with 3 black spots in the anal part. Cuba.

telea. **Th. telea** *Hew.* (158 f) is considerably smaller, above very similar, but the ♀ is more extensively and more purely blue. Beneath the silvery-white discal bands are reduced to small indistinct spots, only at the

anal angle distinct as a high W; also the red-brown colour of the distal margin is confined to the anal half, slightly dusted in white and decorated with increased silvery spots. Still farther distributed than the preceding, from Mexico to Paraguay.

Th. crethona *Hew.* (158 f) is considerably larger than *telea*, above indigo-blue with narrow black margins; *crethona*, the under surface is very similar, at the anal angle of the hindwing more extensively cherry-red, upwards bordered by the distinct, silvery W. Cuba, Jamaica.

103. Badeta-Group.

Th. badeta *Hew.* (158 f) is a species not yet sufficiently known among which there may be 2 or more *badeta*, that are closely allied. The ♂ is above dark violet-blue with a purple reflection, the costal margin and apex broader, the distal margin very narrow greyish-brown, the hindwings in 2 ♂♂ before me from the Coll. SEITZ exhibit 1 small tail. DRUCE is of the opinion that the ♂♂ are untailed and only the ♀♀ tailed; more ♂♂ seem not to be known at present. The ♀♀ are above brown, according to the original description „sometimes“ blue-tinged (= f. *melba* *Hew.*). 5 specimens before me are above all intensely blue, in the whole inner-marginal *melba*, half of the forewing and in the disc of the hindwing, only a sixth is quite brown, without any blue at all. Beneath bright light-green, the postdiscal blackish, distally white, extending on the forewing as far as the lower median vein, almost straight, on the hindwing angularly broken, at the anal angle forming a flat W. The anal spot black, above white, then orange-bordered, the spot of the tail thick orange-red, black-pupilled, between both another tiny orange spot, sometimes all the 3 spots are broadly connected. The marginal line in the anal half black, proximally white, otherwise together with the fringes reddish-brown. Guiana, Colombia, Brazil.

Th. carla *Schs.* seems to be closely allied. Above dark violet-blue with a broadly blackish-brown *carla*, apex and costal margin. Beneath brilliant green with red-brown fringes, the forewings without markings; on the hindwings the postdiscal is reddish-brown and the spot of the tail is only a small red dot; the hindwings themselves are uniformly rounded and without a tail. Expanse of wings: 19 mm. Colombia.

Th. gabina *Godm. & Salv.* (158 f) is above blackish-brown, at the base of the forewings and in the disc of *gabina*, the hindwings dull lilac-blue. Hindwings with short tails. Beneath green, forewings unmarked, at the proximal margin grey. Hindwings with a fine black, distally white postdiscal being more arcuately undulated, not acute-angularly broken. Spot of the tail small, red, black-pupilled; anal spot black, between both another small black spot; palpi and forehead green. Mexico to the Amazon.

Th. myron *Godm. & Salv.* is very similar; the hindwings, being blue in the disc, have no whitish sub- *myron*, marginal line, and beneath, the anal angle is proximally bordered by red. Costa Rica and Panama.

Th. oleris *Drc.* (158 g) differs above by brown, olive-tinged wings. On the under surface, the forewings *oleris*, are unmarked as in *gabina*, at the proximal margin grey; the hindwings exhibit a light discal streak, the postdiscal as in *gabina*, but feebler, the spot of the tail is absent altogether and at the anal angle there is a small black dot being bordered above by yellow. Palpi grey, with black hair, the terminal joint black, at the apex white; forehead brown with a small green dot between the eyes. Paraguay.

Th. lampetia *Godm. & Salv.* has above in the inner-marginal half of the fore- and hindwing a much *lampetia*, brighter blue. Beneath the transverse lines are blacker, the red submarginal spots proximally broadly bordered by black. Costa Rica.

Th. caespes *Drc.* (158 g) is allied to the preceding, above almost the same; head, collar, and costal *caespes*, base of the forewing metallic bronze-green, fringes copper-brown. Beneath dull bronze-green, marked as *lampetia*, the proximal margin of the forewing dull copper-coloured. Bolivia.

Th. aguaca *sp. nov.* (158 f) is above blackish-brown as *oleris*; beneath more bluish greyish-green, *aguaca*, the unmarked forewings at the proximal margin brownish-grey. Hindwings as in *oleris* with a light cell-end-streak and a very arcuate postdiscal being broad and distinct proximally black, distally white; at the anal angle are 3 purple-red, small spots surrounded and strewn with black, upwards bordered by light bluish; above the upper median vein and between the radial veins are at the margin yet 2 small white spots. Fringes dull bronze-green, at the anal angle white, distally black, in front of them a black, white-tinged marginal line. Forehead and palpi as in *oleris*. Colombia (Rio Aguaca Valley).

Th. crispisulcans *sp. nov.* (158 g) is very similar, above blackish-brown, towards the base with a *crispisulcans*, bluish-grey reflection. Beneath somewhat lighter, more yellowish green, the postdiscal similar, but consisting of much more curved bows, below the lower median vein and below the lower and above the upper radial veins receding very far towards the base; on the hindwing there is a complete row of bronze-brown, small submarginal spots, running through as far as the costal margin, the spots being on both sides bordered by whitish; the spot of the tail orange, black-pupilled. Sa. Catharina. Type in the Coll. WERNICKE.

nitetis. **Th. nitetis** Godm. & Salv. (158 g) we append here yet, although it belongs farther in front, owing to its habitus and scheme of markings. Above brown, in the ♀ towards the base and in the disc of the hindwing dull blue. Beneath peculiarly greyish-green; the postdiscal on the forewing little distinct, but carried out as far as the proximal margin, proximally displaced below the lower median vein and on the submedian fold proximally angularly broken; on the hindwings more strongly broken with a high W at the proximal angle, inside tinged in red-yellow; at the anal angle 3 or 4 red-yellow spots, the one between the tails black-pupilled. Mexico, Colombia, Brazil.

104. *Vesulus*-Group.

vesulus. **Th. vesulus** Cr. (158 g) is above blackish-brown with lighter fringes being on the hindwing towards the anal angle white. Beneath of a silky lustre yellowish brownish-grey with almost the same marking as in the *cecrops*-group (p. 795); the characteristic difference is noticed in the marginal line of the hindwing being black, proximally white and at the ends of the veins regularly sending forth black small triangles inside, so that the white bordering grows undulate and the red spots assume an oval shape being rounded towards the margin. In the present species the postdiscal begins at the costal margin with an isolated, distally displaced spot; the red spots of the tail are double, black, distally pupilled in brown; the submarginal space above them almost unmarked. Guiana to the Amazon.

malta. **Th. malta** Schs. (158 g) is a little larger, above the same, with darker, reddish fringes; beneath browner, not lustrous, the discal streaks more distinct, distally lighter tinged; the postdiscal of the hindwing proximally more broadly bordered by red, at the costal margin rising in a line, the uppermost spot not distally displaced; the submarginal consisting of distinct, darker brown crescents; the red spots of the tail double, but the upper one only half developed, only the one between the median veins black-pupilled. Colombia, Bolivia, Peru.

anthora. **Th. anthora** Hew. (158 g). Above likewise brownish-black with a reddish spot in the anal lobe, beneath darker brownish-grey than the preceding, marked the same as *vesulus*, but the costal-marginal spot of the discal of the hindwing scarcely distally displaced; the submarginal of the hindwing less distinct than in *malta* the red spots of the tail double, both black-pupilled. Guiana to the Amazon.

pennatus. **Th. pennatus** Drc. is allied to the preceding. On the upper surface the proximal margin of the forewing is quite narrow, also the disc of the hindwing dull-lustrous indigo-blue. Beneath the ground-colour is duller, the postdiscal bands narrower, placed more inward, and on the hindwings proximally not bordered by red; there is only one red spot of the tail between the median veins and the triangular, otherwise red filling of the middle angle of the W is replaced here by black colour. The ♀ is above quite dull brown. Amazon.

cerata. **Th. cerata** Hew. (158 g) is easily distinguishable from the others by the dull-lustrous indigo-blue colour of the upper surface, almost without any black margin at all. Beneath the most similar to *vesulus*, still lighter and also lustrous; the submarginal space is not blank as it is there, but feebly marked, close in front of the margin the submarginal crescents are yet filled up by darker small spots. From Guatemala to the Amazon; in the north rarer than in the south. — **palumbes** Drc. is apparently based only on aberrative specimens which are beneath without any postdiscal bands at all. From Cayenne.

pisis. **Th. pisis** Godm. & Salv. (158 d) differs from *cerata* by much darker, purple-black colour above, and more ochreous-yellow colour beneath. Guatemala, Nicaragua, Panama.

pisidula. **Th. pisidula** Drc. (158 h) is above dark indigo-blue with indistinctly defined, narrow, black margins. Beneath darker than *pisis* and of a more olive tinge; on the hindwings there is only between the median veins a dull red spot which is very much smaller; the submarginal line is very distinctly marked on both wings. Brazil (Rio Grande, Sa. Catharina).

tanais. **Th. tanais** Godm. & Salv. (158 h) exactly resembles *pisidula*, but beneath there is instead of the red spot of the tail a second, bluish-grey, oval spot, ringed somewhat lighter blue, and the fine, black, marginal small triangles are more prominent. Panama, Colombia (Rio Dagua).

instita. **Th. instita** Drc. is above plainly dark-brown, beneath marked exactly like *pisidula*, only somewhat darker. Brazil.

puppius. **Th. puppius** Godm. & Salv. is above likewise deep blackish-brown, the wings shorter, the apex more pointed. Beneath marked like *pisis* and *cerata*, but the ground-colour is dirty brown, without a yellow tinge. British Guiana.

meleager. **Th. meleager** Drc. is perhaps only a southern local form of *pisis*; above just as purple-black, but beneath dark greenish-grey, the red spots darker and smaller, their black pupils larger and deeper black. Surinam.

cissusa. **Th. cissusa** Hew. (158 h) is smaller, above blackish-brown, at the costal and proximal margin of the hindwing blue with a blue-white marginal line and small blackish spots before it. Beneath like *vesulus*. Guiana, Amazon, Bolivia.

Th. trebula Hew. (158 h). Forewings above brown-black, hindwings of a brilliant blue with moderately *trebula*. broad black costal and distal margins. Beneath marked as *vesulus* (158 g) on a purely olive-yellow, lustrous ground. From Mexico to Colombia and the Amazon.

Th. orcilla Hew. (158 h). The ♂ is above brown, the ♀ at the proximal margin of the forewing, and *orcilla*. on the hindwing of a brilliant azure colour, in the anal direction with a bluish-white subterminal line and small black spots before it. (HEWITSON mixed up the sexes!) On the underside the colour is lustrous light reddish-brown, marked as *vesulus*, but the postdiscal bands are proximally broader orange-red. Ecuador, Colombia, Bolivia.

Th. gizela Hew. (158 i) is above indigo-black, like *pisidula* (158 h), beneath reddish grey-brown with a *gizela*. brown cell-end streak and markings, as in *orcilla*, likewise with postdiscal bands broadly bordered with red. Bolivia.

Th. panamensis sp. nov. (158 i) is the most similar to *pisidula* (158 h), but it is above of a light greenish *panamen-* steel-blue, with a strong lustre, black margins of the same extent as in *pisidula*; the ♀ is of a duller grey-blue. *sis*. Beneath more purely grey, with a slight lustre, the linear marking stronger, particularly the white bordering more pronounced, the submarginal lunae more distinct, the red spot of the tail very large, so is the light-blue spot beside it. Panama.

Th. pupilla sp. nov. (158 i) is above black-brown, towards the base with a slight blue-grey tint, on *pupilla*. the hindwing with a large red anal spot being bordered at first by black, then by white; beneath brown-grey, the lines like in the preceding, but finer; the submarginal lunae almost extinct, from the upper median vein to the proximal margin distinct as an entirely straight black line being removed far inward and touching the dents of the postdiscal band. The red spot of the tail and the anal spot extremely large, connected by a broad red bridge, the black pupil of the spot of the tail very small, strigiform. Guiana to Colombia and Bolivia.

Th. gentilla Schs. is above dull grey-blue, not metallic, with a fine black distal margin. Beneath light *gentilla*. grey-brown, marked like *pisidula*, but with whitish cell-end streaks; the W is filled up with black towards the border, both the anal spots connected by a red bridge, the spot of the tail very large black, containing only a small red crescent, the anal spot quite black. Expanse of wings: 20 mm. Petropolis in South Brazil.

Th. aprica Mschlr. may probably belong hereto. The black-brown forewings are of a violet-blue *aprica*. gloss along the proximal margin, the hindwings in the disc; at the anal angle there is a red spot. Beneath dark yellowish-grey, the markings as usually; the postdiscal band of the hindwing proximally black, distally white, without any orange-red; the submarginal band is a whitish dentate line being dark towards the border; between the median veins a large red spot with a black pupil; the grey spot before the anal angle is bordered towards the base by an arcuate red spot, the lower filling of the middle sides of the W being black. Paramaribo.

105. Teucris-Group.

Th. teucris Hew. (158 i). Above dark-brown, at the anal angle of the hindwing a white subterminal *teucris*. line and two minute white spots. Beneath grey, towards the border somewhat browner; the postdiscal band composed of white small spots being proximally bordered with brown, like the submarginal bands. At the costal and anal angles of the hindwing broad carmine spots. Amazon.

Th. milto Godm. & Salv. (158 i) is similar, but above tinted blue, the hindwings dusted with blue. *milto*. Beneath the postdiscal band is placed much nearer to the border, while on the forewing it is more indistinct. Panama.

Th. tegula Hew. (158 i) is more grey-brown than *teucris* and exhibits a quite uncommonly large, dark *tegula*. brown scent-spot in the cell. Beneath very much like *teucris*, recognizable by a small white spot in the middle of the costal margin of the hindwing. Amazon.

Th. casmilla Hew. (158 i, k) has the same enormous scent-spot as the preceding, being continued for *casmilla*. some distance behind the cell, on the forewing with an indigo-blue tint, and the hindwing in the proximal-marginal half strewn with a dull blue, so that the veins, a cell-end streak and small submarginal spots remain black. Beneath light olive-brown, with very much duller markings, the white having almost disappeared; between the two submarginal bands there is some light blue dusting. Brazil (Rio Grande, Sa. Catharina).

106. Ledaea-Group.

Th. ledaea Hew. (158 l) is above dark-brown, in the proximal half of the forewing and on the hindwing *ledaea*. except the costal margin and apex grey-blue; the anal spot being bordered with white and two small spots of the tail black-brown. Beneath yellowish-brown with similarly shaped postdiscal bands as in the *vesulus*-group, at the anal angle extensively orange-yellow, the anal spot and the spot on the tail black, the space between brown, dusted with white. Amazon.

caesaries. **Th. caesaries** Drc. (158 l) is smaller, above indigo-blue with a broad black apex; beneath more steel-grey, the yellow anal area more extensive, the postdiscal bands removed more inward, proximally and in the angle of the W also distally bordered with orange-reddish; a double cell-streak. This species is undoubtedly only a modification of the *vesulus*-group. British Guiana, Colombia.

107. Mantica-Group.

mantica. **Th. mantica** Drc. (158 l) is an isolated species. Above dark brown, at the proximal margin, and in the disc of the hindwing dull grey-blue with a large oval, dull black scent-spot in the cell, bordered with a silky grey; anal lobe spotted orange-red. The ♀ is above much less blue. Beneath light brown, the postdiscal band composed of small separate black spots being distally white, the second of the topmost spots of the hindwing removed far inward; a submarginal broad red band. Brazil (Chapada Campo).

108. Celmus-Group.

celmus. **Th. celmus** Cr. (= *echion* var. *Godt.*, *pereza* *Btlr.*) (158 l) is a small delicate species, above with a violet lustrous light blue, with a broad brownish-grey costal margin, apex and distal margin, on the hindwings only very narrowly bordered with white fringes and a white marginal line at the anal angle. Beneath white, the postdiscal band orange brownish, distally bordered with brown, on the forewing coherent, on the hindwing broken up into 5 spots; at the base of the costal margin another 6th spot. The submarginal band is composed of brown crescentiform streaks, being on the forewing more coherent than on the hindwing, here at the anal angle with a small yellow spot, between the median veins a somewhat larger black-pupilled spot. The ♀ is above of a plain brown colour. Distributed from Mexico as far as South Brazil.

lollia. **Th. lollia** Godm. & Salv. (158 l) is above deep violettish blue, with a somewhat more narrowly black apex and costal margin, beneath more grey-white, whereby the submarginal band is proximally bordered with a brighter white, the markings otherwise very similar except the absence of the basal spot on the hindwing. Mexico to Costa Rica.

seudiga. **Th. seudiga** Hew. (158 l) differs by a still narrower black apex and distal margin, of the costal margin only the base is black, the other part of it like the wing deep ultramarine. The under surface is of a still darker ashy grey, at the cell-end a black fine streak-spot, otherwise marked as *lollia*, the discal bands and spots, however, of a deeper copper-red. Brazil, Bolivia.

jambe. **Th. jambe** Godm. & Salv. (158 l) has above a much broader black-brown apex and costal margin than the preceding, something like in *celmus*, so that the cell grows dark, too. Beneath marked and coloured like *seudiga*; the dark submarginal area grows broader, so that two undulate white lunular lines become more prominent on each side of it.

lucagus. **Th. lucagus** Godm. & Salv. (158 l) is likewise similar, above more extensively blue as far as the costal margin. Beneath the ground-colour is somewhat more brownish, the dark submarginal band is situate nearer to the border, the red anal spots greatly reduced. Mexico.

asa. **Th. asa** Hew. (158 k) is above of the same blue as *celmus* (158 k), but in the whole distal half of the forewing black-brown, in the centre of a darker lustre and with a dark brown scent-spot in the middle of the cell; beneath like *jambe*, the proximal white submarginal series of lunae on the hindwing above the upper and beneath the lower radial vein protruding far inward. Amazon, Colombia.

carnica. **Th. carnica** Hew. (158 k) is beneath coloured and marked like *asa*, the proximal submarginal band, however, runs much more regularly. Above deep violet-blue with very narrow black margins. The diminutive animal is smaller on the whole, only northern specimens are somewhat larger and have broader wings. Mexico to the Amazon.

emendatus. **Th. emendatus** Drc. (158 k) is allied to the preceding, above lighter and more brilliant blue, the apex of the forewing broader and more uniformly black, the costal margin and apex of the hindwing, however, narrower than in *carnica*. Beneath like *carnica*, but the white submarginal lunae are more prominent. Bolivia.

calchinia. **Th. calchinia** Hew. (158 k). Above blue with a broad black-brown apex and costal margin of the forewing. Beneath whitish, similarly marked as the preceding, with fine cell-end streaks and on the hindwing a somewhat more coherent postdiscal band; the submarginal bands are composed of dull grey-brown lunular lines; at the anal angle 2 minute orange-yellow spots. Amazon.

hyccara. **Th. hyccara** Hew. (158 k) is above very similar, at the anal angle of the hindwing the minute black spots of *calchinia* are absent. Beneath light grey-brownish; on the forewings the postdiscal band which runs straight and equally broad to the proximal margin, is distally bordered with white, while in *calchinia* it is bent somewhat outward and behind the cell broader than at the costal margin. The ♀ is above brown. Amazon.

uzza. **Th. uzza** Hew. (158 k) is above lighter blue, beneath distinguishable by 2 or 3 small basal brown punctiform spots on the hindwings, and extensive red-brownish, small submarginal spots being distally bordered with white. Brazil.

Th. dicaea *Hew.* (= *farmina* *Schs.*) (159 b) is above more extensively blue than the preceding, the *dicaea*. costal margin remains blue. Beneath darker grey without the cell-end streaks; the postdiscal bands dark red, distally bordered with black, then with black, on the hindwings broken up into spots, between the radial veins removed outward. Brazil (Paraná).

Th. dicina *sp. nov.* (159 b) differs above by the deep violet colour and a square black scent-spot in *dicina*. the cell-end, the apex and distal margin narrowly black-brown. Beneath like *dicaea*, but with a much darker, almost blackish-grey ground-colour; both wings exhibit white cell-streaks being on both sides bordered with black. Colombia.

109. Celida-Group.

Th. celida *Luc.* (159 b) is above opalescent sky-blue, the broad apex and a fine marginal line on the *celida*. hindwing black-brown, a rather large scent-spot behind the cell black. Beneath brownish-grey with fine irregularly undulate transverse lines behind the middle, on the hindwings also before the middle, and with fine discal streaks; before the border a fine lunular line, between the tails an orange spot, the anal-angular spot black, strewn with blue. Cuba.

Th. tera *Hew.* (159 b) is closely allied, with broader wings, above more violet; the under surface is *tera*. white, the lines similar, but the basal one is absent on the hindwing, the postdiscal band is proximally bordered with reddish-yellow, the discal streaks are double, at the anal angle there is another small orange spot. Panama, Colombia, Peru.

Th. celona *Hew.* (159 b) is much smaller, of a more radiant blue and more narrowly bordered with *celona*. black, so that the black scent-spot stands out isolated in the blue area. Beneath very much like *tera*, the postdiscal band more coherent. Brazil.

Th. chilica *Schs.*, being unknown to me, is described as follows: forewing blackish, cell and inner- *chilica*. marginal area metallic blue with a large black round scent-spot behind the cell; hindwing metallic blue, costal margin and proximal margin grey, analwards a white marginal line. Beneath whitish with dark cell-streaks, the postdiscal band undulate, red-brown, on the hindwing broken up into spots, distally bordered with black, and with a distinct W towards the proximal margin; small subterminal brown lunae are interrupted between the tails by an ochreous-yellow spot pupilled in black. Expanse of wings: 19 mm. Castro (Paraná).

110. Alda-Group.

Th. alda *Hew.* (159 b). Upper surface violettish-blue, with a small round dark brown scent-spot *alda*. behind the cell and a broad black-brown costal and distal margin. Beneath light reddish-brown with fine cell-end streaks; the postdiscal band similar as in the *celmus*-group, but coherent also on the hindwings, here also with some small basal spots, the one at the costal margin being the largest; the ♀ is above brown. Amazon.

Th. hesychia *Godm. & Salv.* (159 c) is allied, above of a puer violet, beneath without the basal spots *hesychia*. of the hindwing. Costa Rica.

Th. hicetas *Godm. & Salv.* (159 c) is above much darker purple violet, the scent-spot deep velvety *hicetas*. black. Beneath dark brown-grey, on the forewing in the middle of the cell with a dark brown transverse streak, at the cell-end a double streak filled up with whitish; the hindwing exhibits 3 dark basal spots; distal margin with whitish and dark clouds. Mexico.

Th. pactus *Godm. & Salv.* (159 c) greatly resembles *hicetas*, the wings are more purple, beneath the *pactus*. discal lines much broader, scarcely bordered with brown; towards the border there are more intense whitish and dark clouds.

111. Phrutus-Group.

Th. phrutus *Hbn.* (= *fidentia* *Hew.*) (159 c). Forewing brown with a large darker scent-spot; in the *phrutus*. ♂ in the larger, proximal half of the hindwing blue, metallic, in the ♀ the whole hindwing and an inner-marginal stripe of the forewing is duller and more whitish lilac-blue with 2 small black spots at the anal angle; beneath variable, brown, in the distal third whitish, particularly on the hindwing strewn over with carmine, with 2 dentate red lines and a similar cell-streak. Guiana, Amazon, South Peru.

Th. inoa *G. & S.* (159 c) is similar, but above almost white, and beneath the red clouding of *inoa*. the border is absent. Mexico.

Th. zilda *Hew.* (159 c) is above like *phrutus*, the blue lighter and more reduced. Beneath the hind- *zilda*. wings are more extensively whitish and the 2 red dentate lines combined into a middle line; the red strewing of the marginal area is absent. Panama. Costa Rica, Colombia, Brazil.

Th. cruenta *Gosse* is larger than *phrutus*, above very similar, the hindwings more violet in the *cruenta*. disc; fringes brown; the underside is much lighter brown, the red strewing of the margin not so intense, the marking otherwise almost the same. Brazil.

- vena.* **Th. vena** *Drc.* (159 d) differs from the preceding by orange-red fringes, beneath by a straighter post-discal band of the forewing. North West Peru.
- sanguinalis.* **Th. sanguinalis** *Burm.* is above quite grey-brown, similar to the following, without any tails with a slightly extended anal angle of the hindwing and whitish-dotted fringes; the under surface is whitish, with brown clouds and with small spots and bands of carmine. Argentina, Paraguay.
- gamma.* **Th. gamma** *Druce* (159 d) is similarly dull grey-brown, at the proximal margin of the forewing and in the larger proximal half of the hindwing dull grey-blue with orange-red fringes. Beneath brown, in the marginal area of the forewing whitish, strewn with carmine, with a white discal streak; the hindwings exhibit a white median band and at the costal base a small spot bordered with red, in the shape of a γ ; marginal half likewise strewn with red. Argentina.
- megacles.* **Th. megacles** *Cr.* (= *adria* *Hew.*) (159 d). Above black-brown with a small darker scent-spot; the proximal margin of the hindwing is white, so is a marginal line before the anal region. In the ♀ the proximal margin of the forewing and the whole hindwing are of a pure white, the marking beneath showing slightly through. Beneath white, the forewing in the middle clouded brown-grey, with carmine markings like in *zilda* (159 c), but besides with 4 red, small basal spots on the hindwing. Venezuela, Surinam, Amazon.
- coronta.* **Th. coronta** *Hew.* (159 d) is a very much larger species. Above black-brown with a large black scent-spot in the cell, white at the proximal margin of the forewing and in the disc of the hindwing there is a dull blue. Beneath brownish-grey, at the basal half darker, at the costal angle of the hindwing whitish. Both wings exhibit red discal streaks, behind them a band of interrupted, small red spots, distally bordered with white, on the hindwing besides with 5 or 6 small red basal spots; small brown submarginal spots are on both sides bordered with white; anal spots orange. Mexico to Guiana.
- maevia.* **Th. maevia** *Godm. & Salv.* (159 c) is very similar, much smaller, of a duller bluish-grey, the abdomen above reddish-yellow. Beneath dark grey, uniformly strewn with a light grey, otherwise almost the same markings. Mexico to Costa Rica.

112. Una-Group.

- una.* **Th. una** *Hew.* (= *lenis* *Capr.*) (159 d). Above grey-brown, in the ♂ with a narrow bluish inner-marginal stripe of the forewing and a white inner-marginal half of the hindwing, with a white marginal line and a black spot at the anal angle, the forewings exhibit an indistinctly darker cell-spot, the ♀ is on the forewing more extensively bluish as far as up to the cell or even into it; hindwing all white with a brownish-grey costal margin and small black spots in front of the anal margin. Beneath white, the scheme of markings similar to *hicetas* (159 c), but the small spots are composed of brown double streaks which are mostly filled up with some brownish. Brazil, Colombia, Venezuela.
- furcifer.* **Th. furcifer** *Drc.* is closely allied and above just the same, on the hindwings only coloured somewhat more greyish-blue. Beneath light grey, with bands and spots bordered with white and arranged like in *una*, which, however, are but slightly darker than the ground. The small, red-yellow anal spots are absent altogether. Espiritu Santo.
- scopas.* **Th. scopas** *Godm. & Salv.* (159 d). Above coloured like *una*, beneath chalky-white with irregular, light orange macular bands, being doubly bordered with black like in *una*. The distal margin and submarginal lunae darker brownish-grey, the two anal spots rather large, red-yellow, with black pupils. Mexico, Nicaragua.

113. Cleon-Group.

- cleon.* **Th. cleon** *F.* (= *ecbatana* *Hew.*) (159 d). Forewing above dark brown, in the basal half of the proximal margin light violet-blue like the hindwing, with white hair on the proximal margin. Beneath light brown, in the basal area mostly intensely darkened and clouded in grey; both wings exhibit dark cell-end streaks distally bordered by a light tinge. Postdiscal bands broad, dark red-brown, on both sides bordered with blackish, behind it bordered with whitish, projecting below the costal margin on the hindwing, receding in the angle of the lower radial vein and distally mostly with intensely brown-grey clouds. The orange-red anal spots distinct, between them a spot strewn with white. The underside is rather variable in the colour and width of the postdiscal bands. Trinidad, Amazon, Brazil.
- picientia.* **Th. picientia** *Hew.* (= *rubifer* *Drc.*) (159 e) is above unicolorously brown with a reddish spot in the anal lobe. Beneath very much like *cleon*, the ♂ likewise darkened in the basal part, particularly on the hindwing. The postdiscal band of the hindwing is particularly in the ♀ very broad, in the ♂ narrower and distally clouded much more intensely, almost in a blackish brown; the submarginal markings are the same. In the ♂ the hindhead and forehead, as well as the extreme costal base of the forewing are red. The type came from Tapajos, the ♂ having been denoted as *rubifer* in case of specific difference originates from Bogotá, before me there is a couple from the Museu Paulista.
- socia.* **Th. socia** *Hew.* (159 c) is larger than *cleon*, above coloured the same, but besides with a small grey scent-spot at the cell-end. Beneath similarly marked as in the preceding, the postdiscal band of the hindwing projecting almost quadrangulantly between the upper radial veins; the marginal area is profusely strewn with whitish, at the costal angle there is a small red spot. Brazil.
- madie.* **Th. madie** *Weeks* is said to resemble *cleon* (159 d); above the same, only more mouse-coloured, instead of dark brown. Beneath light mouse-coloured, likewise with a lighter marginal area and similar post-

disal bands, running retilinearly on the hindwing from the costal margin to the lower median vein. Expanse of wings: 27 mm. Described from Venezuela (Suapure).

Th. mathewi Hew. (159 e) does not differ above from *cleon*, while the ground-colour beneath is lighter, *mathewi*. less clouded towards the margin, the postdisal bands being much finer and more regular. Mexico to Panama.

Th. verbenaca Drc. (159 e) is above darker and more extensively blue, inclusive of the cell of *verbenaca*. the forewing, with a black spot behind it; anal lobe orange. Beneath dull lustrous greenish-grey, the postdisal band on the forewing only little visible and on the hindwing very fine and narrow, only analwards proximally with some reddish scales, beginning at the costal margin with a distally removed spot; the red anal spots very large. Brazil.

Th. sesara Godm. & Salv. is allied to *mathewi* (159 e) and has the same markings beneath, but above it *sesara*. is entirely brownish-black, not blue, the hindwing with 3 dark submarginal spots at the anal angle. Colombia.

Th. normahal Schs. (159 e) likewise differs little from *mathewi*; above the forewings are quite *normahal*. brown, only at the proximal margin with some lilac-white hairs, the hindwings being haired lilac-white only in the proximal halves; in front of the black marginal line there is a lilac-white line. On the under surface the postdisal band on the forewing extends only to the lower median vein and is not distally bordered by white. Expanse of wings: 21 mm. Peru.

Th. chonida Hew. (159 e) differs above by its dull grey-brown colour being more blue-grey in the inner *chonida*. space, and a very large black discal spot, the hindwing being white in the anal half, with small, black ante-marginal spots, the spot between the tails and the anal lobe being bordered with orange. Beneath lighter than *mathewi*, the postdisal band on the hindwing straighter and not so much curved to the proximal margin. Mexico.

Th. leda Edw. is above black-brown, the forewing in the basal half of the proximal margin and the *leda*. hindwing at the apex blue-grey; at the anal angle two black-brown spots, and in the middle of the forewing a black discal spot; beneath grey, similarly marked as *mathewi*, the postdisal bands proximally bordered with red-yellow, distally with white, on the hindwings more strongly undulate; the submarginal band dark, on both sides bordered with white, with two red-yellow, black-pupilled anal spots. Arizona, Mexico.

Th. clytie Edw. (159 e) is above whitish lilac-blue with a broad black apex and small black anal spots *clytie*. of the hindwing; beneath white, marked very much like *leda*, but the lines much finer and feebler, without any orange. Texas, Arizona.

Th. ines Edw. (159 e) greatly resembles *clytie*, but it is smaller, the forewing somewhat more *ines*. extensively blue, the hindwing with a blackish costal region, beneath slate-coloured with more numerous transverse lines and small orange anal spots, and a darker median shade of the hindwing. Arizona.

Th. avalona Wright (159 f) seems to be allied to *ines*; above brown-grey, towards the base a little *avalona*. more bluish, small dark marginal spots on the hindwing are proximally bordered with a lighter tinge. Beneath more of the colour of a grey horse with a very indistinct marking. California.

Th. cinniana Hew. (159 f). Forewing black-brown, hindwing dull blue, in the ♂ with a dark costal *cinniana*. area; at the anal angle two small black spots. Beneath light brownish-grey, the postdisal bands proximally broadly bordered with red, the spots of the tails double like in the *vesulus*-group (p. 800), connected with the red anal spot by a red bridge proximally to the white-dusted spot. Amazon.

Th. plumans Drc. may be only a local race of the preceding, the blue having almost disappeared *plumans*. above and being noticeable only at the anal margin of the hindwing. Brazil (Chapada Campo).

114. Azia-Group.

Th. azia Hew. (= *nipona* Hew.) (159 f) and its allies are characterized by having only 1 little tail *azia*. at the lower median vein and by a dark scent-spot in the cell of the forewing. Above brown, at the proximal margin of the hindwing in the ♀ narrowly bluish-white with dark, small marginal spots in the anal part. Beneath light grey, marked very much like *dicaea* (159 b) the fine orange-red postdisal band of the hindwing projecting distally at the costal margin and between the radial veins. The 2 red anal spots are large. Mexico to Brazil and Paraguay.

Th. centuncula sp. nov. (159 f) is somewhat smaller, above the same; beneath the ground-colour *centuncula*. is of a carmine or lilac tinge, the postdisal band is much finer, carmine, on the hindwing broken up into spots and much more strongly interrupted, projecting the farthest towards the base between the median veins and below the subcostal vein, the farthest towards the margin between the lower radials; the sharply defined, brown-grey submarginal lunae almost form right angles and are on both sides bordered by lilac-white; the marginal line is scarlet on both wings, the fringes white, on the forewings somewhat brownish. The small anal spots are reduced, the spot of the tail is only a minute red dot. Forehead, hindhead, and costal base of the forewing brownish-red. 1 ♀ from São Paulo.

Th. volumen Drc. is above uniformly dull brown with a small red spot in the anal lobe, beneath *volumen*. coloured and marked as *picentia* (159 e), but it has only one small tail. Brazil (Rio; Chapada Campo). Expanse of wings: 18 mm.

- vidulus*. **Th. vidulus** Drc. The forewings are above dull black, the hindwings light blue, warming towards the base into black like at the costal margin and apex. Beneath like *cinniana* (159 f), but the ground-colour is darker and the red band of the hindwing much broader, in front of it two parallel red discal streaks. Expanse of wings: 34 mm, thus very large. Ecuador.
- rufofusca*. **Th. rufofusca** Hew. (= *lucaris* Weeks) (159 f) is above brown, in the ♂ with an indistinct, large, dark discal spot; before the anal margin of the hindwing a black line being proximally white, before it 3 or 4 small black spots, 2 or 3 of which are inwardly spotted orange. Beneath light grey, marked very much like *azia*, but the postdiscal band has regular orange demi-arcs; the anal spots are minute, orange. Mexico to Brazil, also in the West Indies.

115. Badaca-Group.

- badaca*. **Th. badaca** Hew. (= *collucia* Hew.) (159 f) is above black-brown, in the ♀ towards the base tinted grey-blue. Beneath reddish brown-grey, the postdiscal bands brown, particularly on the hindwings bordered proximally with red, distally with white; the dark, undulate submarginal band is on both sides bordered with a light colour, between it and the postdiscal band on the hindwing dark clouds; the two red anal spots are large. Panama, Brazil, Colombia.
- ceromia*. **Th. ceromia** Hew. (= *suada* Hew.) (159 g) is above the same, beneath more red-brown, the postdiscal bands are proximally not bordered with red or orange, the dark clouds beyond them are absent on the hindwing. Amazon, Bolivia.
- opacitas*. **Th. opacitas** Drc. is closely allied to *ceromia*, above in the disc with a slight copper lustre; beneath the same, but the black anal spots are more prominent, and the postdiscal band is proximally somewhat orange. Forehead, collar, and costal base of the forewing copper-red. Mexico.
- canus*. **Th. canus** Drc. (159 g) has above in the disc a still more pronounced copper lustre; beneath lighter, with a more olive tinge, the postdiscal band of the hindwing broader light orange, the red spot of the tail smaller and crescentiform; easily distinguishable from the preceding species with black palpi by the palpi being almost entirely white. Mexico to the Amazon.
- nubes*. **Th. nubes** Drc. is smaller, the shape of the hindwing not so long-stretched, shorter and rounder; the ground-colour is above blacker, in the disc with a coppery lustre, beneath more olive, the postdiscal bands placed nearer to the margin. Trinidad.
- sangala*. **Th. sangala** Hew. (= *autoclea* Hew.) (159 g). Above like *ceromia*, in both sexes brown, beneath brown, the postdiscal bands of a bright orange-red, distally bordered sharply with white, particularly broad in the ♀, at the costal margin of the forewing with a spot being distally removed and bordered also proximally with brown and then somewhat with whitish; the anal spots are large, of a bright red, the submarginal spots rusty-brownish, towards the costal angle sometimes orange, distinctly bordered with grey-white on both sides. Nicaragua, Venezuela to Bolivia.
- politus*. **Th. politus** Drc. (159 g) is above coloured like *sangala*, but the ♀ dull lavender-blue on the hindwings and narrowly also at the proximal margin of the forewing. Beneath like *sangala*, but the red spot of the tail is removed nearer to the distal margin. Widely distributed in Guatemala, Guiana, Colombia, Amazon, Trinidad.
- syllis*. **Th. syllis** G. & S. (159 g) is closely allied to *ceromia*, but the hindwings are above scaled in blue, and beneath the postdiscal band is broadly bordered with red; the red spot of the tail is proximally bordered with an ochreous yellow, extended as far as the anal angle. Mexico, Guatemala, Nicaragua, Colombia, Amazon.
- amphrade*. **Th. amphrade** Schs. (159 g) of which only the ♀ is known hitherto looks above like *politus*, only darker slate-blue, on the forewing as far as up to the cell; beneath the postdiscal band is proximally dark brown, not orange, on the forewing very indistinct, on the hindwing it runs from the costal margin straight to the lower radial; the spot on the tail and the anal spot are very indistinct reddish. Costa Rica.

116. Melinus-Group. (*Uranotes* Scudd.)

- melinus*. **Th. melinus** Hbn. (= *hyperici* Bsd., *favonius* Bsd., *humuli* Harris, *pan* Harris, *silenus* Dbl., *pudica* Edw.) (159 g). Above brown, the hindwing at the anal angle with a double, blue-white marginal line, between, beginning from the median veins, with small black veins, the uppermost proximally orange-red, like the anal lobe. Beneath light grey, the postdiscal band shaped very much like in *mathevi* (159 e), but finer and at the anal angle with two large orange spots. North America to Venezuela. — **sabinus** Fldr. is probably only the southern form of the preceding, with more extensive and more intensely red anal spots beneath, touching the postdiscal band; the species, however, is on the whole very variable. From Colombia and Brazil.
- valentina*. **Th. valentina** Berg differs from *melinus* by more irregular rusty-brown postdiscal bands being on the hindwing interrupted in some places, beginning much farther distally at the costal margin, and by a red-brown, not black marginal line; on the hindwing there are two very distinct rows of white submarginal lunae. From Argentina.

Th. promissa *Mschlr.* seems to me to belong here. Above brown, at the proximal margin of the forewing and on the hindwing, except the costal part, whitish grey, between the median veins and at the anal angle with orange spots; beneath marked like *valentina*, the ground-colour is described to be yellowish white-grey, the postdiscal band is proximally not bordered with orange. Paramaribo.

117. *Bebrycia*-Group.

Th. bebrycia *Hew.* (159 h) is above blackish-brown, with a large black cell-spot, on the hindwing with a black spot of the tail, being bordered with orange. Beneath grey-brown, on the hindwing with a lilac shine, the postdiscal band black-brown, proximally bordered with red, distally with a pure white; on the hindwing the costal-marginal spot and the spots between the radial veins are projecting farther towards the margin. Mexico, Guatemala.

Th. serapio *Godm. & Salv.* (159 g, h) differs by the violet-blue colour along the proximal margin of the forewing and in the inner-marginal half and along the distal margin of the hindwing; beneath the postdiscal band is in the middle jet-black, proximally red-brown, distally white. Mexico, Panama.

Th. azuba *Hew.* (159 h). Above grey-brown, on the forewing with a large black discal spot, the hindwing in the larger proximal half dull violet-blue with a black spot between the median veins. Beneath like *serapio*, but the postdiscal band on the hindwing is more broken up into spots and of a lighter orange. Brazil (Rio Grande, São Paulo).

Th. tella *Schs.* probably belongs here; above black-brown, the hindwing below the lower median vein dusted with blue. Beneath brown-grey, the postdiscal band reddish brown, distally white, on the forewing as far as the lower median vein, then removed more inward, on the hindwing irregularly broken; before the border there are large submarginal brown spots, being partly surrounded by black; at the anal angle a small black spot. Novo Friburgo.

Th. lemnos *Drc.* is closely allied to *serapio* (159 g, h); on the hindwing the blue is more extensive, so that the whole cell is blue; beneath the postmedian bands are more irregular and finer, more like lines. Inner Colombia.

Th. echinita *Schs.* is above dull blue-grey, the apex of the forewing and the distal margin blackish, on the hindwing towards the anal region a white line, in front of which there are triangular black spots. Beneath grey, the postdiscal band red-brown, distally white, below the lower median vein proximally angled, on the hindwing irregular; small submarginal lunular spots, distally dusted with a reddish brown, the most densely between the median veins and here pupilled black. Mexico.

Th. thenca *Mschlr.* (160 d) may yet be placed here. Above brown with a greyish tinge, the marginal line dark brown, on the hindwing analwards bordered with white. Beneath light grey-brownish; the postdiscal band is dark brown, distally white, on the forewing undulate, removed somewhat more towards the margin from the costal margin to the lower radial, on the hindwing always projecting in one cell, receding somewhat in the next; the submarginal band is grey-brown, curved, towards the base obsoletely whitish; between the median veins and at the anal angle an orange spot with a triangular black pupil. Length of forewings: 13 mm. Surinam.

118. *Oreala*-Group.

Th. oreala *Hew.* (159 h) is a very variable insect, particularly as to its size. The ♂ is above violet-blue, the apex of the forewing and costal margin of the hindwing black-brown with a large black scent-spot in and behind the cell, in the basal part of the cell there are before it brown scales. Beneath brown-grey, towards the apex on the forewing and hindwing more extensively dusted white, with series of orange-brownish spots being at first encircled by black then by white, also in the basal part of the hindwing; submarginal brownish lunar streaks and the usual orange anal spots. The ♀ is of a duller and more reduced blue, with black small marginal spots on the upperside of the hindwing. From Brazil.

Th. lucena *Hew.* (159 h) is somewhat smaller, the blue on the hindwing confined to a narrow inner-marginal stripe; the hindwing exhibits also in the ♂ black marginal spots. Beneath scarcely different. Venezuela.

Th. canitus *Drc.* (159 i) is much smaller, above black-brown, the hindwing in the larger proximal half dull violet with two small black marginal spots; the under surface is marked almost like in *oreala*. Paraguay.

119. *Basalides*-Group.

Th. basalides *Hbn.* (= *ziba* *Hew.*) (159 i) is above black-brown, with a large black discal spot, and uncommonly variable with respect to the extension of the blue colour: mostly two very narrow stripes along the median and submedian on the forewing and in the disc of the hindwing, so that the cell is yet blue, whereas the space between the radial veins is black; all the blue colour, however, may also be absent altogether; before the distal margin of the hindwing there are black spots, the largest of which is between the median veins; if the blue is absent, mostly 1 or 2 of them are above bordered with orange. Beneath very much like *serapio* (159 h),

but besides with 2 or 3 small red basal spots on the hindwing; the postdiscal band is here broken up into small spots. The ♀ is all brown, on the hindwing with bluish-white, small submarginal lunae, being partly double behind the orange spot. Most widely distributed and mostly common, from Mexico to South East Brazil.

arola. **Th. arola** Hew. (159 i) is above blackish-brown, in the basal half of the proximal margin of the forewing and on the hindwing dull lilac-blue with two small black spots before the anal margin. Beneath similar, distinguished by cell-end streaks, the postdiscal band being placed more proximally, the two uppermost small spots of which are placed still farther towards the base in the hindwing, and by 4 larger basal spots. Brazil.

cardus. **Th. cardus** Hew. (159 i, k) is above of a duller colouring and smaller than *arola*, while it differs beneath by its white ground-colour; the macular markings being arranged similarly as in *arola* are light brownish, distally bordered at first by brown then by white; the ♀ is more brownish beneath, and above plainly brown, only faintly tinged blue with 3 small white spots at the distal margin of the hindwing. Brazil.

tigonia. **Th. tigonia** Schs. resembles *basalides* (159 i). Above brown, on the forewings with two narrow, parallel blue stripes at the proximal margin, and in the proximal half of the hindwing dull blue with black marginal spots, the one between the median veins being above bordered with red. Underneath it differs by plain whitish submarginal small lunae without a darker filling. Peru.

120. Albata-Group.

albata. **Th. albata** Fldr. (159 k) is above grey-brown, with a pale blue tinge at the base of the forewing, the hindwing white, somewhat grey towards the base with minute black antemarginal spots. Beneath white, in the basal half pale grey, on the forewing the bordering between the median veins projects towards the margin while on the hindwing it is irregular. Indistinct double antemarginal rows of lunae. Panama, Colombia, Venezuela.

sedecia. **Th. sedecia** Hew. (159 k) is very similar, without any blue at the base of the forewing, with a black distal margin of the hindwing. Beneath the bordering of the grey basal part runs straighter, and at the cell-end there is a white streak; the anal spots are more broadly bordered with red. Mexico, Guatemala.

121. Yojoa-Group.

yojoa. **Th. yojoa** Reak. (= *daraba* Hew., *beroea* Hew.) (159 k). ♂ above brown with a large black scent-spot in the cell and 3 small black spots before the anal margin of the hindwing, fringes whitish. The ♀ has broader wings and a duller colouring, the hindwings are whitish towards the distal margin. Beneath light brownish grey with white cell-streaks and a reddish, distally white postdiscal band being on the hindwing distally removed between the radial veins, proximally below the lower median vein; in the whitish marginal part there are double rows of brownish spots, which are bordered with orange between the median veins and at the anal angle; the hindwing exhibits in the basal part besides a whitish diffuse spot. Widely distributed from Mexico to the Amazon.

alea. **Th. alea** Godm. & Salv. (159 k) is similar, but the hindwings are blue at the distal margin with black submarginal spots. On the under surface the white cell-streaks are absent, the spot of the tail is proximally bordered with reddish-brown. Mexico.

mulucha. **Th. mulucha** Hew. (159 l) is very similar, above like *yojoa*, beneath browner, at the apex of the forewing, in the discal area and at the border of the hindwing white, the postdiscal bands much more strongly broken and composed of small lunar spots, very variable in the intensity of the markings. Guatemala to the Amazon.

thordesa. **Th. thordesa** Hew. (159 l) is considerably larger, beneath almost the same, but above the ♂ is of a lustrous blue with brown margins and an oval red-brown discal spot. The proximal margin of the forewing beneath is faintly tinged blue, the anal spots above bordered with red. Venezuela.

faunalia. **Th. faunalia** Hew. (= *deborrei* Capr.) (159 l). Upper surface brown, in the ♂ with a dark cell-spot, on the hindwing with an analwards white marginal line and 2 or 3 minute black spots before it. Beneath the forewings are light reddish-brown, at the apex whitish with a double row of submarginal spots, in front of which there are 6 dark brown small spots bordered distally by white, proximally somewhat by reddish. Hindwings marked not unlike *mulucha*, but much more irregular and more spotted, with a small black spot on the tail. Amazon, Bolivia. — **dion** Schaller is a species not to be identified, perhaps allied to *faunalia*.

hygela. **Th. hygela** Hew. (159 l) is above deep purple violet with black-brown margins and an almost square black scent-spot at the cell-end; the ♀ is dull brown with a white marginal line in the anal part of the hindwing. Beneath the hindwings resemble those of *faunalia*, though they are still more irregular and more spotted, the forewings are whitish, irregularly clouded brown with large dark brown spots in the middle of the cell and behind it. Brazil, Colombia, Bolivia.

Th. crossaea Hew. (159 l) likewise approximates *faunalia*. Above brown, hindwing towards the *crossaea*. base strewn with blue, before the anal margin with small black spots. Beneath marked similarly to the said species: forewings reddish-brown, at the apex white, clouded brown with 6 dark, distally white spots in front of it. Hindwings whitish, clouded brown, with 4 large dark brown basal spots, cell-streak and interrupted postdiscal macular band like there. Patria not stated.

Th. legota Hew. (159 l) is above brown, at the proximal margin of the forewing and in the larger *legota*. proximal part of the hindwing dull violet-blue. Beneath marked almost like *crossaea*, the forewing with a red-brown cell-end streak and a postdiscal band composed of black double streaks, inside filled up with reddish-brown and outside bordered with white; at the base of the hindwing only 2 spots. Bolivia.

Th. veterator Drc. (159 l) is above dull black-brown, in the basal inner-marginal half of the forewing, *veterator*. and on the hindwing light lilac-blue; scent-spot large, dull, in the distal half of the cell. Beneath marked similarly to *yojoa*, but the ground-colour is much duller brownish without the white admixture, the white cell-streaks and the white shade in the basal area are absent. Paraguay.

122. Bubastus-Group.

Th. bubastus Cr. (= *salona* Hew.) (145 h) is above brown with an indistinct dark brown discal spot *bubastus*. and dark spot at the anal angle of the tailless hindwing. Beneath light reddish-brown, on the hindwing towards the base grey; on both wings with large conical, distally white spots at the border; the postdiscal bands are composed of black-brown small spots being distally bordered with white, and are on the forewing placed very near to the distal margin; in the basal area of the hindwing two spots, the spot of the tail above bordered with red. This tailless form flies in Guiana, Venezuela, Amazon, Brazil, Paraguay, St. Vincent, Dominica, Grenada. — For the tailed form: **eurytulus** Hbn. (= *cybira* Hew., *modesta* Mayn., *ocellifera* Grt., *istapa* Reak., *columella* *eurytulus*. F.) (145 h), occurring in the southern states of North America, in Mexico, Guatemala, Costa Rica, Panama, and in Hayti, Cuba, Jamaica and the Bahamas, a special genus was established: *Callicista* Grote.

Th. sapota Hew. (145 h) entirely resembles above the tailless *bubastus*, beneath it is likewise similar, *sapota*. the ground-colour somewhat darker, the spots being all smaller, more in the shape of streaks, and on the hindwings the basal spots are absent. Peru.

Th. arcula Drc. (145 h) somewhat resembles *sapota* and is tailless, too, but it has quite a different, *arcula*. large, dark scent-spot almost filling up the cell; the hindwing is in the anal half dark violet-blue, which colour extends along the distal margin up to the costal angle. The underside is similar to that of *sapota*, but it is darker purple-brown with white cell-end streaks and a straighter, more coherent postdiscal line and two larger orange anal spots. Paraguay and Argentina.

Th. argona Hew. (= *rana* Schs.) (145 h). Above like *eurytulus* with a smaller scent-spot in the cell; *argona*. at the anal angle of the hindwing there are three larger black-brown spots which are surrounded with grey-blue in the ♂ only traceably in the ♀ much more extensively. Beneath somewhat lighter and browner, the spots rounder, distally bordered with white, on the hindwings proximally with orange; the broad, white submarginal dusting is absent, the anal spots are more orange-red. Brazil, Argentina, Paraguay.

Th. ligia Hew. (145 h) resembles the preceding above in the ♂, but it has some light violettish blue *ligia*. at the proximal margin of the hindwing; the ♀ has more extensively light blue hindwings, and also in the basal half of the proximal margin on the forewing blue dusting. Beneath brownish-grey with cell-end streaks, beneath similar to *eurytulus*, the wings in the distal parts very much clouded brown and dusted white with an orange spot on the tail and a black anal spot. Colombia.

Th. limenia Hew. (145 i). Above similar to the preceding, beneath easily discernible by the postdiscal *limenia*. band of the hindwing losing itself into a line in the anal half and forming a V; the red anal spots, particularly the spot on the tail very large, orange-red and connected by a red bridge above the blue-dusted interspace. Cuba, Jamaica, San Domingo.

Th. angelia Hew. (145 i) is very closely allied to *limenia* and differs above by the red-brown disc in *angelia*. the ♂, beneath by the absence of the basal spots on the hindwing. Cuba, Jamaica.

Th. dominicana Lathy is probably only a modified insular form of the preceding; above the coppery *dominicana*. spot is confined to the basal half of the proximal margin of the forewing, and to traces on the disc of the hindwing; beneath there is a complete postdiscal transverse line which is bordered on the hindwing proximally with red from the upper median vein to the costal margin. Expanse of wings: 23—31 mm. Dominica.

123. *Thius*-Group.

- cestri*. **Th. cestri** *Reak.* (145 i) is characterized by the forewing being somewhat angular on the lower radial vein, the hindwing tailless, with a somewhat protracted anal angle. Above brown with a large black discal spot at the cell-end of the forewing; the hindwing towards the base with blue-grey hair, and between the median veins a small black marginal spot. Fringes white, on the forewing speckled darker. On the under surface the forewing is brown with a whitish apex, the hindwing in the discal area and at the margin whitish with irregular macular stripes and a black small spot between the median veins before the border. In the ♀ the hindwings are above extensively blue. Mexico to Costa Rica.
- cydia*. **Th. cydia** *Hew.* (145 i) is smaller, the ♂ above also blue like the ♀, the latter exhibiting above in the costal part of the hindwing at the apex a large square brown-grey spot. Beneath there is little difference. Brazil, Colombia, Paraguay.
- davara*. **Th. davara** *Hew.* (145 i) does not differ above from *cydia*, it therefore has blue on the hindwings also in the ♂, beneath the hindwings are more whitish, the spots at the base of the hindwing are partly confluent with those of the postdiscal band, on the rusty-yellow forewing the postdiscal band is more coherent. Brazil (São Paulo).
- thius*. **Th. thius** *Hbn.* (= *agra* *Hew.*, *bazochii* *Godt.*, *infrequens* *Weeks*) (145 i, k). Forewings like in the preceding, but less angled, the hindwing except the costal-marginal part quite light lilac-blue, the black marginal spots extremely small. Beneath also marked like the preceding species, the marking, however, is partly covered by brown colour, consisting of a large triangular spot at the costal angle of the hindwing, a similar one in the basal part of the proximal margin, and a small one at the base of the costal margin above it; from the base a light stripe runs along the lower radial vein through the cell to the margin. Brazil, Colombia.

124. *Americensis*-Group.

- americensis*. **Th. americensis** *Blch.* (145 i) is above plainly brown, with whitish grey fringes, without a tail. Beneath light brown, on the forewing with 5 small black postdiscal spots, the hindwing with 2 basal spots and a postdiscal, irregularly curved row of spots, which is analwards proximally somewhat orange; small submarginal brownish spots, at the anal angle and between the median veins spotted orange. Chile.
- tucumana*. **Th. tucumana** *Drc.* (145 k) greatly approximates the preceding, above with some lilac-blue on the hindwing and 3 small black anal spots, beneath just like *americensis*, but at the costal margin of the forewing and across the whole hindwing thickly strewn with grey and brown, so that the markings grow indistinct. Argentina.
- bicolor*. **Th. bicolor** *Phil.* (= *quadrimaculata* *Hew.*) (145 k) is easily discernible above from *americensis* by the large orange discal spots on both wings. Beneath the ground-colour is greyer, in the disc of the forewing likewise orange, otherwise marked like *americensis*. Chile.
- heodes*. **Th. heodes** *Drc.* (145 k) differs from the preceding species by the basal area being dusted with a peculiarly lustrous grey-white on the upper surface of both wings and also at the proximal margin of the forewing; the orange spot of the hindwing is reduced in the ♂, while in the ♀ it is absent altogether. Beneath light brown, strewn with white, marked like *bicolor*, but the postdiscal bands placed nearer to the margin. The ♀ is lighter and almost without any marking. The ♂ is without the dark discal spot exhibited by the preceding species above. Described from North Peru.
- tegaea*. **Th. tegaea** *Hew.* (145 k) we append yet here. Above brown with an orange spot at the anal angle of the forewing and at the border of the hindwing, which is narrower in the ♀; the ♂ exhibits an oval, dark brown scent-spot bordered with a still darker colour. Beneath grey-brown, with dark cell-end streaks and with postdiscal bands composed of black, white-ringed spots, running parallel to the margin; beyond them similar submarginal rows of spots, on both wings analwards distally bordered with orange. From British Guiana and Brazil.
- atrana*. **Th. atrana** *Schs.* (145 k) being allied to the following species may be placed here as a transition. Above brown with a broad red-yellow marginal band of the hindwing. Beneath light grey-brown, on the forewing with three small brown, distally white postdiscal spots; hindwing with a postdiscal row of black lunular spots, being proximally bordered with vermilion, distally with white; black submarginal lunae bordered proximally with white border on a broad vermilion marginal band which projects towards the margin on the ends of the veins and extends from the anal angle to the middle radial; behind there are yet brown marginal lunae and a black marginal line. Expanse of wings: 21 mm. Brazil (Paraná).
- tarania*. **Th. tarania** *Hew.* (145 k, l), a well-known common species, differs in the ♂ at once by the black-brown scent-spot in the cell of the forewing; the orange colour on the hindwing is confined to three small coherent spots at the anal angle, in the cell-spaces between proximally dusted whitish, distally spotted black; the red marginal band of the hindwing beneath, however, extends farther than to the middle radial, mostly even beyond the upper radial. Brazil.

Th. titus *F.* (= *mopsus* *Hbn.*) (145 l) for which the subgenus *Strymon* *Hbn.* could be used is *titus*. above plainly grey-brown, in the ♀ occasionally with traces of red anal spots of the hindwing. Beneath likewise dark brown with a broad red marginal band of the hindwing and smaller, separated spots on the forewings. The larva lives on cherries and plums. In North America widely distributed from Maine to Georgia.

125. Dumenilii-Group. (*Polyniphes* *Kaye.*)

Th. dumenilii *Godt.* (= *argiva* *Hew.*) (145 l) is above white, the apex and costal margin broadly sepia- *dumenilii*. coloured, in the ♂ with a black scent-spot in the cell-end. The ♀ is dusted grey-brownish towards the base, on the hindwing with a fine black marginal line and small black spots before it. Beneath white with reddish-brown transverse lines, a small black, white-ringed costal eye-spot on the hindwing and high submarginal lunae which are pupilled in brownish, between the median veins in black. The ♂ is beneath sometimes without any marking. — In f. **obscura** *Stgr.* the ♀♀ are above monotonously dark brown-grey, whereas the darker ♂ is bluish *obscura*. on the light inner-marginal area of the forewing. Beneath grey-brown with very distinct markings, particularly the distal-marginal eye-spots almost black. Venezuela, Colombia.

Th. tadita *Hew.* (145 l) has a more pointed shape of wings and the white parts above are dull sky-blue; *tadita*. beneath brown-grey, otherwise marked like the preceding. Brazil.

Th. datitia *Jones* (145 l) is very near to the preceding, but it has two tails, and a narrow black border *datitia*. of the hindwings above. Beneath the hindwing exhibits a marginal row of black-pupilled, brown lunae. Paraná.

Th. euptychia *spec. nov.* (145 l) has the shape of *tadita*, but it is all brown with a black scent-spot, *euptychia*. on the hindwing analwards a white border-line and between the median veins a small black spot bordered proximally with a light colour. Beneath the disc of the forewing is rusty yellow, distally brown-grey, the hindwing brown-grey, with the same marking as in the preceding, the costal-marginal eye-spot very large, jet-black, white-ringed, also the spot between the median veins and one above it jet-black, upwards with a golden yellow ring. Described according to a ♂ from the Museu Paulista from South Brazil.

5. Genus: **Theclopsis** *G. & S.*

Differs from the preceding genus by the quinquepartite and unmerged tarsus with claws. The two subcostal veins rise widely separated the 2nd somewhat before the cell-end; the cell itself is uncommonly long with a large scent-spot.

Th. eryx *Cr.* (= *lydus* *Hbn.*, *ingae* *Sepp.*, *lebena* *Hew.*) (145 g) is above metallic ultramarine blue *eryx*. with a black-brown apical half, and a large black discal spot. Beneath lustrous grey-green with brown, distally white postdiscal rows of spots, arranged like in the *vesulus*-group, and with indistinct, small, brown submarginal spots; anal spots red, between them whitish dusting; at the proximal margin of the forewing there is a large black velvety spot partly covered by the costal margin of the hindwing. The ♀ is above dark brown with a dull green-blue disc of the hindwing; beneath more grey-brown with more distinct and brighter markings. Southern specimens have above a more extensive blue and beneath broader red spots. Guiana, Brazil, Ecuador, Peru, and Bolivia.

Th. curtira *Schs.* (145 g) differs little from the preceding. On the upper surface the apex and distal *curtira*. margin, particularly of the hindwing, are broader black, the scent-spot somewhat smaller, more red-brown. Beneath the ground-colour is of a purer grey, only with a slight green lustre, the small submarginal spots form more distinct triangles, proximally bordered with white, the anal spots more orange. Described from Venezuela.

Th. demeia *Hew.* (145 g) is easily separated by the absence of the scent-spot and by the black distal *demeia*. margin being only very narrow; beneath darker, more blackish, with the same markings, but without the black inner-marginal spot of the forewing. Nicaragua, Colombia.

Th. caeus *G. & S.* (145 g) greatly resembles *demeia*, but it has a small crescentiform, brown scent- *caeus*. spot, and beneath the inner-marginal area of the forewing exhibits an intense green lustre; the latter may, according to DRUCE, also be absent in specimens from Colombia and Venezuela; described from Panama.

6. Genus: **Lamprospilus** *Hbn.*

Closely allied to the genus *Thecla* and separated only by few exterior marks, the head and thorax being comparatively very stout, the one species exhibiting small hyaline spots, the other species whitish, thinly scaled, band-like spots on both the wings. The generic separation is scarcely justified.

genius. **L. genius** *Hbn.* (145 f, g) is above brown-black, in the disc with a bluish-grey lustre, on the forewing between and above the median veins with 2 small hyaline spots of a blue opalescence on being exposed to the light laterally; the hindwing exhibits a large opalescent hyaline spot in the cell, below and behind it 2 very small ones. The under surface is bone-coloured, the hyaline spots are of a more intensely blue lustre than above; the basal areas on both wings and a triangular costal-marginal spot on the forewing are dark brown; the post-discal band with a sharp W at the proximal margin; the anal spots and those on the tails reddish-yellow, pupilled black. Surinam to Brazil.

nicetus. **L. nicetus** *Fldr.* (145 g) is more slender, the spots of a dull white, only little transparent, more band-like. Beneath dark brown with white transverse lines, the one on the hindwing very broad, similar as in *Th. teatae*, the orange anal markings very extensive. From Colombia.

II. Group: Chrysophanini.

7. Genus: **Chrysophanus** *Dbl.*

The nearctic flame-coloured lepidoptera do not differ essentially from the palearctic forms: we also find here nearly uniformly large, above golden-red or purple-violet species. The undersides likewise exhibit designs of markings and colourings entirely analogous to the well-known species of the eastern fauna. The biological conditions are also conforming to it, the habits of the larva living on *Rumex* etc. A characteristic mark for the separation of the group from the *Theclini* is the 3-branched subcostal, which they share with the *Lycaenini*.

Otherwise the venation exhibits few differences; on the forewing the discocellular is almost quite absent. On the hindwing the anal angle is mostly somewhat pointedly protracted, and the hindwing is often extended at the lower median vein into a small short tail. As to the habits compare what has been said in the Palearctic Part Vol. I., p. 281.

This genus has likewise been divided by SCUDDER into a number of other genera which, however, are only to be regarded as subdivisions, their names being, therefore, only shortly mentioned.

1. Subgenus: **Tharsalea** *Scudd.*

arota. **Ch. arota** *Bsd.* (145 a). The ♂ is above purple with a violet lustre and small diaphanous spots beneath, the ♀ yellow-red, spotted black with darkened basal halves and margins. The underside is light grey, in the ♀ on the disc of the forewing yellow-reddish; the hindwing exhibits beside the spots a fine black, postdiscal, dentate line, behind it a broad, whitish submarginal band. California. — The larva divergently lives on *Ribes*.

virginiensis. **Ch. virginiensis** *Edw.* (145 a) is on an average somewhat larger, above almost the same, beneath darker grey, more coarsely spotted, and with distinct white submarginal lunae. California, Nevada and Colorado.

hermes. **Ch. hermes** *Edw.* Here also the ♂ is above light red-yellow, at the costal margin and border and at the base brown with the same spots as the preceding, the hindwing much darker, with a long pointed tail; the ♀ has somewhat more distinct markings. Beneath the ground-colour of the forewings is more tawny, at the border grey, the hindwings also in the basal area grey, similarly spotted as the preceding. Expanse of wings: 22 to 27 mm. California, Nevada.

del Sud. **Ch. del Sud** *Wright* (145 b) seems to me to be the best founded upon an aberrative specimen which may well be numbered among this subgenus. The animal resembles the ♀ of *arota*, but the forewings are without the spots in the distal half of the submedian area, and the apex is broadly darkened. Beneath the hindwings are monotonously yellow, almost without spots. California.

2. Subgenus: **Gaeides** *Scudd.*

xanthoides. **Ch. xanthoides** *Bsd.* (145 a) is one of the largest species, above likewise purple-brown, in the ♀ more or less light yellow-red, in both sexes with an orange distal margin of the hindwing, in which there are black spots. The under surface is very pale yellowish-grey, distally white, with the usual black spots being white-ringed on the hindwings; those at the border are analwards proximally bordered by orange lunar lines. The species only flies in California.

dione. **Ch. dione** *Scudd.* (145 b) looks very much like *thoë* (145 c). Above more purely grey-brown with a faint violet lustre, the forewing with 2 black spots in the cell, the hindwing with an orange marginal band. Also the underside is very similarly coloured and marked, but the spots of the hindwings are differently arranged and the forewings likewise grey. The size is larger than in *thoë*. Iowa.

Ch. editha *Mead* (145 b) is smaller than *xanthoides* with somewhat less pointed wings, otherwise above *editha*, very much alike. The under surface is grey with an ochreous-yellow tint increasing towards the margin; the spots are black only on the forewings, on the hindwings ochreous-grey, finely ringed black. Nevada.

Ch. gorgon *Bsd.* (145 b, c). Upper surface lighter purple red with an intense blue-violet lustre, in *gorgon*, the ♀ much more extensively yellow-red. The under surface is yellow white, between the two submarginal rows of spots there is a complete row of orange lunae on the hindwings. The species is so far known only from California and Nevada.

3. Subgenus: *Chrysophanus* *Hbn.*

Ch. thoë *Bsd.* (145 c) has purple-brown forewings with a violet reflection and brown hindwings *thoë*, with an orange marginal band; the ♀ entirely resembles our *virgaureae*. Beneath the forewings are red-yellow in the disc, grey at the apex, the hindwings blue-grey with a red marginal band with the usual small black spots. Distributed and common in the Atlantic States and Colorado. The larva lives on *Rumex*.

4. Subgenus: *Epidemia* *Scudd.*

Ch. mariposa *Reak.* (= *nivalis* *Bsd.*) (145 c). The ♂ is above purple-brown with a violet reflection, *mariposa*, the ♀ extensively yellow-red with the usual small spots. Beneath the forewings are dull yellow-red, the hindwings ashy-grey. This little species is known from California and the Rocky Mountains.

Ch. zeroë *Bsd.* (= *ianthe* *Edw.*) (145 d) greatly resembles the preceding, but it is larger, more *zeroë*, slender, and the wings are more pointed, the ♂ exhibits a more distinct red-yellow marginal band on the hindwing, the black spots, particularly in the ♀, are clearer and more distinct. The under surface is of a duller colouring, the hindwing almost unspotted. California, Colorado.

Ch. helloides *Bsd.* (= *castro* *Reak.*) (145 d) likewise resembles the two preceding species, it is above *helloides*, more brightly coloured and more intensely spotted, and in the ♀ in the basal parts of both wings, particularly of the hindwings, darkened by brown. The under surface is like in *mariposa*, the hindwings of a more reddish tinge. California, Rocky Mountains.

Ch. dorcas *Ky.* (145 d) is smaller than the preceding, the ♂ above deeper violettish-purple, the *dorcas*, ♀ almost entirely darkened by brown. The under surface is almost monotonously yellow-red-brown. Distributed in Arctic America. — The form: **florus** *Edw.*, described from the Red Deer River, is larger with a much broader *florus*, black marginal band almost reaching the discal, zig-zag shaped macular series; the under surface is more light brown.

Ch. epixanthe *Bsd.* (145 e) is the smallest species, above darker, with a faint violet lustre and but *epixanthe*, few small orange spots, at the anal angle of the hindwing; the ♀ is above dull grey-brown. Beneath the wings are of a lighter grey, towards the base more blue-grey with the usual spots. From the northern Atlantic States.

5. Subgenus: *Heodes* *Dalm.*

Ch. hypophlaeas *Bsd.* (= *phlaeas* *Bsd.* & *Lec.*, *americana* *d'Urb.*, *fasciata* *Streck.*, *fulliolus* *Hulst*) *hypo-* *phlaeas*, (145 c) is the North American representative of our common *phlaeas* from which it differs above by the more fiery golden red colour, and by the greyer under surface of the hindwings and more prominent black spots. Everywhere common in North America, only in the Gulf States it is absent. The larva lives on *Rumex* as with us.

Ch. arethusa *Dod.* is closely allied to the preceding; forewings in the ♂ more pointed, the yellow-red *arethusa*, colour above more reduced; on the dark brownish hindwings 2 postmedian rows of spots and the black discal spot are more prominent. Beneath the forewings are of a purer yellow, the spots distinctly light-ringed; the grey hindwings exhibit beside the rows of small black dots an orange-red submarginal line. Expanse of wings: ♂ 30 to 35 mm, ♀ 29 to 33 mm. Rocky Mountains (Calgary).

6. Subgenus: *Chalceria* *Scudd.*

Ch. cupreus *Edw.* (145 e) is above red-golden with a narrow black margin, and in the ♂ with spots *cupreus*, beneath shining through, which in the ♀ appear also above distinctly black. The under surface is light grey-yellow, in the disc of the forewing red-yellow, of the same colour is a marginal band of the hindwing. California, Oregon.

Ch. snowi *Edw.* (145 e) is somewhat larger, above with somewhat broader black margins and also *snowi*, in the ♂ with more distinct, small black spots. The hindwings are beneath more dirty grey. Rocky Mountains.

Ch. rubidus *Edw.* (145 f) entirely resembles *cupreus* above, but it is considerably larger, the ♀ is duller *rubidus*, and more yellow. The under surface is light grey, almost white, the hindwings almost without any spots, while in the form **sirius** *Edw.* (144 n) they exhibit the usual spots like in the other species. Occurring in the Rocky *sirius*, Mountains and Oregon.

7. Subgenus: **Iophanus** *nov.**pyrrhias.*

Ch. pyrrhias *G. & S.* (145 f) is an entirely deviating animal which ought to form a special genus but in the structure it entirely corresponds with *virginiensis*. Above purple with black veins, the hindwings with red submarginal lunae and a violet antemarginal line. Beneath rosy-brown, with an ochreous disc of the forewing and three transverse lines and cell-end streaks. Hitherto only found in Guatemala at altitudes of 6 to 7000 feet, flying close to the soil and fond of resting on pig's droppings.

8. Genus: **Feniseca** *Grt.*

The only genus being quite uncommon to the American fauna, by reason of its structure and biological behaviour, shows unmistakable alliances to the Indo-Australian *Gerydinae*. The body is relatively stout, the wings longer and narrower than usually; the antennae are short and stout with a non-deposited club. Palpi comparatively long, with a long pointed terminal joint. On the forewing the lowest subcostal vein is short-petioled with the upper radial, otherwise there are no differences from the preceding genus. The life-history of this peculiar animal is well known.

The egg is hemispherical, more flat than high, covered with numerous fine longitudinal and transverse ribs enclosing polygonal cell-spaces. The larva looks like a short slug and is covered with many bristly hairs to which the crusts and exudations of the aphids forming the food of the larva adhere. The brown pupa on its dorsal side shows an exact imitation of the shape of a monkey's face with the eyes, nose and mouth as elevations and cavities.

tarquinius.

P. tarquinius *F.* (= *crataegi* *Bsd.*, *porsenna* *Scudd.*) (145 f) is above lustreless yellow-brown with a black-brown costal margin and distal margin and some small spots which vary greatly in extent or may be absent altogether. Beneath the colouring is lighter, at the costal margin and on the hindwings more cinnamon-brown, strewn with lilac-white and marked with numerous darker, whitish-ringed spots. Common in the Atlantic States from Nova Scotia to Carolina.

III. Group: **Lycaenini.**9. Genus: **Lycaena** *F.*

Characteristic is the course of the uppermost subcostal vein which is separated from the costal vein; the lowest subcostal vein is one-partite. Palpi scaled, the two first joints covered with short, dense, bristly hairs. Comp. for further particulars Vol. I, p. 298.

1. Subgenus: **Satyrium** *Scudd.**fuliginosa.*

L. fuliginosa *Edw.* (= *suasa* *Bsd.*) (144 a) is above monotonously dark grey-brown in both sexes. Beneath it resembles the European *semiargus* (Vol. I, p. 119, t. 82 e), lighter brown-grey than above, towards the base, preponderantly on the hindwings, with a bluish tint and a curved row of black, white-ringed post-discal eye-spots, similar discal spots and more indistinct submarginal lunae. California, Utah, Nevada.

2. Subgenus: **Cupido** *Schränk.**heteronea.*

L. heteronea *Bsd.* (144 a) is in the ♂ above light blue with lighter veins and a fine black border, the ♀ is brown with diaphanous spots on the under surface. The latter is almost white with large, jet-black postdiscal spots on the forewings; on the hindwings they are quite light brownish; on both wings they recede towards the base between the median veins. Colorado to California.

clara.

L. clara *Edw.* (144 a) greatly approximates the preceding, and is smaller on an average, the ♀ above extensively dusted light blue, with distinctly diaphanous spots on the under surface which is somewhat duller, more brownish, with several spots in the basal area also of the forewing. Sonora, California.

lycea.

L. lycea *Edw.* (= *rapahoe* *Reak.*) (144 a). Likewise very similar to *heteronea*, the ♂ with a more broadly smoky border of the wings; beneath somewhat darker, the forewings without any basal eye-spots, the series of eye-spots on the hindwings clearer, fine black, white-ringed. Distributed in the Rocky Mountains.

fulla.

L. fulla *Edw.* (= *fuliginosa* *Streck. nec Edw.*) (144 a, b) is smaller than the preceding, the ♂ above of a purer blue; the under surface is light grey with rows of very similar, white-ringed eye-spots, like *lycea*, but the postdiscal row is less curved; at the cell-end of the hindwing there is a white spot. Pacific States.

L. icarioides Bsd. (= *pardalis* Behr, *erymus* Bsd., *mintha* Edw.) (144 b) extremely resembles *fulla*, *icarioides*. above blue, towards the border somewhat darker; the under surface is more grey-brown, in the ♀ still darker; in the basal area slightly dusted with blue, with a large, reniform discal spot which is obsolete on the hindwing; the postdiscal row of eye-spots of the forewing is a straight line between the proximal margin and the upper median vein, by which it differs from most of the other species; submarginally only one row of brownish punctiform spots, the fine black marginal line, being present otherwise, is absent here altogether. Rather rare in South California. — f. **maricopa** Reak. is above brown with a violet lustre and obsolete roundish spots at the *maricopa*. border of the hindwing, beneath dark ashy-brown towards the base.

L. daedalus Behr (144 b) is smaller, of a deeper and purer blue with broader black margins, the *daedalus*. is brown with red-yellow marginal bands which may attain a very considerable width. Beneath darker brown-grey with the usual rows of eye-spots which are just as well developed on the hindwings as on the forewings; the submarginal rows are double, on the hindwings in the middle more or less spotted orange. Common in South California.

L. hilda Grinnell is very near to *daedalus*, above lustrous deep blue with a broader black border *hilda*. and a black reniform discal spot; at the anal angle of the hindwing some black spots; fringes snow-white. Under surface on an ashy-grey ground marked thickly and sharply prominent, the postdiscal band forming an angular semi-circle; at the anal angle of the hindwing there are only 3 small orange spots. The ♀ is above brown with narrower orange marginal bands. Expanse of wings: 25 to 32 mm. From San Bernardino (California).

L. saepiolus Bsd. (= *achaja* Behr, *rufescens* Bsd.) (144 b). The ♂ has above a green lustre, a lighter *saepiolus*. blue and a more broadly smoky border and apex, the ♀ is tinged green-blue towards the base with orange marginal lunae on the hindwing. The under surface is lighter, more brownish, marked like *daedalus*, but on an average with smaller spots, at the border the orange colour is mostly absent. Pacific States, Rocky Mountains.

L. amica Edw. (= *orbitulus* Scudd. nec *Prun.*) (144 b) is above more silvery blue, at the margin *amica*. brownish with a narrow straight discal streak of the forewing and white fringes. The under surface is lustrous grey-white with rows of small spots; on the hindwing the postdiscal band runs almost straight, the small brownish submarginal lunae are sometimes obsolete. From the Mackenzie River. Expanse of wings: 27 mm.

L. pembina Edw. is closely allied to *pheres* (144 c), of a darker violet-blue, with the discal streak *pembina*. of the preceding, the ♀ brown, towards the base bluish. The under surface is light brown-grey, towards the base dusted blackish with the same arrangement of spots as in the following species, but on the hindwing with more distinct submarginal dark dots ending in the anal angle with a dark diffuse spot; also in the costal-marginal area there are two black, white-ringed, small spots. British North America (Lake Winnipeg).

L. pheres Bsd. (144 c) is larger, lighter blue than *pembina*, without the discal streak. The under *pheres*. surface is characterized by the white diffuse spots on the light brownish-grey surface of the hindwing; — the f. **evius** Bsd. is an alpine form from the Rocky Mountains. — Pacific States. *evius*.

L. phileros Bsd. (= *helios* Edw.) is in its exterior very much like *icarioides* (144 b); it is smaller, *phileros*. above more violet-blue, beneath of a purer ashy-grey; the white discal spot of the hindwing has the shape of a heart like in the European *icarus*. The ♀ is brown, with a blue-violet tinge towards the base and with small, obsolete, red-yellow marginal spots of the hindwing. California, Arizona.

L. ardea Edw. The ♂ is above violet-blue to grey-blue with a very narrow dark marginal band in *ardea*. the forewing and a dark marginal line in the hindwing, as well as white fringes. Under surface fawn-coloured the base of the hindwing bluish. The forewing exhibits a large, reniform, black, white-bordered discal spot, an incomplete postdiscal row of 4 spots and traces of a submarginal row of small brown lunae; on the transverse vein of the hindwing a large white diffuse spot, the postdiscal spots are absent altogether. Expanse of wing : 24 mm. Nevada.

L. kodiak Edw. (144 c) is a smaller species, the ♂ above dark blue, with a very narrow black *kodiak*. border, the ♀ of a plain dark brown. Beneath the forewings are grey-brown with the usual though small eye-spots; the hindwings are extensively tinged greenish, likewise with minute eye-spots; the proximal submarginal row consists of small angular spots in the openings of which the distal punctiform spots are placed. Known only from Alaska.

L. mela Streck. is another species having been inserted in this subgenus. It has not become known *mela*. to us, and its diagnose in the supplement of a North American special work is not available for us at present. It is said to occur in Colorado and British Colombia.

3. Subgenus: **Nomiades** Hbn.

L. xerxes Bsd. (144 c). The ♂ is above dusted with dark blue; also the ♀, but less, on the under surface *xerxes*. very easily recognizable by the large white spots which may occasionally be very finely pupilled black. From California.

antiacis. **L. antiacis** Bsd. (= *polyphemus* Bsd., *orcus* Edw.) (144 c) is in the ♂ quite light violet-blue with a narrow black border, the ♀ dull brown-grey, with a blue tinge towards the base, beneath light grey, on the hindwings somewhat more brownish; the spots show the same arrangement as in *xerxes*, but they are thickly pupilled black, particularly on the forewings; there are no submarginal spots at all. California, Nevada, and Arizona. — The form: *mertila* Edw. (144 d) has less thickly black-pupilled spots and more intensely greenish bases of the hindwings, whereby it comes nearer to *xerxes*. — f. *behrii* Edw. (144 c) is distinguished by its much darker grey-brown under surface.

couperii. **L. couperii** Grt. (= *pembina* Streck. nec Edw., *afra* Edw.) (144 d) is perhaps only a northern form of the preceding from New Foundland and Labrador; above almost the same, beneath dark brown-grey, the spots arranged the same, but nearly all white, only slightly black-pupilled, particularly on the hindwing. Fringes grey-brown, in *antiacis* white.

lygdamas. **L. lygdamas** Dbl. (144 d) is considerably smaller, above much lighter silvery blue, in the ♀ darker, towards the margin smoky, with a dark cell-spot. The under surface is light brown with thick, black, white-ringed spots arranged like in the preceding species and a pair of small spots in the middle of the cell on the forewing. Sonora, Atlantic States. — The form: *oro* Scudd. (144 d) is larger, beneath quite light grey, without a brown tint, towards the base somewhat bluish. It flies in Colorado, California and New Mexico.

4. Subgenus: **Phaedrotes** Scudd.

sagittigera. **L. sagittigera** Fldr. (= *catalina* Reak., *lorquinii* Behr, *rahae* Bsd., *viaca* Edw., *daunia* Edw.) (144 d) is a most variable species, mostly rather light blue, towards the margin more or less dark smoky with white-speckled fringes. Beneath grey-brown, dusted with a chalky white alternating more or less conspicuously particularly on the hindwing in the cell and before the submarginal spots. In the Rocky Mountains and California.

speciosa. **L. speciosa** Edw. (144 d) is a very small species, of a delicate light blue, in the ♀ broadly bordered with a brownish grey. Beneath so very much strewn with white that almost only the inner-marginal half of the forewing remains brown; the spots of the hindwing are very small, the submarginal spots are almost entirely absent. From South California.

5. Subgenus: **Philotes** Scudd.

sonorensis. **L. sonorensis** Fldr. (= *regia* Bsd.) (144 e) is unmistakable by the red-spotted, silvery blue forewings. Distributed from California to North Mexico.

6. Subgenus: **Agriades** Hbn.

podarce. **L. podarce** Fldr. (= *tehama* Reak., *cilla* Behr, *nestos* Bsd., *orbitulus* Streck.) (144 e). The ♂ is above grey-blue, towards the margin darkened, and in the disc lighter, here with dark cell-streaks, before the border of the hindwing with darker, small lunae. The under surface is dull grey-brown with the usual small eye-spots and a large white cell-spot of the hindwing. In the darker ♀ the cell-spot of the forewing is above surrounded by reddish-yellow. At loftier altitudes of California, Nevada and Colorado.

aquilo. **L. aquilo** Bsd. (= *franklinii* Curtis) (144 e) replaces the eastern *orbitulus* in Arctic America, like the following does in less northern latitudes. Very small and dark blue-grey, particularly also the under surface very dark brown with large white, only feebly and finely black-pupilled spots.

rustica. **L. rustica** Edw. (144 f) is almost the same species as the preceding, and according to COURVOISIER, the name has to replace the palearctic denomination of *orbitulus* Prun.; by one third larger, and lighter blue than *aquilo*, beneath light grey with purely white spots. From Colorado and British America.

7. Subgenus: **Rusticus** Hbn.

enoptes. **L. enoptes** Bsd. (144 e). Above blue, the ♀ brown, more or less suffused with blue, with or without an orange marginal band of the hindwing. The fringes white-speckled. The under surface is light blue-grey with the usual spots, between the submarginal spots of the hindwing small orange spots. Pacific States.

glaucan. **L. glaucan** Edw. (144 f) has a somewhat broader black border of the wings than *enoptes*, and on the hindwings there appear above dark marginal lunae. The under surface resembles that of the preceding, and is perhaps on an average more strongly spotted black. Colorado, California.

battoides. **L. battoides** Behr (144 f) is of a more delicate and lighter blue than the preceding, with a distinctly diaphanous orange marginal band of the hindwing and before it small dark crescentiform spots. Beneath brown-grey with much larger, more square spots arranged in the same way as in *enoptes*. California, Arizona, Colorado.

L. shasta *Edw.* (= *zelmira* *Fldr.*, *calchas* *Behr*, *nivium* *Bsd.*, *lupini* *Behr*, *minnehaha* *Scudd.*) (144 f). *shasta*. Above violet-blue, in the ♀ extensively brown, with dark submarginal lunae, very distinct black cell-streaks, and in the ♀ with small orange marginal spots behind them. Beneath dirty grey with the usual rows of spots and small orange marginal spots; the distal submarginal row of spots is proximally silvery blue-green. Pacific States and Rocky Mountains.

L. melissa *Edw.* (144 f) is on an average larger than the preceding, in the brown ♀ above with broad orange marginal bands, behind which there are black marginal spots. Beneath light brownish grey with oblong orange marginal spots on both wings. From the Rocky Mountains.

L. scudderi *Edw.* (144 f). The ♂ does not differ above from *melissa*, the ♀ is darker, the orange marginal bands reduced to narrow, small crescentiform spots on the hindwings, the under surface is whiter, the eye-spots, orange marginal spots and small metallic spots all very much smaller. The larva lives on *Lupini* and other *Papilionaceae*. Atlantic States, common.

L. lotis *Lintn.* (144 f) is larger, the ♂ violet-blue with a very narrow black border, the ♀ above unicolorously brown, beneath as light as the preceding, perhaps a shade more brownish, with particularly reduced submarginal spots without any orange between. From California.

L. acmon *Dbl. & Hew.* (= *antaegon* *Bsd.*) (144 g). Very easily recognizable by the broad orange marginal band of the hindwing in which there are black submarginal spots, both in the brown ♀ being dusted blue towards the base, and in the lilac-blue ♂. Beneath marked like *melissa*, only of a somewhat lighter tinge and with a coherent orange band between the submarginal rows of spots. Pacific States and Rocky Mountains, to the south as far as Mexico, where it flies in the surroundings of the capital. — In the form **emigdionis** *Grinnell* (= *melimona* *Wright*) (144 g) the orange bands of the hindwings are above still broader and proximally faded. — subsp. **monticola** *Clem.* is above more silvery blue, beneath marked with thicker spots on an ashy-grey ground strewn with bluish. The ♀ is above strewn with a much brighter blue as far as almost to the border, the red band of the hindwing occupies almost one third of the hindwing; the under surface is more brownish. From Pasadena (California). — f. **neurona** *Skinner*, described only according to female specimens, resembles typical *acmon* from which it differs above by orange ribs terminating broader into the margin, also the costal margin is sometimes orange. From San Bernardino (California). — f. **chlorina** *Skinner* (144 g) I can likewise only take to be an aberrative ♀ of *acmon*, with a much broader orange border of the hindwing, which, however, does not appear proximally faded as in *emigdionis*, but distinct. California.

L. aster *Edw.* (144 g, h) is smaller than the preceding, above light blue like *enoptes*, the ♀ dull blue-grey, instead of the orange marginal band there are faint blue small lunae bordering on the black marginal spots. Beneath very light, the spots small, the submarginal spots more or less obsolete without any orange between. Known only from New Foundland.

L. yukona *Holl.* has remained unknown to me, it may belong near here. The wings are above in the ♂ dark violet-blue, with a fine brown marginal line and white fringes, in the ♀ black-brown, towards the base with a blue tinge. Beneath dark ashy-grey, towards the base dusted blue-grey, marked like the others; a characteristic mark is the 6th spot of the postdiscal row, counted from the costal margin, being double on both wings, only on the hindwing removed very far inward; between the 2 rows of marginal spots there is no orange except the space between the median veins of the hindwing; the subterminal row consists of small sagittate spots the points of which show towards the base. Expanse of wings: 22 to 24 mm. From North East Alasca, captured between the 20th and 24th of July.

L. annetta *Mead.* (144 g). Above light blue, the ♀ still much lighter, towards the margin almost whitish, on the hindwings with small black marginal spots. Beneath coloured and marked like *scudderi*. Utah.

L. anna *Edw.* (= *cajona* *Reak.*, *argyrotoxis* *Behr*, *philemon* *Bsd.*) (144 h) resembles *melissa* (144 f) above, but it is considerably larger; also the under surface is extremely similar to that of *melissa*, but all the spots somewhat smaller and finer, also the small orange marginal spots smaller. Pacific States, Colorado.

L. cogina *Schaus.* I am unable to judge whether this species and the 2 following, having remained unknown to me in nature, belong to the real *Lycaena* or to one of the following genera. The description runs as follows: In the ♂ the forewings are lilac-white, towards the base strewn with black; the costal margin, apex and distal margin are broadly grey-black; hindwings lilac-white, at the base strewn with black scales; costal margin broadly dark grey; a black marginal line, dark marginal spots between the veins, and before them dark triangular shades. Under surface grey-white with a dark marginal line and dark triangular marginal spots. The forewings exhibit a dark spot at the cell-end, a postdiscal row of dark grey spots bordered with white, and behind them dark diffuse spots between the veins, before the border a series of dark lunae. On the hindwings the spots are bordered with a pure white; two dark costal-marginal spots, in the basal area 3 spots: one in the

cell, one below it, and one at the proximal margin; at the cell-end a streak-like spot, behind it a very indistinct macular series, followed by irregular grey shades; before the border dark angular streaks. Expanse of wings: 22 mm. Castro (Paraná).

griqua. **L. griqua** Schs. has olive-grey wings, dark discal streaks and a dark distal margin, in front of which the markings beneath show indistinctly through; fringes white, speckled grey. The under surface reddish-yellow with an olive tinge, the spots black, bordered with an isabel-colour; a dark marginal line, small dark grey marginal spots, the latter more distinct on the forewings; here there is a black spot at the cell-end, behind it a series of larger black spots; on the hindwing 2 small basal spots at the proximal margin, then a row of 4 black spots, a light spot at the cell-end, behind them a row of 7 black spots, the third from the costal margin being placed the farthest towards the distal margin. Expanse of wings: 20 mm. Castro (Paraná).

ruberrothi. **L. ruberrothi** Weeks. Body above black, beneath white. Forewing above light brown-black, in the basal area black, marginal line and veins darker; hindwing above like the forewing, at the border a series of black spots margined with a light brown, the one above the lower submedian vein being the most prominent. Forewing beneath light brown, in the basal half strewn with white scales; at the border there are lighter moon-spots indicated; in the hindwing beneath the white scaling is extended over the whole surface of the wing. Expanse of wings: 18 to 19 mm. — Bolivia (Sicasica). Perhaps better to be placed to *Itylos* beside *moza* and *inconspicua*.

10. Genus: **Cyaniris** Dalm.

The species of this genus are distinguished by much more delicate, comparatively somewhat broader wings and longer, more pointed palpi projecting far beyond the frons; their hairing is longer, too, and not so dense.

ladon. **C. ladon** Cr. (= *pseudargiolus* Bsd. and Lec., *argiolus* Smith and Abb., *intermedia* Streck.) (144 h) is an extremely variable species being most widely distributed from Alaska and Anticosti to Panama. Above delicately milky blue with a slight violet tinge, on the hindwings almost whitish, in the ♀ above very broadly margined with black, often also on the forewings brightened up by whitish towards the margin. This is the typical summer-form, the under surface of which is white with small fine, black-grey punctiform spots. — In early spring several forms fly together, which are generally somewhat smaller and exhibit beneath more diffuse and confluent macular markings, such as: **lucia** Ky. (144 h) with a brown spot in the disc of the hindwing beneath; **marginata** Edw. (144 h) with broad, brown-grey margins beneath. — In contrast with it: f. **violacea** Edw. (144 h) has a clear and not confluent marking beneath. — In West Virginia and Colorado there flies a form that is quite black above: **nigra** Edw. (144 i). — f. **cinerea** Edw. may be a transition to it. — f. **arizonensis** Edw. has in the ♀ considerably broader margins of the wings, the colouring being paler. — f. **neglecta** Edw. is another form flying in summer with a much more prominent and clearer marking beneath and of a smaller size. — In South Arizona f. **piasus** Bsd. flies with a much darker violet-blue, unmarked colouring above; beneath the spots are more indistinct. — f. **echo** Edw. is a large, quite pale, almost grey-white form from South California. — f. **gozora** Bsd. (144 i) is the southernmost form from Mexico and Central America to Panama; it is above of a deeper, more lilac colour with white discal spots between the median veins of the forewings, and a broad white, grey-veined distal half of the costal area of the hindwing. — The larva is very polyphagous.

11. Genus: **Everes** Hbn.

Distinguished by anastomosis of the uppermost subcostal vein with the costal vein. The wings are narrower, the palpi slender and pointed, the two first joints covered with dense, soft, porrect hair.

amyntula. **E. amyntula** Bsd. (144 i). This and the following species are both extremely alike and have, therefore, led to disagreements of opinion. We here state their general differences, according to the excellent examinations of BETHUNE-BAKER, by which they are easily discernible, as there are no absolutely sure marks to be stated. *Amyntula* is generally much larger, with decidedly broader wings, with a sharper apex and a straighter margin. Above the marginal line is fine, black. The under surface is whitish, the spots of the forewings short diffuse spots, scarcely encircled by white, the submarginal spots obsolete, also on the hindwings all the spots are generally more obsolete. — In f. **herrii** Grinnell which, however, coincides with BOISDUVAL's type according to BAKER, the black border of the wings is broader, the marking beneath much more intense, and on the hindwing there are only two small orange spots at the margin instead of the usual 5. Pacific States. Of this species only one generation is known. The larva lives on *Astragalus*.

comyntas. **E. comyntas** Godt. (144 i) is generally smaller, with narrower, rounder wings, with a bent distal margin. Above the marginal line is broader, more brown-black. The under surface is decidedly greyer, the

spots appear as more clearly prominent, white-ringed eye-spots, the submarginal spots and all the spots of the hindwing are always distinct. In southern specimens the blue colour increases at the bases of the wings, in the ♀ above. The species is widely distributed from Canada to the south through Mexico, Guatemala, Honduras, Nicaragua as far as Costa Rica, in 3 or 4 generations. — The larva is brown or green, very variable, and lives on the most different Papilionaceae.

E. tulliola G. & S. (144 i) is a very much deviating, small delicate species. Above light blue with *tulliola*, a broad, brown-grey distal margin of the forewing and a narrower one of the hindwing. Beneath light grey with the usual postdiscal series of blackish, white-ringed eye-spots and cell-spot; in the middle of the cell there is besides a double, black spot which is only single or may be entirely absent in specimens from more southern habitats, and at the costal margin above the said spots and the discal streak there is one black, white-ringed punctiform spot each; before the brownish-grey marginal triangles in the white ground a series of angular spots appearing as a notched line. The hindwings are marked in the same way. Occurring from Mexico through Guatemala, Venezuela, Colombia as far as East and South Brazil.

In addition we wish to state that two species, hitherto inserted in *Everes* and reported to originate from California: *monica* Reak. and *tejuia* Reak. have been identified by Dr. SKINNER, on comparing the types, as the Chinese *Euchrysops cnejus* resp. *Catochrysops strabo*.

12. Genus: **Hemiargus** Hbn.

Scarcely different from the real *Lycaena*; the scaling is more delicate and thinner, the colouring mostly a more lustreless violet-blue; beneath the hindwings exhibit at the anal angle 2 or 3 black, small eye-spots being pupilled and encircled green silvery.

H. isola Reak. (= *alce* Edw.) (144 i, k). The ♂ is above violet-blue, the ♀ brown, towards the base *isola*, more or less tinged blue, on the hindwings in the anal area with 1 or 2 black marginal spots. The under surface is ashy-grey, the hindwings mostly more brownish, on the forewing, with a postdiscal row of large black, white-ringed spots, all the other spots except 2 black costal-marginal spots on the hindwing are small and brownish; on the hindwing there are behind a whitish submarginal band 2 black anal spots with green-silvery pupils and encircled by somewhat reddish-yellow, the proximal one being mostly divided into two very small ones. From Texas to Mexico. — **nyagora** Bsd. I can only take to be an insignificant form, in which the white submarginal *nyagora*, band is absent on the darker under surface of the hindwing.

H. gyas Edw. is very much alike, above lighter violet-blue, otherwise the same. Beneath light *gyas*, brown with a whitish hue, with the same markings, but without the whitish submarginal band, and the two anal spots are plainly blackish. Arizona. Expanse of wings: 23 mm.

H. cyna Edw., based upon a ♀, has above on a purple blue ground a broadly darkened brown margin *cyna*, and apex, and a fine discal streak; on the hindwing the anal spot is absent. The under surface is tawny, dusted whitish, the large black spots on the forewings in the preceding are here brown, the two upper ones smaller and placed inwards. Texas. Expanse of wings: 22 mm.

H. zachaeina Btlr. (144 k) differs from *isola* by its deeper purple-blue above and like in *cyna* a plain *zachaeina*, brown macular band on the lighter under surface of the forewing, the spots being smaller and narrower; only 2 costal-marginal spots and one basal spot of the hindwing are jet-black. Florida, Antilles, Cuba, Jamaica, Dominica, Central America, Colombia as far as South Brazil.

H. hanno Stoll. (= *antibubastus* Hbn., *hamo* Luc., *pseudoptilete* Bsd. & Lec., *astenidia* Bsd., *filenus* *hanno*, Poey.) (144 k) forms about the middle between *isola* and *zachaeina*, above not different from *isola*, the blue colour perhaps somewhat duller. The under surface is brown-grey, marked like *isola*, but the postdiscal row of spots is not jet-black, but brown like in *zachaeina*, the spots smaller, the uppermost placed far inwards. On the hindwing the whitish marginal band is absent, and there is only one small black anal spot with a silvery green pupil and encircled by a faintly rusty-yellow ring; beside this spot there are in the basal area 3 and at the costal margin 1 prominent, jet-black, small eye-spots. Mexico to Colombia (Bogotá). Specimens from the latter habitat are beneath much darker and more monotonously brown: **bogotana** f. nov. *bogotana*,

H. ramon Dogn. resembles above small specimens of *hanno*. The colour beneath is lighter ashy-grey, *ramon*, towards the margin strewn with blue atoms, the marking like in *hanno*; on the hindwing only in the basal area the 4 jet-black, small eye-spots are prominent, all the others are brown-grey; at the border there are here 4 black small spots pupilled metallic green. Described from Ecuador (Loja). Expanse of wings: 22 to 25 mm.

H. martha Dogn. is still smaller, above with a somewhat broader black border and a series of black *martha*, marginal dots on the hindwing. Beneath like *ramon*; but on the hindwing in the middle with a large white transverse spot bordered with brown beneath; the 4 marginal eye-spots are in a brown ground. Expanse of the wings: 19 to 22 mm. Ecuador (Loja).

ammon. **H. ammon** *Luc.* (144 k) is likewise similar, but easily discernible by two black anal spots above, the proximal one of which mostly exhibits towards the base an orange-red spot. Beneath more purely white and black-grey, the hindwings all white with grey spots, the two anal spots jet-black, bordered with a bright silvery blue, and those between the median veins proximally spotted broadly orange-red. Florida, Cuba, South America. — f. **dominica** *Möschl.* seems to be only an insignificant form in which, on the under surface of the hindwing, the 3 small spots in the basal area are not prominently jet-black. Dominica.

13. Genus: **Brephidium** *Scudd.*

The costal vein is entirely coalescent with the uppermost subcostal. Very small, delicate insects with comparatively narrow wings with rounded apices. Beneath the hindwings exhibit up to 7 metallic-pupilled marginal eye-spots, of which mostly only 4 are fully developed.

isophthal-
ma. **B. isophthalma** *H.-Schäff.* (= *pseudofea* *Morris.*) (144 k). Above brown with a brass or copper reflection, on the hindwing with a marginal row of blackish spots being pupilled thickly black and outside silvery on the red-brown under surface. Fringes one-coloured grey-brown. Gulf States, Antilles.

exilis. **B. exilis** *Bsd.* (= *fea* *Edw.*) (144 k) is the same, but smaller, above mostly with a more intense brass lustre, and broad white fringes at the proximal angle and in the apical half of the forewing; on the under surface, before the black, marginal, macular series, the ground is more distinctly white. From the Gulf States through Mexico and Central America as far as Venezuela.

14. Genus: **Leptotes** *Scudd.*

Very near to *Hemiargus*, but still more delicately built; the costal and uppermost subcostal veins run rather closely beside each other without coalescing. The hindwings beneath exhibit at the anal angle 2 small black eye-spots with metallic blue pupils.

cassius. **L. cassius** *Cr.* (144 k, l). An extremely common species widely distributed in the south; the ♂ above violet with diaphanous spots beneath, the hindwings are white, and at the costal margin and border lilac variable in extent. Beneath white with numerous brown macular bands, 2 before the border close together, the distal one consisting of punctiform spots, the proximal one of crescents, the 2 spots being placed the nearest to the anal angle jet-black, bordered with silvery blue. The ♀ is white also above, towards the base of a silvery blue opalescence with black-brown spots, costal and distal margins. From Mexico through the whole of Central America as far as Colombia, South Brazil, also in Cuba, Jamaica, Hayti, and Dominica; flies up to 5000 ft.

theonus. **L. theonus** *Luc.* (= *cassius* *Morr.* nec *Cr.*) (144 l) is probably only a smaller northern and insular form of *cassius*. The ♂ is lavender-blue with somewhat broader dark margins; the ♀ white, on the forewings somewhat more extensively suffused with blue, without the intense black spotting of *cassius*. Beneath the white is more reduced, the macular bands much darker; the anal spots of the hindwings are above and beneath very thickly black.

marina. **L. marina** *Reak.* (= *cassioides* *Bsd.*, *pirithous* *Godt.*, *floridensis* *Morr.*) (144 l) is above of a duller and darker lilac-blue colour than the preceding, with a black border narrowing to a line and very diaphanous marking beneath; the ♀ is intensely smoky brown-grey on the white ground, towards the base with a blue lustre, somewhat more strongly spotted than the ♂. The under surface is much darker by the white being very much confined as far as the proximal margin; the anal spots are distinctly encircled by a rusty yellow. Distributed from Texas, Arizona, California through Mexico as far as Guatemala. — The slightly differing f. **cassidula** *Bsd.* has purely white fringes, and in the anal area of the hindwing beneath the eye-spots are not alike, the proximal one very small or entirely absent. Described from Honduras.

striata. **L. striata** *Edw.* was described from San Antonio in an American forestry magazine of 1877 not available to me.

andicola. **L. andicola** *G. & S.* is almost twice as large as *marina*, with a sharp apex of the wings, above violet-blue with dirty silky-white fringes, beneath grey-brown with small, darker spots edged with white; before the margin of the hindwing with a white band and 3 reddish-yellow, small anal spots with black pupils and strewn silvery. Expanse of wings: 40 mm. Discovered by EDW. WHYMPER in the Andes between 7500 and 12 000 feet.

callanga. **L. callanga** *Dyar* (144 l) is somewhat larger than *marina*, above reddish violet-blue with a silky gloss and a very fine brownish border. The fringes of the forewing are grey-white, at the ends of the veins speckled somewhat darker, those of the hindwings purely white. On the under surface the forewings are light red-brownish with somewhat darker spots encircled by a whitish colour; before the discal spot there is another spot in the middle of the cell; the spot of the postdiscal row situate between the lower radial veins has a very oblique position and projects far towards the margin, which in its whitish ground contains marginal and subterminal rows of purely grey spots. Hindwings more grey-brownish, likewise only dull-spotted, with a purely white band between the postdiscal and subterminal rows of spots, at the anal angle 2 very small black dots encircled by silvery green. Peru (Cuzco). In my opinion the species may be identical with the following.

L. ochsenheimeri Godt. Whether this species unknown to me is to be placed here, I cannot decide; it at any rate seems to me to be allied to *callanga*. Above blue-violet with a brown margin and white-speckled fringes. Beneath the disc of the forewing is red-yellow with some small light yellow ring-spots, a white undulate line before the apex and black marginal dots. The hindwings are beneath of a dirty brownish; in the basal area there are grey rings, behind the middle an undulate snow-white band and 5 small black marginal spots, at the anal angle 3 small spots strewn with a golden green. Expanse a little more than an inch. Described from the Antilles, though doubtful. *ochsenheimeri*.

15. Genus: **Itylus** *gen. nov.*

Anatomically hardly separable from *Lycaena*, but the total impression of these small insects flying only in Tropical America, mostly at great altitudes, is so characteristic that the separation is justified. The hairing of the body is stronger, particularly the palpi show a much longer, somewhat porrect, beard-like hairing on the underside, whereas laterally they are covered with broad scales. Costal and subcostal vein of the forewing run separately. The fringes are uncommonly long, mostly speckled very conspicuously; the colour above is a metallic blue of a very intense mother-of-pearl gloss, in other species silvery or coppery bronze are predominant; the under surface of the hindwings mostly shows conspicuous silvery-white macular marking or peculiarly brown serpentine lines. As to the synonymy this group offers great difficulties, because there are a lot of obvious manuscript names, but no descriptions.

I. pelorias Weym. (144 m) I only know from the description and figure, it must be extremely allied to the following; the brown upper surface exhibits a silvery grey-blue lustre only in the basal area, the fringes are sharply speckled brown and white. Beneath like *pacis*, but the brown transverse markings of the hindwings, having moreover the same course, seem to be darker black-brown and more distinct; in the marginal area there are no markings whatever. Described according to a ♂ from Bolivia (Sajama) between 3600 and 4600 m. Length of forewings: 10 mm. The specimen denoted as ♂, however, may anyhow be ♀ of the following form, which would then become synonymous.

I. pacis Stgr. i. l. (144 l, m) is above extensively violet-blue with a purple lustre, towards the margin brown with distinctly white-speckled fringes, in the ♀ only in the basal half silvery blue-violet, at the border much broader reddish-brown. Beneath reddish-brown, on the forewing with a discal spot and a series of post-discal spots, in the marginal area indistinct, double, darker, small lunular spots in a ground dusted whitish; the hindwings, on a ground being more intensely dusted whitish, show irregularly torn, dark brown spots in the basal area and a more distinct transverse band from the costal angle to the middle of the proximal angle, projecting far towards the margin between the lower radial veins, and below it with a large silvery white spot; another white patch is situated at the costal margin between a basal spot and the beginning of the transverse band. Marginal markings indicated like on the forewings, between the median veins more distinct. Peru (Cuzco).

I. koá Drc. (144 m) is above duller and darker, beneath somewhat lighter; on the forewings the spots are not darker than the ground, their white edges appear as white, coherent undulate lines; on the hindwing there is a complete white longitudinal ray in the costal-marginal area, traversing the dark transverse band, the white spot in the anal area is also larger and bifurcates towards the distal margin. Peru, Bolivia, apparently rare.

I. vapa Stgr. (144 m) approximates the preceding; it is above monotonously brown with broadly white-speckled fringes. The under surface is very much like that of *koá*, but much lighter; the silvery white costal-marginal stripe extends to the costal margin itself and in it there are about in the middle 3 small round spots of the pale brownish ground-colour; the white spot below the discocellular is much more extensive and almost reaches to the base. In Peru and the Bolivian Andes between 3 and 4000 m (Cuzco, La Paz, Huallatani, Cocapata).

I. ludicra Weym. (144 m). This species described according to but one specimen must likewise be closely allied to *koá* and *vapa*, the upper surface, however, is described to be light silvery blue as in our *Lyc. eros*, though with a much stronger lustre; the narrow brown distal margin gradually warms into the blue colour and is somewhat broader at the apex; at the cell-end there is a brown streak; the fringes are speckled brown and white. The under surface is light yellowish-brown, the macular bands recognizable only by their white bordering. The fringes are all white in the basal half, and speckled only in the distal half. On the hindwing the silvery-white costal-marginal stripe is distally broader, sending forth an off-branch on the subcostal vein. As the remainder of the brown transverse band of the preceding species there are a series of dark-brown crescentiform streaks bordered distally by white, from below the lower radial vein in the shape of a broad white band; at the proximal angle several small white spots, the one between the median veins with a black pupil. Length of forewings: 10 mm. Bolivia (Tacora), 3600 to 4600 m.

I. moza Stgr. is a somewhat larger species, above lustrous smoky-brown with an intense metallic lustre, distinguished by the unspeckled fringes being in the distal half dirty white, in the proximal half darker

brown than the surface of the wings; before the distal margin of the hindwing there are 3 to 5 blackish, small eye-spots with a light enclosure. The under surface is very similar to that of the following species, but below the discocellular of the hindwing a silvery white patch is more prominent. Bolivian Andes near Copacata and Huallatani (3 to 5000 m).

inconspicua. **I. inconspicua** *sp. nov.* (144 m) is smaller than the preceding, dull smoky brown with broadly white-speckled fringes, without any lustre; the hindwings above without any small marginal spots. Beneath dull yellowish-brown, the postdiscal row composed of minute, round, separate spots surrounded by white; a double submarginal row of spots in a whitish ground is very distinct. The hindwings are very much strewn with white, in the basal and inner-marginal areas with a silvery blue-grey lustre, as well as in the basal area of the forewing. Before the middle 3, behind it 7 or 8 small round spots of the ground-colour, margined by a somewhat darker colour and encircled by white, form an irregularly curved row; before the dull grey-brownish marginal triangles there is a regular series of high, pointed arches bordered by white on both sides. Cuzco (Peru) at an altitude of 3600 m.

titicaca. **I. titicaca** *Weym.* (144 m), presumably the smallest species, and the following belong into a somewhat deviating group. The shape of the wings is much longer and more pointed. Above lustrous violet-blue, like *Lycaena icarus*, with a narrow brown distal margin and long dirty white fringes. Beneath lustrous light yellowish-brown, the hindwings white-grey, towards the costal margin with a dark brown longitudinal line, below it 2 brown transverse lines from the costal margin to the proximal margin, being inwardly curved in the middle; near the distal margin several brown sagittate spots. Based upon 3 specimens from Lake Titicaca and Sajama (Bolivia), from an altitude of 3600 to 4600 m. Length of forewings: 7 mm.

speciosa. **I. speciosa** *Stgr.* (144 n). In the ♂ the upper surface is blue-violet, the margins brown, all with an extremely intense bronze lustre, suffused as if polished; the ♀ is more extensively brown, only at the bases of the wings with a slight silvery grey-blue tinge. The fringes are speckled white. The forewings are beneath dull brownish, with a white-grey tinge towards the margin, the hindwings all white-grey with 2 sinuate dark brown transverse lines the proximal one of which turns round towards the base below the costal margin and sends a pointed continuation towards the base on the median. Moreover these lines seem to vary very much, Peru and Bolivia at an altitude of 4 to 5000 m. (Cuzco, Huallatani).

16. Genus: **Scolitantides** *Hbn.*

This name of the genus having been established by HÜBNER for *Lycaena hylas* *Schiff* (nec *Esp.*) = *baton* *Bergstr.* has been improperly used since, for a small group of *Lycaena* from the southernmost corner of America, where we may leave it for the present, as the group in itself is very homogeneous, although a separation from *Lycaena* is scarcely a point at issue. In its exterior it partly differs by an orange-red colouring above, which is repeated in all the species in the disc of the forewing beneath. In the colour and scheme of markings the small animals also show some resemblance to the *Chrysophanini*, but on account of the shape of the hindwings, which are the longest between the radial veins, they must better be placed here. About half a dozen species, mostly from Chile, have become known hitherto.

chilensis. **S. chilensis** *Blch.* (= *atahualpa* *Wallengr.*) (144 n) is above black-brown with an orange-red disc of the forewing and pale, on the forewings almost white, small submarginal lunae; the one between the median veins of the hindwings is larger, orange, distally black-pupilled. Under surface pale yellowish-grey, in the disc of the forewing orange with a strongly curved postdiscal row of small black spots, behind it a row of more grey spots. Hindwing densely dusted grey with a cordiform white discal spot and behind it a strongly curved row of ocelli, also in the basal area yet 3 eye-spots. Chile.

plumbea. **S. plumbea** *Btlr.* differs above from the following species by its lustrous blue-grey colour with a broad dark distal margin and veins. Fringes broadly white, spotted black. Beneath likewise similar to *collina*, but deviating by its lighter colouring, the fringes being speckled black and white, the basal half of the hindwing being very much intermixed with white and the distal half almost entirely white. Chile.

collina. **S. collina** *Phil.* (= *lyrnessa* *Hew.*) is above lustrous blue with a black margin and white-speckled fringes. Beneath the disc of the forewing is orange with a curved postdiscal row of black spots, the border grey with dark marginal spots bordered by white. The hindwings are grey marbled with a transverse band and one black longitudinal spot each at the costal margin and proximal margin. Santiago de Chile.

endymion. **S. endymion** *Blch.* (= *sybilla* *Ky.*) deviates from *collina* by small antemarginal black spots above. Beneath the disc of the forewing is yellow-grey, towards the margin lighter, with a black cell-end streak, behind it 6 large black spots and an antemarginal double row of small diffuse spots, all of which have white rings. The hindwings are grey, marked as in *chilensis*, the antemarginal line composed of angular streaks. Chile (Coquimbo).

faga. **S. faga** *Dogn.* (144 n). This small species was described as *Thecla*, later on placed to *Scolitantides* by DRUCE, with which, however, it does not harmonise either. The shape of the wings is greatly distinguished

by the distal margin contiguous to the proximal margin in an almost rectangular line; the costal margin of the hindwing is somewhat concavely indented, the hindwings exhibit two very short small tails. Above brown with a slight purple lustre, at the anal angle of the hindwing with 2 minute black dots. The ♀ is somewhat larger, with a more intense copper lustre. Beneath the forewings are orange in the disc, towards the margin with two grey-brownish macular stripes; the hindwings are dusty grey with numerous blurred, whitish, small spots and a distinct white transverse band running straight from the costal angle to the anal angle. Ecuador, Peru

S. sylphis *sp. nov.* (144 n) I can only describe according to the only ♀ before me from the Collection *sylphis*. FASSL: the shape is the same as in the preceding species, but the colour greatly deviates above from the copper-brown ♀ of *faga*: suffused with a bright blue violet, with orange-red antemarginal macular bands on both wings. Beneath in the disc likewise red-yellow, the 2 marginal bands consist of distinct black small spots with white rings, on the hindwing the straight whitish transverse band is absent. Cuzco (Peru).

S. excisicosta *Dyar* differs from *faga* above by white-speckled fringes, the costal margin of the hindwing *excisicosta*. being flatly concave like in *faga*, the apex projecting roundish, on the hindwing analwards 3 minute black spots, proximally feeble, whitish, small lunae. Beneath the forewings are likewise orange, at the costal margin and distally grey with 2 rows of dull small submarginal spots surrounded by whitish; hindwings almost grey with a whitish submarginal band and very small, dull basal and discal spots; the 3 small anal spots have golden pupils. Peru (Cotahuasi, Chuquibamba) in October.

Corrections and Additions.

P. 757, line 3 from below, after *catadupa* insert:

Th. gauna *Bsd.* shaped like the preceding, above azure with a black apex of the forewing and a jet- *gauna*. black stigma. Beneath ashy-grey with 2 obsolete undulate transverse bands and an interrupted submarginal line. Costa Rica.

P. 760, line 20 from above, after *bolima* insert:

Th. muela *Dyar* has the same shape of wings, only on the hindwing it has a more projecting *muela*. anal angle and a less projecting small tail on the lower median vein. Above grey-brown, the basal areas of both wings towards the proximal margins with a light blue tinge. Beneath very much like the preceding, the basal area of the forewing darker than the marginal area, the apex more olive-yellowish; on the hindwing the two colours are sharply separated by a line being interrupted in the cell; the olive-yellowish distal area is traversed by a faintly darker macular line. Peru.

P. 760, line 29 from above: to *anosma* place: **oribata** *Weymer*.

oribata.

P. 766, ,, 9 ,, : after *janthina* insert:

Th. janthodonia *Dyar*. Forewings black, below the cell for two thirds dark metallic blue, like the *janthodonia*. whole hindwings. Beneath dark slate-grey, marked bluish-white like the preceding; the area between the anal spots is not green, but blue, the spot of the tail with a red pupil. Expanse of wings: 25 mm. Vera Cruz.

P. 766, line 9 from below: cancel *bianca* *Mschlr.*

P. 767, ,, 17 ,, above: to *arindela* add: f. **rinde** *Dyar* is beneath brownish ashy-grey, on the *rinde*. forewing with but one postmedian band from the costal margin to the lower median vein; the subterminal band of the hindwing dusted silvery. West Mexico (Sierra de Guerrero).

P. 769, line 10 from below, to *cambes* add: (= *syvix* *Dyar*).

P. 771, ,, 27 ,, above, cancel *primnoxa* *Dyar* and add the name as synonymous to *elsa* *Hew.* (line 16 from above).

P. 771, line 10 from below, cancel *zenaida* *Dyar*.

P. 779, ,, 16 ,, above, for *deserta* insert: **sierrae** *Dyar*.

sierrae.

P. 780, ,, 9 ,, below, to *uterkudante* add: (= *elimes* *Dyar*).

P. 780, ,, 6 ,, , for *ostrinus* *Dyce*. place: *bianca* *Mschlr.*

P. 783, ,, 22 ,, above, for *castrena* *Jones* place: *tella* *Schs.*

P. 783, ,, 18 ,, below, after *facuna* insert:

Th. muridosca *Dyar* is only as large as *nana*, above black, in the disc of the forewing and hindwing *muridosca*. violet-blue with the same scent-spot in the cell of the hindwing; anal angle hairy, without a tail. Beneath light blue-green, on the hindwing irregularly strewn with black scales, which are accumulated to small black spots between the veins in the distal area, the largest being situate between the median veins; the white, proximally black lunar line like in *nana* obsolete above the radial veins. Expanse of wings: 20 mm. Mexico (Jalapa).

P. 784, line 5 from above, after *semones* insert:

revenae. **Th. revenae** Dyar is above black with a dark blue lustre; beneath lustrous dark green with traces of an interrupted white line proximally bordered with black, on the hindwing; a black marginal line, fringes grey. Expanse of wings: 21 mm. Mexico (Misantla, Vera Cruz).

P. 784, line 19 from above: *Schausi*-group: the species mentioned here are genuine *Lycaenidae*, although they were placed to the *Erycinidae* by Dyar. For the group the name of the subgenus: **Ipidecla** Dyar is to be placed. Two new species are to be added:

miadora. **I. miadora** Dyar. Above unicolorously grey-black, towards the base on the forewing and almost on the whole hindwing spread over with a blue grey. Beneath blue-grey, with jet-black veins, with one orange-red basal spot each at the costal margins of the fore- and hindwings. Expanse of wings: 22 mm. West Mexico (Guerrero).

monenopteron. **I. monenopteron** Dyar (144 n) is similar, smaller, above dark grey, the forewing in the basal half metallic blue. Under surface lighter grey, on the forewing at the cell-end towards the costal margin with black shades, hindwing with black veins. Sierra de Guerrero.

P. 784, line 9 from below, after *sesara* insert:

brocela. **Th. brocela** Dyar I place here owing to its exterior resemblance. Above grey-brown, the costal margin of the forewing narrow light red, at the base broader; a black discal spot. Hindwings spread over with a bright blue with a small red anal-angular spot; on the lower median vein only one long, at the end white tail. Beneath light ashy-grey, both wings traversed by a brick-red median band which appears on the hindwing more in the shape of a spot and is distally bordered narrowly with white; before the distal margin a double whitish macular line; the spots on the tails small, red, the anal-angular spot with a black pupil. Captured in Peru (Cotahuasi) in October, at an altitude of 9000 ft.

P. 786, line 3 from above, after *lemuria* insert:

bennetti. **Th. bennetti** Dyar. Above bright metallic blue, on the forewing with a duller and darker discal spot; apex broad black, also on the hindwing. Under surface blackish-grey with an ochreous tint, on the forewing the straight postmedian is white, proximally bordered with black, the fine submarginal band is defined on the veins. The postmedian band of the hindwing is coloured like on the forewing, though irregular, extended outwards above and below the lower median vein. Spots of the tails small, red, with black pupils, proximally bordered with black. Peru, Pampaconas River, taken in August.

P. 788, line 12 from above, to *proba* add: (= *climicles* Dyar).

P. 788, „ 22 „ below, after *purissima* insert:

nippia. **Th. nippia** Dyar. Above blackish, on the forewing the basal third below the cell and the cell as far as the end light blue, hindwing up to the upper radial vein likewise blue. Under surface white, forewing with a faint white distal line, defined on the veins; on the hindwing the postdiscal band is thin, black, distally white with a flat W towards the anal margin; the small red spots on the tails are both pupilled in black; a feeble submarginal line. Expanse of wings: 25 mm. Mexico (Sierra de Guerrero).

P. 794, line 24 from below: add *devia* Mschr. as the synonym to the following species: *xeneta* Hew.

P. 795, „ 1 „ above: to *atrox* add *gentilla* Schs. as synonymous.

P. 797, „ 22 „ „ : for *tirrhaea* which becomes synonymous place: **pan** Drury.

P. 799, „ 23 „ „ : after *carla* insert:

minniles. **Th. minniles** Dyar. Above black, hindwing and proximal part of the forewing dull dark blue; without any tail. Beneath bright green, the proximal margin of the forewing grey. The postdiscal band of the hindwing broken up into lunar streaks, proximally black, distally white, between the lower radial and upper median vein and at the proximal margin receding considerably; a feeble cell-end streak; both the small spots on the tails red, towards the base black, the one at the anal angle besides white. Expanse of wings: 20 mm. Mexico (Guerrero).

P. 801, line 22 from above, *gentilla* Schs. is to be cancelled.

P. 802, „ 29 „ below, after *seudiga* insert:

viggia. **Th. viggia** Dyar. Forewing above black with a dark blue diffuse spot below the cell for $\frac{3}{4}$ of the length of the wing; hindwing almost quite blue. Beneath white-grey, forewing at the cell-end with a feeble dark ellipse, close behind it with a curved grey, proximally red-yellow band; an antemarginal blackish, proximally white line, somewhat angular on the middle radial vein; the discal area is of a purer white. Hindwing marked the same, the postdiscal band more intensely red, angled on the veins, a light grey submarginal lunar line, distally removed between the radial veins; at the border small roundish nebulous spots, the spot on the tail with a red ring. Expanse of wings: 19 mm. Mexico (Santa Rosa, Vera Cruz).

P. 802, line 4 from below, after *hyccara* insert:

heraldica. **Th. heraldica** Dyar. Above black, forewing towards the base somewhat blue, hindwing except the broad black costal margin and proximal margin quite blue. Beneath grey, towards the margin lighter, the postdiscal band white, proximally red-grey, on the hindwing defined on the lower radial vein with a flat W at the proximal margin. Both the spots of the tails red, the upper one with a black pupil. Expanse of wings: 20 mm. Panama (Porto Bello).

P. 804, line 10 from above, after *gamma* insert:

Th. ulia Dyar. Shape of the wings like in the preceding; above grey, spread over with a light blue, *ulia*, particularly in the proximal half of the hindwing; fringes and base of the costal margin light red-brown. Beneath ochreous-brown, the proximal part of the forewing lighter, both the wings with two broad, irregular, brown transverse bands through the cell, on the hindwing feebler; an antemarginal row of small, indistinct, dark spots, on the hindwing the space behind them is lighter. Peru (Cantas).

P. 806, line 21 from above, add to *canus* the synonym: (= *bunnirae* Dyar).

P. 806, „ 25 „ below, add to *sangala* the synonym: (= *callides* Dyar).

P. 806, „ 14 „ „ add to *amphrade* the synonym: (= *posetta* Dyar).

P. 807, „ 1 „ above, cancel *promissa* Mschlr. and place it as the synonym to *sabinus* Fldr.
p. 806, line 6 from below.

P. 807, line 9 from above, add to *serapio* the synonym: (= *mesca* Dyar).

P. 807, „ 16 „ „ add to *tella* the synonym: (= *castrena* Jones) and place the species on
p. 783, line 20 from above!

P. 808, line 20 from below, after *yojoa* insert:

Th. tyleri Dyar differs from *yojoa* (159 k) by its greyer, less reddish under surface, the postdiscal *tyleri*. lines being straighter, not broken or angular, without a red border; the spot of the tail small, without any red colour which is also absent at the anal angle. Peru (Coropuna), taken in October at an altitude of 14 500 ft.

P. 808, line 13 from below, to *thordesa* add the synonym: (= *zenaida* Dyar).

P. 809, „ 27 „ „ after *bubastus* insert:

Th. laceyi Barn. & McD. differs from *eurytulus* (145 h) by the orange anal angle of the hindwing *laceyi*. above and three more small, black antemarginal spots being white towards the base. There is a little tail. Under surface mouse-grey, the postdiscal spots orange instead of brown; in the basal area of the hindwing only one spot; the W distinctly prominent. Texas, described according to a ♀.

P. 810, line 1 from below, after *tarania* insert:

Th. otoheba Dyar is above black-brown, the anal angle of the hindwing spotted orange. Beneath *otoheba*. brown-grey with a somewhat oblique postdiscal band of the forewing as far as the lower median vein, and an irregular submarginal band. Hindwing with a broad carmine median band, which is defined on the lower radial and distally bordered by silvery-white arcs between the veins; the blackish subterminal line is dentate and distally red as far as up to the lower radial, forming a large red spot below it; between the spots of the tail a blue-dusted area. Expanse of wings: 21 mm. Dominica, in June and July.

P. 811, line 14 from below, after *eryx* insert:

Th. burica Dyar is above bright blue with a large black stigma and a broad black apex of the forewing. *burica*. Beneath bronze-grey, the cell of the forewing dark diaphanous, otherwise marked like *eryx*, but without any red at the spots of the tail, between which there is black and white dusting. Expanse of wings: 25 mm. Panama (Trinidad River).

Beside the species stated quite a number of American *Lycaenidae* have been described by old authors, such as FABRICIUS (*agrippa*, *anacreon*, *chiton*, *dindus*, *moncus*), GODART (*bazochii*, *cithonius*, *ergeus*, *gabelus*, *megarus*, *nebis*, *sinnis*, *strophius*) and others, which it has hitherto been impossible to throw light upon; probably the greater part will represent synonyms with other species; for this reason we have left out these mostly insufficient descriptions.

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B. Grypocera, broad-headed day-butterflies.

As has already been stated in Vol. I, p. 329, this second Division (HAASE denominates it *Netrocera*) is not equivalent to the first to which all the families of day-butterflies belong except the Hesperidae *), inasmuch as it comprises only a single group of relatively homogeneous butterflies, whereas the *Rhopalocera* comprehend very heterogeneous formations, such as *Morpho*, *Chrysophanus*, *Leucidia*, *Leptocircus* etc. The differences of the two divisions have already been briefly stated at some other places **) and are here once more classified in the following characterization of the *Hesperidae*, to which we may, therefore, refer.

1. Family: Hesperidae, Skippers.

The *Hesperidae* are mainly distinguished from the other day-butterflies by the forehead being very broad, for which reason the eyes are farther remote from each other than in any *Rhopaloceron*. This conspicuous mark, together with the robust structure of the body and a great uniformity in the shape and venation of the wings served LATREILLE as the foundation for his thoroughgoing separation of this family from the stock of the other day-butterflies. LATREILLE's grouping is also aided by special morphological examinations; as for instance REUTER's palpal spot exhibits great conformity with all the *Hesperidae*, but differs entirely from that of all the other day-butterflies ***). Moreover, the venation strikingly deviates from that of the *Rhopalocera*, so that all the systematizing authors, although they did not give expression to it in the scheme of their systems, still laid great stress upon the caesura between the *Hesperidae* and the other day-butterflies, e. g. HERRICH-SCHÄFFER, SCUDDER, TRIMEN a. o.

The number of Hesperid forms enumerated by MABILLE *), about 2150, has since that time increased by several hundreds, although numerous species having often expressly been quoted as doubtful by the said excellent expert of this family turned out to be synonymous or not maintainable for some other reason. The general geographical range has been dealt with already in Vol. I, p. 329; we may once more state here that America is extraordinarily favoured in the distribution of the *Hesperidae*. In spite of the great flying power of the butterflies, they are still absent in a comparatively great number of islands, and consequently seem to be entirely unfit for flying across the ocean. But where compact tracts of land allowed them to rest temporarily from their flight, which seems to be a necessity to them, they were able to spread across enormous districts. Thus *Calpododes ethlius* is distributed over more than 70 degrees of latitude, some *Hesperia* (e. g. *alveus*) over 150 degrees of longitude. As the Hesperids are besides very fond of flying much and far and to a certain degree even of wandering, it is natural that they vary little in the countries connected by strips of land even at great distances; but as they never fly very unintermittingly, there had to be formed particular local forms in all the places separated by the sea. In the far remote New Zealand the *Hesperidae*, being yet well represented in Australia, are entirely absent, and even in the Canary Islands, which are not difficult to reach for palearctics, there is but 1 species, *Adopæa actæon*, however in the form *christi* regarded by many as a separate species.

We have already pointed out (Vol. I, p. 329) that the *Hesperidae* are extremely heliophile. This explains their immense preponderance in the Tropics, which decreases rapidly as soon as we come to the temperate zones, while on proceeding farther towards the polar regions the state of things is reversed. Only one single Hesperid can be regarded as an arctic butterfly, *Hesperia centaureae*, and since in the north there is a less interrupted connection of countries between the New and Old World, this species is also the only one which America has in common with any of the other faunae of the world, i. e. with the palearctic fauna. All the other, almost 2000 Americans are separate species, although some North Americans can yet be recognized to be representatives of certain palearctics.

The eggs of the *Hesperidae* vary greatly in their size, but in their exterior shape they are rather exactly conformable. They are hemispherical, above more or less flattened, ribbed radiately, and often distinctly reticulated. The ♀♀ deposit them always singly and, as far as is known to me, also always in moderate numbers on the food-plant or its surroundings. The food-plant itself may belong to nearly all the families of plants; very many species live on the most highly developed plants, such as Papilionaceae, Caesalpineae and Mimosae, whilst on

*) Some writers spell the name „Hesperiidae“ so as to distinguish it from the mythological name of the daughters of Atlas. But since both words are equally derived from the name „Hesperia“, they may as well be homonymous.

**) Vol. I, p. 329.

***) Certain resemblances in the exterior of the palpi between the *Hesperidae* and some genera of other groups of day-butterflies (*Eurybia*, *Allotinus* etc.) prove to be merely externally morphological.

*) WYTSMAN. Genera Insectorum, Fasc. 17 (1904).

the other hand even Monocotyledons are visited by them, such as grass, cereals, Liliaceae, bananas, and even palm-trees which are otherwise scarcely uneatable for larvae. Between some plants and the Hesperids visiting them there even seems to prevail sometimes a mutual relation in such a way that the butterflies have also become the fructifiers of those blossoms of plants, the leaves of which are eaten up by their larvae; at least this would make it comprehensible that for instance *Calpododes ethlius* is provided with an enormously long siphon so as to enable it to visit the deep calyces of the Canna-blossoms, which are otherwise accessible to very few butterflies, and the leaves of which serve their larvae as food. I presume that by similar symbiotic relations the sphinx-like long siphons of other Hesperid genera (*Perichares*, *Gangara* etc.) can be explained.

The larvae are mostly almost bare, i. e. very sparsely covered with downy hairs standing singly, or with very short plush-like hair; their colour is frequently green, but often also snow-white or bone-coloured, in the larger species frequently speckled or striped like a zebra. The head usually sits on a very much strangulated neck; it is mostly downwards broader, tapering off towards the vertex, where it is, however, also sometimes notched and thereby of a cordiform shape. Very peculiar is a bristly hairing of the face as it often occurs in the *Pyrrhopyginae*; in other species the frontal vesicles show dark, eye-shaped dots which, together with a nose-like middle-streak and transverse mouth-marking are apt to recall a human face or that of a monkey. The larvae rarely live in the open, but in feeding they sometimes creep out from the leaf in which they are encased; some also only put out their head in feeding. The case itself consists of a leaf being rolled up at the margins but it may also represent a more or less highly artistic funnel which very often discloses the larva's abode to the collector. The larva, in the tropical forms, grows up rather quickly, but it usually feeds only at night even in the most day-loving species. For the pupation most of them do not construct a real cocoon, but the transformation takes place rather incompletely protected in a carelessly guarded niche of a leaf, out of which one sees the pupa looking out being often very brightly coloured, frequently snow-white or hoary bluish.

The pupae entirely have the shape of the body of the imago, so that the broad head and the far separated eyes can already be recognized. The head frequently exhibits a cone directed forward sometimes prolonged in the shape of a thorn; between the costal margins of the wing-cases, the case for the siphon runs along, which is often so long that it projects beyond the anal end of the pupa like a spike. The pupa likewise sometimes has a marking like a face, i. e. blackish dots on the eyes, sometimes with a dark middle streak. The pupal stage usually lasts for a short time in the tropics, often only a week or little more. The wings very quickly grow stiff after creeping out, so that the imago is able to fly already a few minutes after leaving the pupa.

As we have already mentioned in Vol. I, p. 329, the main flying time is concentrated upon the hottest months of the year in the temperate districts; only few fly in spring, and these often appear yet in a second generation in midsummer. In the Northern States most of the Hesperids fly only in one generation from June to August. In the Southern States they are often followed by another generation in autumn, and in Tropical America very many Hesperids in almost the same frequency fly all the year round without any pause; thus, during a longer spell of dry weather in which the other day-butterflies sometimes disappear nearly altogether, they form the only remaining moment enlivening nature. Almost without exception they eagerly visit flowers some of which have such a great attractive power upon the Hesperids, that they are continually surrounded by whole swarms of them. They very rarely come to the bait; I never met with them on the sap dripping from trees, but they often drink water from pools and banks of rivers. They eat dry materials serving them as food by pouring out drops of liquid from the anus on to the base from which they suck then, as KÜHN proved for Indian and K. DIETZE for European HESPERIDAE. DIETZE observed that an *Augiades sylvanus* dropped more than 200 of such clear small drops on the base to be sucked up (at intervals of about 5 seconds), which it then wholly absorbed again by means of the siphon being bent below the body. Their flight is somewhat skipping, in floating darts, for which reason they are called „skippers“ in English. It is a buzzing and mostly impetuously swift flight, so that most of the species are thus scarcely recognizable, let alone to be overtaken. Nevertheless it is easy to capture them, since they are not timid, and not only allow themselves to be approached when drinking from the flowers, but also mostly remain sitting without the least fear when they are on the look-out on the top of a bush or on a twig projecting into the open space.

The Hesperids have two modes of keeping their wings. One part of the species keeps the wings always spread out flatly, often in such a way that the apical part of the forewing appears as if bent down over the horizontal line; in these species the distal margin is frequently angular, lobate, gnawed out, dentate or laciniiform. The genera, taking up this position, mostly consist of velvety black or deep dark brown species (*Eantis*, *Achlyodes*, *Antigonus*, *Sebaldia* etc.); they are nearly all confined to the tropics, where they represent the more northern *Thanaos* and *Thorybes*. The second group, containing more species, folds the wings together while being at rest, like the day-butterflies do, whereas in the swarming time, while it settles down only temporarily, it keeps the wings in such a way that the forewings are turned upward parallel to each other, though not

folded together, whilst the hindwings are being kept somewhat more flatly, sometimes even almost appressed to the base; hereto belong the greater part of the *Pamphilini*. In drinking from the blossoms, these species frequently keep their wings quite closed (*Carystus*) or also, like the *Lycaena*, half-opened (*Hesperia*).

The position of the wings often influences the colouring, which may be very variable in the *Hesperidae*. If, as for instance in *Carystus*, always only the under surface of the wings is exhibited, it is variegated, on a yellow or azure ground there run stripes or bands of intense colours; if the under surface is kept concealed, as for instance in *Pythonides*, *Milanion*, *Systasea* etc., the under surface is generally pale with a blurred marking. Very common are small or large vitreous spots and dots like the pricks of a needle, often arranged in chains, and very characteristic for the different species by their arrangement. Metallic colours, particularly golden green or a brilliant blue, are exhibited by whole genera and comprise both wings and body; there may even occur the strange picture that quite unicolorously black butterflies have metallic green or golden heads.

Among the colours deep red is represented the least (*Haemactis sanguinalis*), whilst an ochreous golden yellow occurs most frequently. Still oftener, however, the upper surface of the wings is of a deep black-brown, only interrupted by small vitreous spots and sometimes with a very bright colour in the anal area. There are no leaf-green *Hesperidae* known, nor any with a colour like the bark of trees as is exhibited on the under surface of the wings by so many species of day-butterflies, such as *Caligo*, *Vanessa*, *Polygonia* etc.

Nor do the Hesperids imitate leaves, as it occurs so often in America (*Anaea*, *Catopsilia*, *Historis*). There are certainly sleeping specimens sometimes found dreaming on a blossom, but the variegated species still seem mostly to creep into their hiding-place for their repose. The robust body, the narrow wings, of which the hindwings are often very closely folded together, facilitate their creeping under the cover of the vegetation, so that a protective colouring has not been developed. The great resemblance of the members of one genus among each other (compare e. g. t. 162) makes us presume that exterior influences have been of very little formative value and that the different species have only differentiated themselves from one another to such an extent as was necessary for the distinction. The number of enemies seems to be very small for the imagines; I saw birds from the family of the *Ixus* snatching at them and chasing the numerous swarming Hesperids away from the bushes, but these birds did not chase them systematically, as for instance a flycatcher or fire-tail chase the flies, but the noisy and furious pursuit of the *Ixus* seemed to be more of an amusement and to arise more from the playful bent characteristic in the *Ixus jocosus*. On the whole, the *Hesperidae* remained entirely unmolested by the birds; I even was able to observe humming-birds shunning in their visit to flowers those blossoms that were occupied by larger Hesperids such as *Eudamus*, *Thymele*, *Goniuris*.

The *Hesperidae* seem neither to be particularly attacked by parasites. I once had more than 50 bags filled with pupae of *Calpodus ethlius*, which I had gathered in the agricultural park of Palermo near Buenos Ayres; not one specimen supplied a parasite. Also the numerous pupae of *Pythonides cerealis* which I discovered in the course of a year in Brazil, all yielded sound imagines. If the latter species were very much pursued, it would be incomprehensible that their pupae exhibit a bright, snow-white colour and hides so incompletely in the green leaf being scarcely drawn together, that it can immediately be noticed even at greater distances.

The Hesperids have neither developed any colours and markings which would have to be regarded as the effects of mimicry. Except some very rare resemblances occurring now and again in otherwise non-mimetic genera, all the Hesperids exhibit an exterior found in no other group of butterflies remarkably repeated; and the sporadic cases of (mostly also only very slight) resemblance are so rare that they may very well be explained as casual, particularly since such casual resemblances exist also in such cases where mimicry is out of the question owing to the incongruence of the patriae, as for instance between *Rhopalocampta aescylus* *) from West Africa and American *Pyrrhopyge*! **). In a somewhat greater number of cases we find resemblances of *Hesperidae* with members of the family belonging, however, to another genus. Thus certain *Aethilla* and *Pyrrhopygopsis* resemble the *Pyrrhopyge* to such an extent that one of these genera was denominated after it. In a similar way we find in some *Phocides* the otherwise very sporadic scheme of colouring of certain *Jemadia*. But although it is a nonsense to explain a resemblance, as for instance of *Limenitis archippus* to *Danaidu archippus*, by the „homogeneous effect of homogeneous exterior influences“, we still can easily imagine a certain equally working effect of the same exterior forces in the close affinity of similar species. However, the biological conditions of the *Hesperidae*, particularly of the neotropical species concerned here are still too little known to give a definite answer to the question whether there occurs any mimicry in the *Hesperidae*.

As the most destructive enemies to the Hesperid imagines, beside amphibia and reptiles, the Arthropoda are to be looked upon. Above all the spiders. Although the Hesperids, owing to their powerful wings, often free themselves from the nets of weak spiders, I often found in Brazil whole galleries of horizontal, somewhat purse-

*) Comp. Vol. XIII, t. 72.

**) Comp. Vol. V, t. 162.

shaped cobwebs with tough, almost sticky threads in which there hung not only large *Hesperidae*, but also large and powerful *Papilio* (*polydamas*) and even beetles of the size and strength of large Scarabaeids. I furthermore observed Mantids that had picked out their post at the ends of twigs in so insidious a way that the Hesperids flew directly into their arms.

The division of the Hesperids causes rather great difficulties by reason of the great conformity of the species and genera among each other. For a long time nobody wanted to try a scientifically well-founded classification, until WATSON, in 1893, solved this task in a very satisfactory way by the abundant material of the British Museum. He based his task upon the preliminary studies by SCUDDER and created a system of the *Hesperidae*, which was later on yet improved by P. MABILLE by furnishing a catalogue of the whole family which, though it seems to be not quite complete and somewhat superficial in the citations, can still scarcely be excelled in its zoogeographical argumentation, and which is therefore retained here without any essential alteration.

The *Hesperidae*, in their total appearance, are mostly small butterflies, not exceeding an expanse of few centimeters.

The head being conspicuously broad, as we have already mentioned, is not vertically, as in the *Rhopalocera*, but more horizontally placed, as in the Sphingids; so that the frons shows upwards instead of forwards. The palpi have a stout basal and middle joint, they are mostly also very much inflated, the terminal joint being small, styloid. Also the antennae distinguish the *Hesperidae* from all the other day-butterflies by the club being not only bent round like a hook, but also comprising far more antennal joints than in any other family of day-butterflies. Particularly the apex of the spindle often bends off in a sharp flange rectangularly from the shaft.

The thorax is uncommonly robust and its chitinous cuirass offers great resistance to the pressure of the fingers; it is, however, not elastic and tenacious, as for instance in a Danaid or Zygaenid, but delicate, and the animals having once been pressed are no more able to recover their flying power; legs and antennae are easily broken, but particularly only a rude touch at the head suffices to make the palpi drop.

The abdomen, though it sits broadly on the thorax, is nevertheless slender, pointed, not heavy nor strongly inflated. It is usually just as stout in the ♂ as in the ♀, so that it is often not easy at first sight to distinguish the two sexes. It is never seen conspicuously lengthened.

All the 6 legs are adapted for resting. They also exhibit a peculiarity by the hindlegs, mostly having 2 pair of well-developed spines, as we find them also in *Heterocera*.

The venation likewise greatly deviates from that of the other day-butterflies. The cell of the forewing is usually very long and narrow, sometimes open like that of the hindwing. The subcostal veins branch off at almost the same distances, so do the radial veins from the discocellular, wherever it is present. Thereby the phase is shown that all the subcostal veins of the forewing touch the costal margin, which imparts to the scheme of venation a peculiar primitive appearance.

Subfamily: **Pyrrhopyginae** Wts.

By the peculiar shape of the antennae, this well-characterized subfamily, which is confined to the New World in its distribution, is always distinctly to be separated from all the other *Hesperidae*. They are almost without exception large, strong species, on the bodies and wings of which dark colours, often with a deep blue or green lustre, are predominant, sometimes with hyaline spots. Most peculiarly almost all the forms find imitators among the other subordinate groups.

The club of the antenna is strong, quite cylindrical or also slightly conic, rarely very little pointed, but never with the long, turned down point which we find otherwise. The club is usually more or less strongly bent at the beginning of the thickening. The cell of the forewing is long, at least $\frac{2}{3}$ of the length of the costal margin, mostly longer. Vein 5 of the hindwing is often absent. The ♂ has never an overturned costal fold. While being at rest, the wings are usually spread out horizontally.

1. Genus: **Pyrrhopyge** Hbn.

This genus comprises very numerous, partly extremely similar species which are difficult to separate and perhaps neither are separable as distinct species. Nearly all are large, strong animals with black body and wings, often with a bronze-green or deep blue lustre, often spotted red on the head and abdomen. On the broad, mostly pointed forewings the discoidal runs very obliquely, the upper median vein rising somewhat behind the middle of the cell. On the hindwing the lower radial and upper median vein rise unpetioled, the middle radial being absent. The hind tibiae are strongly haired outside.

The *Pyrrhopyge*, according to statements by Dr. SEITZ, are conspicuous animals owing to their almost invariably one-coloured black colouring and the mostly glaring-red ends of their bodies. When they fly past swiftly, these red places are difficult to notice for the human eye, but the resting insect makes the impression

as if its body were bleeding in front and behind. As the flight is impetuously swift, the animal escaping its enemies scarcely needs any protection, whereas on the topmost branches of bushes of 1 or 2 m height, which are chosen by the ♂♂ as their point of observation, one of the most dangerous enemies of the tropical butterflies is lying in ambush, the praying-cricket which even catches butterflies of the size of strong *Papilio* with a sure dart and is able to devour several large specimens a day. In the waiting attitude taken up by the *Pyrrhopyge* on the tip of the twig, the forewings are half erected, the hindwings somewhat more lowered; a position sometimes met with in European *Adoptra* or *Pamphila*, whereas other *Pyrrhopyginae*, such as the blue-striped *Jemadia*, the *Mimoniades*, *Myseclus* etc. keep their wings spread out when at rest, about like *Thanaos tages*. The larvae of *Pyrrhopyge*, as far as we know, are thinly haired on the body, shaggily on the head, brown or reddish with yellow, zebra-like stripes. They live on different trees, so on Gujava pear-trees (*Psidium pyrifera* and *pomiferum*), in leaf-cases. The pupae are haired, too. The imagines fly along the roads and skirts of woods in a raving, somewhat skipping flight and are fond of drinking from wet places on the roads. The *Jemadia* and *Mimoniades* love the umbels of blossoming bushes, where they are met with in the company of similarly coloured Hesperids from other groups, such as *Phocides* and *Pyrrhopygopsis*.

P. hyperici *Hbn.* (162 a) is easily recognized by the rounded white spot on the upper surface of the *hyperici*. hindwing and the oval white spot on the hindwing beneath at the base. Brazil.

P. sergius *Hpffr.* (= *leucoloma Ersch.*) (162 a) is above quite black with white fringes, red head, *sergius*. collar and anus; beneath the hindwing exhibits a blue-white, broad marginal band extending from near the proximal angle almost to the costal angle and being somewhat traversed by the dark veins. From Colombia, Peru and Brazil.

P. araethyrea *Hew.* (= *araethyrea Mab.*) (162 a) is somewhat larger, otherwise the same, but the *araethyrea*. blue-white marginal band of the hindwing is present also on the upper surface and is traversed above by 6, below by 7 black veins. Ecuador.

P. aziza *Hew.* differs from *araethyrea* by the marginal band being narrower above and crossed only *aziza*. by the rays of five black veins. New Granada.

P. garata *Hew.* (162 a). Here the blue-white marginal spot only extends to the upper median vein, *garata*. but instead it extends proximally to the discocellular and is traversed only by 3 black rays. The red head is posteriorly bordered with black. Surinam.

P. scylla *Mén.* (162 a) has above and below black wings with white fringes which are smoky on *scylla*. the forewing from the middle radial vein towards the apex. Head and palpi are black, shoulders, shoulder-covers and anus red, and the anterior femora are spotted red, too. Peru and Bolivia.

P. decipiens *Mab.* is the same, only of a deeper black, and on the costal margin of the hindwing *decipiens*. beneath it exhibits a red spot between the costal and subcostal. Ecuador.

P. melanomerus *Mab. & Boull.* differs from *scylla* (162 c) by the anterior femora being quite black *melanomerus*. and by the fringes of the forewing being smoky only at the extreme apex. Described from Bolivia.

P. papius *Hpffr.* is recognizable by the red palpi being bordered with black. The fringes of the forewings *papius*. are brownish from the lower radial vein to the apex. South America.

P. creona *Dre.* (= *aurora Mab.*) (162 a). Like *scylla*, but of a browner ground-colour, beneath *creona*. dusted red, the shoulder-covers prolonged to long hair-pencils. Bolivia.

P. charybdis *Dbl.* (162 b) is bluish-black with carmine head and anus, on the vertex there is a thick *charybdis*. black dot, behind it a black transverse streak. The fringes are of a pure white as far as the apex. South America.

P. zenodorus *G. & S.* (= *thasus Btlr.*) is alike, but the head and anus of a lighter red, without *zenodorus*. the black dot on the vertex, the fringes of the forewing are smoky from the upper radial vein to the apex. Mexico.

P. polemon *Hpffr.* (162 b) has, like in *zenodorus*, towards the apex brownish fringes of the forewings, *polemon*. and the dot on the vertex is absent, but it has the deep carmine of *charybdis*. Brazil.

P. menecrates *Mab.* (162 b) differs from the preceding immediately by the red base of the shoulder- *menecrates*. covers. Distributed from Brazil to Bolivia.

P. zeleucus *F.* (162 b) is much larger than *charybdis* and has red-spotted anterior femora. Brazil. *zeleucus*.

P. lampros *Hpffr.* (162 b) is separated from *zeleucus* by black anterior femora and the fringes being *lampros*. somewhat brownish at the ends of the veins, particularly at the apex of the forewing and proximal angle of the hindwing, so that the latter look somewhat undulate. Brazil.

- rhacia*. **P. rhacia** Hew. (162 b) is at once discernible from all the species by the white palpi and the white-striped anterior femora, as well as the red thorax. Minas Geraes.
- proculus*. **P. proculus** Hpffr. (= *zeleucus* Erichs., nec F.) (162 b) differs from the preceding by only the anterior head being red, the posterior head being black as far as the eyes. Guiana.
- roscius*. **P. roscius** Hpffr. exhibits a red belt across the middle abdominal rings, but the head is quite black, only the shoulders being spotted red and the anus red. From Brazil.
- dulcinea*. **P. dulcinea** Plötz (162 c) has 3 white transverse lines on the head: on the forehead, between the antennae and on the hindhead; palpi, base of shoulder-covers and apex of abdomen are red, the shoulder-covers finely bordered with red or orange-yellow. Mexico to South America.
- semidentata*. **P. semidentata** Mab. This species has, like the 6 following ones, a white base of the hindwing beneath, also the base of the forewing is white; the fringes of the hindwing are speckled black on the ends of the veins, on the forewing white as far as the upper median vein, from there to the apex black. Colombia.
- intersecta*. **P. intersecta** H.-Schäff. (162 c) differs by the fringes of the hindwing being only speckled in the proximal half, those of the forewing being almost entirely white. The red head is spotted black, the thorax quite black. South America.
- denticulata*. **P. denticulata** H.-Schäff. deviates from the preceding by the fringes being yellowish at the base. Head, prothorax and apex of abdomen are red. South America.
- fluminis*. **P. fluminis** Btlr. (162 c) has unspeckled fringes like the 4 following species. On the brownish under surface of the forewing only the costal-marginal base is white, the fringes blackened only at the extreme apex. Amazon.
- bixae*. **P. bixae** Cr. (= *maenas* F., *tiribazus* Plötz) has the whole base of the forewing beneath blue-white, the fringes of the forewing are smoky from the upper median vein. Guiana.
- latifasciata*. **P. latifasciata** Btlr. (162 d) is recognizable by the extraordinarily broad white basal spot of the hindwing, whereas the base of the forewing remains quite black; fringes like in *bixae*. Colombia and Peru.
- phidias*. **P. phidias** L. (162 c, d) differs from *latifasciata* by its smaller white basal spot, the fringes being only brownish from the lower radial vein towards the apex. From Guiana and South America.
- infantilis*. **P. infantilis** Drc. (162 c) is smaller than the preceding, the white spot on the hindwing beneath is placed somewhat more into the middle of the wing, indistinct and strewn with a dark tinge. Peru.
- agenoria*. **P. agenoria** Hew. (162 d) has, like the 6 following species, a red-spotted proximal angle of the hindwing, and is recognizable by its black head and abdomen (only the collar being red) and by the under surface of the hindwing being all black. Known from Pará.
- cruor*. **P. cruor** Drc. (166 a) entirely resembles *agenoria*, but in the middle of the forewing it shows a broad transverse band of modified, differently placed scales, which stands out against the ground of the forewing indistinctly darker. Described from Pozuzo (Peru).
- sanies*. **P. sanies** Drc. (164 d) entirely resembles *cruor*, but the band of the forewing is here white, semi-diaphanous and somewhat opalescent, it also runs more obliquely. From La Paz (Bolivia).
- styx*. **P. styx** Mschlr. (= *anina* Plötz) (166 a) has beneath a white-spotted base of the hindwing; head and prothorax are red, the red spot of the hindwing is very large and occasionally extends beyond the lower median vein. Colombia.
- passova*. **P. passova** Hew. (162 d) differs by an entirely black prothorax and the spot of the hindwing being bordered with black; the basal spot of the hindwing beneath is decidedly bluish. Amazon, Bolivia.
- gortyna*. **P. gortyna** Hew. (166 a) is at once recognizable by the hindwing being spotted green-white above in the middle. From Ega.
- galgala*. **P. galgala** Hew. (= *strigifera* Fldr.) (162 d) cannot be confounded with any other species for the yellow oblique line exhibited by the forewing above, by the hindwing also beneath. The body is black except the red hindhead and apex of the abdomen. Colombia. Brazil.
- gellias*. **P. gellias** G. & S. (162 d) exhibits along the distal margin of the hindwing high, triangular, silvery blue spots. Costa Rica.
- gazera*. **P. gazera** Hew. (162 d) differs from *gellias* by the broader and rounder shape of its wings, the distal-marginal spots are less high and extend only to the upper radial vein. South America.

P. jonas *Fldr.* (= *cydonia Drc.*) (162 e) is a large, beautiful species with undulate white fringes; *jonas*. palpi and abdominal apex are yellow. From Mexico.

P. josepha *Plötz* is very similar, but it has yellow fringes and pale red palpi. Brazil. *josepha*.

P. josephina *spec. nov.* (162 g) has the same shape as the two preceding ones, the fringes are white, *josephina*. with a yellowish tint, with a fine antemarginal orange-yellow line being on the forewing only as fine as a hair. Head, palpi and apex of abdomen are red, the femora black. Described according to 1 ♂ from the Songo, Bolivia (FASSL).

P. araxes *Hew.* (= *cyrellus Plötz*) (162 e) is above brown with several small hyaline spots, beneath *araxes*. the hindwings are deep ochreous-yellow with two dark brown macular bands, between at the costal margin another small spot and a broad brown margin which is proximally sharply defined by black lunae. Mexico to Colombia.

P. arizonae *G. & S.* (= *araxes Holl.*) is very much alike and may be the northern representative *arizonae*. of the preceding species, exhibiting on the hindwings beneath less distinct, more blurred transverse bands, and the marginal area being here blackish is not sharply defined. Arizona.

P. maculosa *Hew.* (= *agathon Fldr.*) (162 e) resembles the preceding, the ground-colour is blacker *maculosa*. and the small spots are smaller and whiter. The larger basal half of the hindwing beneath forms a broad, orange-ochreous area. Brazil.

P. erythrosticta *G. & S.* (162 e) differs from *maculosa* by a red spot below the base of the cell of *erythro-* the forewing. Distributed from Central America to Colombia. *sticta*.

P. cossea *Drc.* exhibits above on the forewing the same spotting as *maculosa*, the hindwing shows *cossea*. an orange-red band extending from the distal margin to the proximal margin. Beneath the base of the forewing is more extensively spotted orange, and at the costal margin there is a red dot. South America.

P. thericles *Mab.* is above quite black, also the fringes of all 4 wings black, only the head and apex *thericles*. of abdomen red; on the hindwing beneath a moderately large, white, oval spot. Bolivia.

P. cardus *Mab.* differs from *thericles* by a much larger white spot on the hindwing beneath, to which *cardus*. a minute blue spot corresponds above. Bolivia.

P. hylaeus *Mab.* is larger than *cardus*, the spot of the hindwing beneath decidedly blue-white, divided *hylaeus*. into 8 rays by the veins with a rounded end. Bolivia.

P. creon *Drc.* (= *cyclops Stgr.*) (162 e) is a large species of a metallic blue lustre, with a round red *creon*. spot near the proximal angle of the hindwing. Distributed from Honduras to Colombia.

P. aerata *G. & S.* (166 a) is bronze-green and exhibits at the cell-end of the darker hindwing 3 minute *aerata*. red spots. On the abdomen there are 6 yellow lateral spots. Bolivia.

P. hygieia *Fldr.* (= *bogotana Reak.*) (162 f) is likewise of a bright metallic blue lustre and has, like *hygieia*. the following species orange-red fringes of the hindwing, whereas the fringes of the forewing remain black as well as the head and apex of abdomen. The anterior femora are spotted red; the species is particularly characterized by the broad orange-red marginal band being situate before the fringes of the hindwing. Ecuador.

P. rufinucha *G. & S.* (162 f) differs from *hygieia* by the orange-red marginal band of the hindwing *rufinucha*. being much narrower, and by its red neck and palpal base. Bolivia.

P. aesculapius *Stgr.* (= *variegaticeps G. & S.*) (162 f). has black anterior femora and no orange *aesculapius*. marginal band in front of the red fringes of the hindwing. Central America.

P. insana *Stgr.* differs from the preceding by a narrow red marginal band before the fringes of the *insana*. hindwing, extending as far as the subcostal vein, and by its red neck. Described from the Chiriqui.

P. fassli *Boull.* approaches *hygieia* (162 f), but it deviates above by the brilliant blue lustre of *fassli*. the wings exhibiting a slight greenish reflection. Forewing with a moderate black marginal band; the hindwing shows a rather broad, red band extending beyond vein 6 almost to vein 7. Fringes of the forewing intermixed with red-orange. From *insana Stgr.* it deviates by the collar being black, not red, from *aesculapius Stgr.* by the red band not extending to the costal angle. Colombia, Peru, Bolivia.

P. kelita *Hew.* (162 h) is very easily recognizable by the 3 or 4 orange-red, in the ♀ more yellow *kelita*. longitudinal rays of the hindwing; of the same colour are the fringes, somewhat smoky at the extreme apex of the forewing. Head, palpi, borders of the shoulder-covers and apex of abdomen are red, the anterior femora spotted red. — The form *tristis Mab. & Boull.* has the fringes of the forewings smoky already from the upper *tristis*. median vein. The species is found in Bolivia, Peru and Ecuador.

- phaeox.* **P. phaeax** *Hpffr.* (162 g) is above black, sometimes with a slight brown tint, both wings with red fringes. Head and palpi are black, the collar laterally, as well as the borders of the shoulder-covers and apex of abdomen red, the anterior femora spotted red. On the base of the hindwing beneath, like in the 5 following species, a red spot. Peru.
- croceimargo.* **P. croceimargo** *Mab. & Boull.* (162 f) looks very much like *phaeox*, but it has quite black anterior femora and conspicuously lustrously black-striped veins on a more olive-brownish ground. Besides, the fringes are more yellow, not so red. Bolivia.
- martena.* **P. martena** *Hew.* (166 b) is distinguished by the very broad, orange-red marginal band of the hindwing, which is about 3 times as broad as the fringes. The base of the hindwing beneath exhibits a red spot which is radiately prolonged to the border below the costal vein. Ecuador.
- telassa.* **P. telassa** *Hew.* (162 g) is like the preceding, but the marginal band of the hindwing is less broad, and on the under surface the red basal spot of the hindwing is not prolonged to the border. Ecuador. —
- telassina.* f. **telassina** *Mab. & Boull.* from Pará has the fringes more or less dusted black, and the marginal band of the hindwing is obsolete.
- cleopas.* **P. cleopas** *Mab. & Boull.* has no marginal band before the broadly orange fringes of the hindwing; the veins are prominently lustrous black as in *croceimargo*. The apex of the abdomen and the interior margin of the shoulder-covers are red. Bolivia, Peru.
- mendax.* **P. mendax** *Mab. & Boull.* has much narrower fringes which are smoky towards the apex on the hindwing; the wings are of a purer black, the black shoulder-covers only at the end with some red hairs. Peru.
- pelota.* **P. pelota** *Plötz* (166 a). In the following species the red spot of the base of the hindwing beneath is absent. *pelota* is a species with a metallic green lustre and light yellow fringes, in front of which there is on the hindwing a light yellow narrow marginal line. Head, shoulders, and apex of abdomen are red, the anterior femora spotted red. — Larva of a bright red-brown, with yellow transverse belts; on *Psidium*. Brazil and Paraguay as far as Argentina.
- fimbriata.* **P. fimbriata** *Plötz* differs by deeper orange fringes, absent marginal line of the hindwing and black abdominal apex. Described from Mexico.
- rubricor.* **P. rubricor** *Mab. & Boull.* from Ecuador has deeper orange-red fringes which are blackened on the forewing from the middle radial vein to the apex, as well as by more extensively red shoulders and interior margins of the shoulder-covers.
- zereda.* **P. zereda** *Hew.* (= *rufipectus* *G. & S.*) (162 f) is a large, green and blue species, with a broad, proximally dentate, orange marginal band of the hindwing, the femora and legs spotted and striped orange. Head, palpi and abdominal apex quite black. Ecuador.
- chalybea.* **P. chalybea** *Scudd.* (= *zereda* *Hew.* part.) (126 g) differs from *zereda* by its black femora. From Mexico and Central America as far as Venezuela.
- amyclas.* **P. amyclas** *Cr.* (= *amiatus* *F.*, *laonome* *Swms.*) (162 f) has on the hindwing and on the forewing an orange-yellow marginal band before the fringes. Head, shoulders and apex of abdomen are red, the shoulder-covers black. Guiana.
- hadassa.* **P. hadassa** *Hew.* (162 f) has orange-red fringes and on the hindwing a dentate marginal band before them, which is broader than the fringes. The fringes of the forewing are mostly blackened towards the apex; the proximal half of the shoulder-covers is red. Ecuador and Bolivia.
- pseudohadassa.* **P. pseudohadassa** *Mab. & Boull.* has the marginal band of the hindwing not broader than the fringes which are on the forewings blackened to a small extent. The proximal border of the shoulder-covers is more narrowly red. From Peru.
- tenuis.* **P. tenuis** *Mab. & Boull.* Here the marginal band of the hindwing is still narrower than the fringes, more orange-yellow. Head and palpi are black, the proximal margin of the shoulder-covers narrowly red like in the preceding. Peru.
- hades.* **P. hades** *Mab.* (162 g) has quite black shoulder-covers, only laterally on the shoulders somewhat red; the head is likewise red with a large black dot on the frons and a black streak between the eyes; otherwise like the preceding. Bolivia.
- phylleia.* **P. phylleia** *Hew.* (162 g) differs from *hades* by deeper red fringes, the black frontal dot is much smaller, the streak between the eyes is absent. From Bolivia.
- haemon.* **P. haemon** *G. & S.* is like *phylleia* (162 g), but the narrow orange-red margin of the hindwing is here broad; from *hadassa* (162 f) it differs by the red head. Forehips black. Costa Rica, described according to a ♀ in the Coll. STAUDINGER.

J. fleximargo *Mab. & Boull.* is distinguished by its entirely black hindhead; the marginal band of the hindwing is broader between the median and radial veins than the fringes are, on both sides of them, however, narrower; the fringes of the forewing are blackened towards the apex. Bolivia.

2. Genus: **Amenis** *Wts.*

The genus contains animals greatly resembling the preceding in their exterior, chiefly distinguished by the bare posterior tibiae, the wings being generally narrower and the apex of the forewing somewhat prolonged.

A. pionia *Hew.* (162 h) is black with a deep blue metallic reflection, at the anal angle of the hindwing silvery blue, prominent spots; in the middle of the forewing there are two red spots below each other. On the under surface particularly the hindwings are blue-white towards the base, the fringes of all the 4 wings are of a pure white; the distal margin of the hindwing is concave in the ♂, the anal angle extended in the shape of a lobe. Colombia.

A. ponina *H.-Schöff.* is extremely similar, but it has dirty yellow, instead of white fringes, and those of the hindwings are much longer. Panama.

A. affinis *H.-Schöff.* (162 h). Above deep bluish black with white fringes, a carmine ring at the neck, palpal base and abdominal end; the sides of the abdomen are striped yellow, the costal margin of the hindwing beneath is narrowly orange-yellow, which colour extends as a fine marginal line before the fringes as far as near the anal angle. Colombia, Brazil, also in numbers from West Mexico (Guerrero).

A. amra *Hew.* (= *brasiliensis Mab.*) (166 c) differs from the preceding by red-striped abdominal sides and by the yellow marginal band of the hindwing beneath being broader than the fringes. Brazil.

A. proxima *Mab. & Boull.* has red-spotted abdominal sides and a red costal margin of the hindwing beneath; the marginal band before the fringes on the hindwing is of the double width of the fringes. The species is besides by one third larger than *amra*. Distributed from Mexico through Colombia as far as Paraguay.

A. ambigua *Mab. & Boull.* exactly resembles *Mysoria venezuelae* (162 h) and is only discernible by the veins. It has the broadest marginal band of the hindwing, which is more than twice as broad as the fringes. Brazil.

3. Genus: **Mysoria** *Wts.*

Entirely like the preceding genus in the structure except the petiolation of the upper median and lower radial vein of the hindwing, rising from above the lower cell-angle; the posterior tibiae are likewise bare.

M. sejanus *Hpffr.* (162 g) is above dull bluish-black with a red abdominal end; hindhead, collar and first joint of the palpus are black. Beneath the costal margin of the hindwing is not differently coloured. Bolivia.

M. thasus *Cr.* (162 h) is just the same but it has a red spot on the hindhead and on the middle of the collar, and a red first palpal joint. Colombia and Peru.

M. pallens *Mab.* is similar, but it has beneath in front of the white fringes of the hindwing a yellow marginal band. From Brazil.

M. decolor *Mab. & Boull.* differs from the preceding by the white marginal band of the hindwing being strewn black, instead of the yellow one, exhibiting traces of a red costal margin of the hindwing. Costa Rica and Panama.

M. venezuelae *Scudd.* (= *acastus auct. nec Cr.*) (162 h) has on the under surface a red costal margin of the hindwing, which grows a little broader towards the base, and a yellow marginal band before the white fringes, which gradually grows narrower towards the anal angle. The fringes of the forewing are of a pure white as far as the apex. Distributed from Mexico to Colombia.

M. cayennae *Mab. & Boull.* differs from the preceding species by the fringes of the forewing being blackened from the upper median vein to the apex, and besides the red costal margin of the hindwing beneath is equally broad as far as the base. — In the form **verbena** *Btlr.* (= *phidias F.*, *barcastus Sepp*) the otherwise yellow marginal band of the hindwing is red, like in: **acastus** *Cr.* in which form the red at the costal margin of the hindwing is extinct. Guiana.

4. Genus: **Yanguna** *Wts.*

This genus contains large, very strong animals. On the forewing the upper median vein rises far behind the middle of the cell, both the lower subcostal veins rising separately; on the hindwing the cell is longer than

half the costal margin, the middle radial is absent; the distal margin is feebly undulate or somewhat concave. The posterior tibiae show 2 pair of spurs.

- spatiosa.* **Y. spatiosa** Hew. (164 b) is a large beautiful species, black with a deep hemochrome base of the forewing and a larger discal spot of the hindwing, also the thorax and base of abdomen are intermixed with red hair. The forewing exhibits a broad tripartite band of vitreous spots in the middle and 2 shorter and narrower ones behind it, often between the second and third besides 2 minute vitreous spots; the under surface is dull lustrous indigo-blue with a red diffuse spot at the base of the hindwing. Ecuador, Colombia.
- cosyra.* **Y. cosyra** Drce. (164 b) differs from the preceding by yellow-red and less extensive basal spots; the 2 hyaline dots between the apical and postdiscal bands are always absent; the abdomen is more conspicuously curled whitish. Bolivia and Peru.
- staudingeri.* **Y. staudingeri** Plötz (164 b) is likewise very similar, but it has only 2 small hyaline spots, the discal one of which is shorter and broader; the basal spots are of a purer red, the under surface of a brighter metallic blue. In the form: — **cometides** Stgr. (164 b) the apical hyaline spots are also absent, so that there only remains the large discal hyaline spot, and besides the red colour is mostly more or less confined and may be entirely absent on the wings. From Peru and Bolivia.
- aspilos.* **Y. aspilos** Mab. & Boull. (164 b) is without any hyaline spots, it is entirely bluish-black with yellow-red basal spots. Peru, Bolivia.
- cometes.* **Y. cometes** Cr. (= *thelersa* Hew.) resembles *staudingeri* (164 b) above and has also only 2 rows of hyaline spots, the insignificant basal spots are rusty-red. Beneath distinguishable by its reddish ground-colour with black marginal spots on the hindwings, 2 or 3 of which at the proximal angle are pupilled white. Surinam.
- aspitha.* **Y. aspitha** Hew. (164 c) is very much like *cometes*, but it has only one small apical hyaline spot and yellow-red basal spots; the abdomen is curled white like in *cosyra*. Pará.
- rubricollis.* **Y. rubricollis** Sepp (164 c) has on the black wings only one tripartite hyaline discal spot, a black head and abdomen and red-spotted shoulders. Surinam.
- pedaia.* **Y. pedaia** Hew. (164 c) differs from *rubricollis* by its red head and apex of abdomen, whereas the shoulders remain black. Amazon.
- hadora.* **Y. hadora** Hew. (164 c) is the same, but it has a black abdominal apex, a red prothorax, and on the red head a black transverse streak between the eyes. Ega.
- arinas.* **Y. arinas** Cr. (= *arinus* F.) (164 c) has a more intense blue lustre on the wings, with a more rounded oval, hyaline discal spot; only the frons and apex of abdomen are black. Fringes of the hindwings white. Surinam.
- assaricus.* **Y. assaricus** Cr. (= *alsarius* F.) (164 c) is a smaller, somewhat more variegated species; beside the white discal band of the forewing it has 3 apical hyaline spots and 3 before them, with a red-spotted base; base and disc of the hindwing are red-brown with 2 black spots in it near the proximal margin; the fringes of the hindwing are speckled white. On the under surface the hindwings are spotted blue and white. The abdomen is red and black, with whitish rings and a red end; the head is black. Guiana.
- parima.* **Y. parima** Plötz (164 d) is likewise smaller and neater with a very concave excision of the distal margin of the hindwing. The black forewing exhibits beside the orange-red discal band two rows of hyaline spots, the hindwing a large red anal-angular spot. Thorax and head likewise red-yellow. Surinam to Bolivia.

5. Genus: **Mahotis** Wts.

Closely allied to the preceding genus, but it has only terminal spurs on the posterior tibiae, and the cell of the hindwing is shorter and does not reach the middle of the wing, the distal margin of the hindwing is entire and round; the upper median and lower radial vein rise together from the lower cell-angle or also short-petioled.

- crida.* **M. crida** Dbl. (164 e) may not belong here at all. The wings are black with a discal spot; head and apex of abdomen red. Nicaragua.
- nurscia.* **M. nurscia** Swms. (164 d) is above black with a large, brick-reddish, somewhat transparent discal spot, the hindwings have some blue macular markings particularly towards the distal margin. Beneath the hindwings are blue with a black marginal band and 2 black basal rays. Ecuador and Peru.
- malis.* **M. malis** G. & S. (164 d) is above very similar, but beneath quite different, the hindwings being black with 3 blue transverse bands, the middle one of which consists of separate spots. Colombia.

6. Genus: **Ardaris** Wts.

Distinguished from the preceding genus by a well developed middle radial of the hindwing, rising from the middle of the transverse vein. The posterior tibiae likewise show only 1 pair of spurs. Only 1 species:

A. eximia Hew. (164 e) is a smaller, very easily recognizable species, above black with an oblique *eximia*. band of 7 reddish-yellow spots and one behind the cell; the hindwings are diaphanous light yellow, in the disc with a slight red-brown tint and a black marginal and discal band. Venezuela.

7. Genus: **Metardaris** Mab.

Very much like *Ardaris* from which it differs by 2 pair of spurs of the posterior tibiae, and the middle radial of the hindwing rising nearer to the lower radial vein. Likewise only one, though variable species:

M. cosinga Hew. (164 e) has light-yellow, more or less grey-dusted forewings with thick black *cosinga*. veins, a broad black distal margin and a dentate discal band interrupted between the median veins. The long-haired black thorax shows 2 light-yellow longitudinal stripes; head red, with black spots, anal tuft red. — f. **obscura** Mab. has entirely black wings, the light yellow patches are visible only beneath. — In f. **sanguinea** *obscura*. *sanguinea*. Mab. the cell-spaces are of a deep red instead of light yellow. Bolivia. Peru.

8. Genus: **Granila** Mab.

Greatly approaches the following genus *Jemadia*, also exteriorly with respect to the colour and marking. The chief difference is the petioled rise of the upper median and lowest radial vein from above the lower cell-angle on the hindwing. Only one, sexually somewhat dimorphous species:

G. paseas Hew. (= ♀ *albimacula* Mab. & Boull.) (163 a). Above black with light-blue dusting *paseas*. at the base, oblique subbasal band and antemarginal spots; the discal oblique band and 2 spots towards the apex are light yellow in the ♂, white in the ♀, like an oblique band in the costal-marginal area of the hindwing. From Brazil.

8. Genus: **Jemadia** Wts.

A very comprehensive genus, in which it is rather difficult to define the species owing to the extraordinary resemblance among one another. Moreover, there are 2 series parallel to each other, one of which shows 4 white dots on the prothorax, the other exhibiting a white transverse streak instead. In order to facilitate the definition we keep to MABILLE's division of the groups into „*punctati*“ and „*lineati*“. The *Jemadia* are robust animals with white or blue marking and hyaline spots. The hindwings are often remarkably small, in the ♂♂ often with tooth-like projections on the inner-marginal and lower median vein, above them mostly with a deeply concave excision, and between the upper radial and subcostal vein often with an obtuse projection; more rarely the hindwings are quite round. The middle radial vein is absent, the lower one comes from the lower cell-angle, the upper median vein below it separately.

I. Group: **punctati**. Prothorax with 4 bluish-white dots beside each other.

J. hospita Btlr. (166 b) has, like the following species, a rather round, only feebly undulate distal *hospita*. margin of the hindwing. A characteristic mark of this species is the hindwing exhibiting on its black ground only one blue discal band and 3 fine, blue inner-marginal rays; the latter are all developed the same, diverging distally, the most proximal ray, extending to the proximal margin, is parted by a fine black longitudinal stripe. From Colombia and Brazil. — f. **pseudognetus** Mab. from Colombia is larger, the blue oblique stripes at the *pseudognetus*. base of the forewing are extinct, the narrow marginal band coherent; on the hindwing the most proximal ray of the inner-margin is shorter than the middle one. — f. **imitator** Mab. (163 c) (= *dorylas* Plötz, *vulcanus* Hew., *imitator*. *paulensis* Schs.) from Bolivia is above much blacker, the basal bands of the forewing quite extinct or absent, the marginal band broken up into spots; the postdiscal hyaline spot is absent altogether, or it is replaced by 2 minute hyaline dots. On the nearly quite black hindwing the middle inner-marginal ray touches the marginal band. — f. **ulyxes** Plötz (163 c) represents the species farther up to the north as far as Surinam; on the forewing *ulyxes*. the basal oblique band is extinct, the distal one quite narrow and slightly concave distally; the marginal band extends coherently to the postdiscal hyaline spot, then it makes a break and forms 2 small spots as far as the small apical spots; the inner-marginal rays of the hindwing are strong and broader than in the other forms. — Although these 4 forms are reported to exhibit slight differences of the sexual organs, yet I should take them to be a very variable species; the separation grows still more difficult, if there are very large

series spread before one, as for instance from FASSL's collection; then the differences become more and more obliterated.

vulcanus. **J. vulcanus** Cr. nec (Hew. 163 e) has a blue band more on the hindwing than the preceding species, the most proximal of the inner-marginal rays being removed more into the middle and forming a broad middle-band. On the forewing the basal bands are both well developed, the marginal band runs in a straight line to the apical hyaline spots and even beyond them. Colombia, Guiana.

hewitsoni. **J. hewitsoni** Mab. (166 b) looks like the preceding, but the middle band of the hindwing is only very short, triangular and almost white. Beneath on the hindwing the 2 black middle bands are united at the costal margin and proximal margin, the latter being all black. Colombia.

fallax. **J. fallax** Mab. (163 e) likewise resembles *vulcanus*, but it can easily be distinguished from all the species of the *punctati*-group by the distal, basilar band of the forewing forming with the lower blue inner-angular streak a single oblique band; the fine marginal band is somewhat more curved. On the hindwing the blue median band is removed more distally, the marginal band being narrow, broadly interrupted by the black veins. The under surface of the hindwings is almost entirely black, the broad black middle bands exhibiting only a fine metallic bluish-green thread between them. Brazil, Colombia.

patroclus. **J. patroclus** Plötz (166 c), according to the excellent figure by PLÖTZ, belongs to the *punctati*, not as MABILLE thought to the *lineati*, the species being allied to *fallax* from which it chiefly differs by the distal basal oblique band of the forewing not coalescing with the inner-marginal ray, but being separated afar. On the forewing there is only a small, square, postdiscal hyaline spot, above it there is a small blue oblique spot; the 5 apical hyaline spots are relatively large and well developed. The hindwings are marked the same, but the blue marginal band is considerably broader and coherent. On the under surface the 2 black middle bands are separated afar by the blue colour and neither coalescent at the costal margin; before the black border, in the blue colour, there is besides a fine, black, undulate line from the upper median vein to the costal-marginal vein. Described from Peru.

lisetta. **J. lisetta** Mab. & Boull. In the following species of this group the distal margin of the hindwing, at least in the ♂, is deeply concave with 2 distinctly dentate anal lobes, in the ♀ mostly rather rounded. In *lisetta* the marginal band of the hindwing consists only of 4 or 5 separate, small spots and does not extend to the proximal angle; the blue middle band is entirely absent. Described from Peru.

lecerfi. **J. lecerfi** Mab. & Boull. (163 d) has a still shorter marginal band of the hindwing, extending only to the lower median vein, and a short, triangular, pale blue median band. On the forewing above the blue marginal band only extends to the postdiscal hyaline spot. Guiana.

menechmus. **J. menechmus** Mab. (163 d) differs from the two preceding by a broader, coherent marginal band exhibiting a break only near the proximal angle. The blue marginal band of the forewing extends to the small apical hyaline spots. Brazil and Colombia.

gnetus. **J. gnetus** F. (= megalesius Hbn., sosia Mab.) (163 d) has been a somewhat doubtful species which I, however, unhesitatingly unite with *sosia*; it has the broadest marginal band of the hindwing, extending coherently to the proximal angle where it bends round and passes over into the inner-marginal ray; the two proximal inner-marginal rays are flown together to a broad, white-blue surface, the median band is absent. On the under surface the 2 black median bands are not directly united at the proximal margin, only coalescent at the costal margin. Widely distributed in Colombia, Guiana and Brazil.

hephaestus. **J. hephaestus** Mschr. (= zamorae Mab.) (163 e) is very similar, on an average somewhat smaller, above with a narrowed marginal band and middle inner-marginal rays, the median band being likewise absent. The under surface of the hindwing shows an entirely black proximal margin and the 2 black median bands are also united at the proximal margin. From Surinam as far as Colombia and Bolivia.

II. Group: *lineati*. Instead of the 4 dots at the prothorax a bluish-white transverse line.

polyzona. **J. polyzona** Latr. (= jamina Btlr.) (163 a) is easily recognizable by the great extent of the blue colour, particularly the blue costal margin, the postdiscal hyaline spots being scalariformly arranged below each other, and 4 apical spots. On the hindwing beneath the middle black band is forked like a Y on the middle radial. Guiana and Brazil.

zimra. **J. zimra** Hew. (163 a) is similar, but much less blue, mostly with an intensely greenish tinge; particularly the marginal band of the hindwing is very narrow. Brazil to Paraguay.

alburnia. **J. alburnia** Mab. (163 b) has above no blue rays or only traces of them below the median hyaline spot of the forewing, and beneath the black median band of the hindwing is not shaped like a Y, but broadly coalescent with the proximal one at the costal margin and proximal margin, like in the *hospita* group. Brazil.

J. zonara Hew. (163 b) has, like *fallax* (163 e) of the first group, the distal oblique band of the *zonara* forewing connected with the lower blue inner-marginal spot and round the proximal angle mostly continued as far as the marginal band. The black median bands of the hindwings beneath are on both sides coalescent. The species is more common, flying from the Amazon through Colombia as far as Ecuador.

J. suzetta Mab. & Boull. is larger than *zonara*; the 2 blue stripe-like spots below the median hyaline *suzetta* spot are broad, connected at the apex and separated from the broad, distal, basilar oblique band. Bolivia.

J. macleannani G. & S. (166 b) differs from the preceding by the Y-shaped, black median band *macleannani* of the hindwing beneath, the absent or almost extinct postdiscal hyaline spot of the forewing and blue proximal margin. Panama.

J. umbrata Mab. & Boull. Whilst the preceding 6 species show 4 small, apical hyaline spots, there *umbrata* are here and in the following species 5 of them. The median hyaline spot is broadly square, above it there is another 4-cornered blue spot; the blue marginal band extends to the postdiscal hyaline spot. Beneath the proximal margin is quite black, the black median band on the subcostal vein forked in the shape of a Y. Bolivia.

J. patrobas Hew. (= *vulcanus* Hew. [text]) (163 b) differs from *umbrata* by more blue at the proximal *patrobas* margin of the hindwing beneath, as well as by the bifurcation of the black median band taking place already below the upper radial vein. Brazil and Colombia.

J. azeta Hew. (163 b) has a still more extensively blue proximal margin of the hindwing beneath, *azeta* and the Y-shaped bifurcation of the black median band takes place already at the upper median vein or even below it. — In f. *melanina* Mab. (163 c) the black of the under surface is very extensive. Bolivia to *melanina* Paraguay.

J. brevipennis Schaus is unknown to me, it may belong near *zimra*; spots and bands decidedly *brevipennis* green; instead of the 2 postmedian hyaline spots of *zimra* there is but one; the median band of the uncommonly short hindwing is reduced to a green cell-end streak. Described from São Paulo.

J. ahira Hew. (163 a) is easily recognizable by the absence of all the hyaline spots and by the broad, *ahira* bluish-green inner-marginal band of the forewing. Pará.

10. Genus: **Nosphittia** Mab. & Boull.

By the habitus, colour and marking this genus entirely approximates *Jemadia* from which it chiefly differs by the posterior tibiae being without any spurs, but fringed above. Furthermore, as a unique mark of the whole family, the rise of the lower radial vein from the upper median vein on the hindwing is as equidistant as the upper median vein from the lower one. The distal margin of the hindwing is somewhat concave, the anal lobe well developed. Hitherto only one very imposing representative known:

N. perplexa Mab. (= *scomber* Drc.) (163 c) looks exactly like a gigantic *Jemadia*, also in the colouring *perplexa* and marking. The distal blue basilar oblique band of the forewing passes over into the lower inner-angular spot, like in *J. zonara* or *fallax*, and from there it turns round without any interruption into the marginal band which reaches as far as the apical spots. On the hindwing the inner-marginal rays form a broad white patch, the median band is represented by a large blue spot. On the collar a white stripe, no dots. Brazil.

11. Genus: **Sarbia** Wts.

A very uniform group of black, imposing animals marked yellow and red, with entire-margined wings and a rather pointed apex of the forewing. On the forewing the lower median vein rises close at the base, the upper one behind the middle. The hindwing is very feebly undulate at the border; the discocellular is shorter than half the length of the wing; the upper median vein rises petioled with the lower radial. The posterior tibiae have two pair of spurs.

S. spixii Plötz (164 f). On the black forewing the spot below the cell of the broad yellow median *spixii* band touches the lowest of the 6 yellow apical spots; at the base of the forewing there is above the proximal margin a minute yellow spot. The hindwing exhibits a broad yellow discal area which is divided on the transverse vein by a black transverse stripe cohering with the broad black proximal margin. Palpi, anus and venter are red, the latter with a black streak before the last ring; abdominal sides, shoulders, and a stripe on the shoulder-covers are yellow. Patria doubtful.

S. xanthippe Latr. (164 f) was described according to but one ♀ and is above almost just like *spixii*, *xanthippe*, though the basal spot of the forewing is smaller, the yellow bands of the forewing do not touch each other, and the base of the hindwing is extensively black. Beneath on the hindwing the black stripe of the transverse vein is a broad band; the red venter exhibits a black streak in the middle, so does the red hindhead. Rio de Janeiro.

- oneka*. **S. oneka** *Hew.* has no basal spot of the forewing; the yellow bands of the forewing are very narrow and consist of separate spots; on the hindwing the 5th and 6th spots of the yellow band, counting from the proximal angle, are removed towards the base. The under surface of the hindwing is preponderantly black with 2 yellow spots at the base. The red head is posteriorly bordered with black; the black abdomen shows beneath a yellow stripe, the sides being red. Ecuador.
- antias*. **S. antias** *Fldr.* (164 f) has somewhat broader yellow bands than the preceding, red palpi and collar, the head being otherwise black. The venter is striped red. Brazil.
- erythro-*
soma. **S. erythrosoma** *Mab.* (164 f) is immediately recognizable by the red 4 last abdominal rings being narrowly bordered with black; the short apical band runs straight. Amazon.
- damippe*. **S. damippe** *Mab. & Boull.* (164 f) is above similar, but it has a black abdomen, the venter being black, too, with double red macular bands; the sides exhibit small yellow-red spots. The hindwings are beneath black with a broad, regular median band and a four-cornered basal spot from the costal margin to the middle of the cell. Head red, between the eyes spotted black. Brazil.
- catomelaena*. **S. catomelaena** *Mab. & Boull.* is distinguished by an entirely black abdomen with a blue lustre, the venter being red only on the first rings; head and palpi are red, the hindhead striped black. Wings marked very much like in the two preceding. Minas Geraes.
- hegesippe*. **S. hegesippe** *Mab. & Boull.* has broader yellow bands on the wings, touching each other like in *spixii* (164 f). The hindwing beneath exhibits a yellow subbasal band being broad at the costal margin and tapering downwards, and a broad, regular median band. Head, anterior femora, and anus are red; the venter is bluish-black, the shouldercovers and the hair on the posterior tibiae are yellow. Guiana.
- pertyi*. **S. pertyi** *Plötz* (164 f) is very similar, but it has a red venter with a black median stripe and yellow lateral spots separated from the red by a black stripe. The red head shows a black transverse stripe between the eyes; the shoulder-covers are inside only narrowly margined with yellow. Brazil.
- martii*. **S. martii** *Plötz* (164 e). Here the distal band, running about parallel to the margin, extends down to the proximal angle; a large yellow basal spot is to be seen on the forewing; the hindwing shows a very broad median band projecting distally between the upper median and middle radial vein. The fringes of the hindwings are yellow, almost unspotted. Brazil.
- luteizona*. **S. luteizona** *Mab.* (164 b) is very similar, but it has black-speckled fringes on the hindwings, the still broader median band of the hindwing is distally somewhat blurred. Described from Mexico.

12. Genus: **Mimoniades** *Hbn.*

Large strong animals, the marking of which, on a black ground, corresponds to that of *Jemadia*, but the colour of the bands is a lighter or darker yellowish red, often with a brownish tint. The distal margin of the hindwing is only feebly undulate, but near the anal angle somewhat more distinctly dentate. On the forewing the lowest subcostal vein and the uppermost radial vein rise from the same place; the cell is shorter than half the costal margin, the transverse vein runs rectilinearly, the upper median and lower radial rise from the lower cell-angle.

- ocyalus*. **M. ocyalus** *Hbn.* (iphinous *Ky.*) (166 c) recalls *Mahotis nurscia* and *malis* (164 d). The black wings exhibit 3 brick-reddish, semi-diaphanous spots, the hindwing shows bluish bands at the proximal margin and distal margin. Brazil.
- eupheme*. **M. eupheme** *G. & S.* (163 f) is very variegated like the following: next to the base of the forewing is a blue band, then a broad red one in the middle, 2 spots nearer to the apex are yellowish-red; the hindwing exhibits 2 irregular blue bands. Anal apex black-haired. Peru, Ecuador.
- versicolor*. **M. versicolor** *Latr.* (= *mulcifer* *Hbn.*) (163 e) is similar, but the blue basal band is broader, the red median band narrower; above all distinguished by the red-haired apex of the abdomen. Brazil.
- sela*. **M. sela** *Hew.* (= *pityusa* *Hew.* pro parte) (163 f). Here and in the next species the forewing exhibits 4 red-yellow bands; recognizable by the under surface of the forewing showing 3 blue-white bands near the base and a more purely blue band near the margin. New Granada.
- periphema*. **M. periphema** *Hew.* (163 f) is above similar, but on the hindwing it has besides a broad, red-yellow marginal band. The hindwings are red-yellow beneath, with two equally broad, black median bands and a blue band in the broad black margin. From Peru and Bolivia.
- pityusa*. **M. pityusa** *Hew.* (= *porus* *Plötz*) (164 a) is the same, but on the hindwing beneath the blue marginal band is absent, and the distal one of the black median bands is narrower than the proximal one. Colombia, Peru.

M. punctiger Mab. & Boull. (164 a as *punctigera*) is very much like *pityusa*; the median band of *punctiger*. the forewing is pointed towards the proximal margin; the hindwing exhibits a regular, curved median band; the shoulder-covers are distally broadly bordered with red-yellow. Colombia, Bolivia.

M. minthe G. & S. (164 a) differs by the absence of the apical spots, so that there are only three *minthe*. red-yellow macular bands. — In the form: **egena** Mab. & Boull. the two postmedian spots are likewise absent. *egena*. Bolivia.

M. mimetes Mab. Somewhat smaller than *ocyalus* (166 a) which it superficially resembles entirely, *mimetes*. though the position and shape of the spots are different. The orange spot which in *ocyalus* is between veins 3 and 4, is parted in two by vein 4. The apical band is curved, composed of 5 spots, whereas in *ocyalus* it consists of 4 spots. The blue and yellow stripes run likewise somewhat different in *mimetes*. Guiana.

M. baroni Mab. & Boull. differs from all the others by the forewings being strewn with yellowish- *baroni*. green scales and exhibiting 3 rows of spots; fringes and palpi are yellow; the median band of the forewing is more red. The hindwings are black with two yellowish-green discal bands. Ecuador.

13. Genus: **Croniades** Mab.

Differs from the preceding genus only by much longer hindwings with the anal angle extended like a tooth. Only three species are known:

C. machaon Dbl. & Hew. (164 b) shows 3 yellow-white bands on the black forewing, on the hindwing *machaon*. a broad, yellow median band and reddish-yellow fringes. Brazil, Rio Grande do Sul.

C. pieria Hew. (164 b) recalls again more *Jemadia* by the scheme of markings; the spots of the forewings *pieria*. are light lemon-coloured, partly diaphanous, the hindwings are red-yellow with two black median bands being united towards the proximal margin, and a black border. Amazon, Colombia.

C. auraria H. Drce. is very closely allied to *pieria*, the yellow marginal band of the forewing is broader, *auraria*. the black postmedian band of the hindwing much narrower and towards the costal margin almost extinct; the hyaline band of the forewing has a somewhat different shape and position, and the hindwing is beneath in the proximal half of a much deeper orange than in the costal half. From La Paz (Bolivia).

14. Genus: **Microceris** Wats.

The antennal club is decidedly more slender and more pointed than in the allied genera. The hindwings are not prolonged as they are in *Croniades*, but dentate at the border. On the forewings both the lowest subcostal veins are situate next to each other at their rise. Only 1 species:

M. variicolor Mén. (164 e) shows on the black ground towards the margin blue, deeply notched *variicolor*. lines, and discal and subapical yellowish macular bands. Anal apex, palpi, and stripes on the thorax are likewise ochreous yellowish. Minas Geraes.

15. Genus: **Agara** Mab. & Boull.

The only species has a still longer antennal club being pointed almost like a thread, so that one might be inclined to doubt whether it is a *Pyrrhopygina* at all. The hindwings are somewhat longer than in the preceding and deeply notched. Both the lowest subcostal veins of the forewing are close next to each other, the two median veins rise close beside each other.

A. pardalina Fldr. (164 g) is black, on the forewing with large, discal and smaller subapical hyaline *pardalina*. spots. Thorax and bases of wings red-brown, on the hindwing very extensive and spotted black. The hindwing beneath exhibits instead of the red-brown a bluish-white colouring and in it, towards the base, two black transverse bands. Colombia.

16. Genus: **Myscelus** Hbn.

Differs chiefly from the preceding genus by the shape of the hindwings: they are not so uniformly dentate, but more undulate, below the somewhat extended apex sinuous, between the anal angle and the next tooth likewise deeply concave; the antennal club is likewise slender and pointed.

- illustris.* **M. illustris** Mab. (164 g) has, like the following species, a round hyaline spot on the hindwing. The colour is a bright golden-yellow with thick black veins and on the hindwing with three spotted antemarginal bands interrupted by black. Peru and Bolivia.
- nobilis.* **M. nobilis** Cr. (= *salus* F.) (165 a) extremely resembles the preceding, the black veins of the forewing somewhat less thick, the black border broader and the 3 black bands of the hindwing are more regularly coherent, and on the median veins, the uppermost radial and the subcostal vein more strongly dentate towards the margin. From Surinam.
- hages.* **M. hages** G. & S. (165 a) has a much smaller hyaline spot of the hindwing, the 3 black bands of the hindwing being much less pronounced. Central America.
- amystis.* **M. amystis** Hew. (165 a) is not so bright yellow, with much finer black veins and a narrower black border, the 3 bands of the hindwing stunted, partly interrupted. On the much lighter yellow under surface the black lines are much finer and consist only of short, black streaks. From Peru, Colombia and Bolivia.
- orbis.* **M. orbis** Mab. (165 a) has a more brown colour, a broader black border of the forewing, particularly broader at the proximal angle, with medium-fine black veins and somewhat nebulous, irregular bands of the hindwing, that are partly connected with each other. The hyaline cell-spot of the forewing touches the inner-marginal vein, in *amystus* it does not. The under surface is yellowish-brown, on the forewing the black markings are almost entirely absent, on the hindwing they are fine, prominently black. From Brazil to Paraguay.
- epigona.* **M. epigona** H.-Schäff. (164 g) is similar, above more yellowish-brown, the border not so black, the lines of the hindwing of a clearer, more prominent black. Beneath quite light-yellow, almost without any black marking, also on the hindwings only light brownish traces of it. Venezuela. Perhaps the northern representative of *orbis*.
- sothis.* **M. sothis** Mab. (165 a) approximates particularly *phoronis* from which it chiefly differs by the under surface of the hindwing, in which the rusty brown ground-colour being broadly yellow at the base is traversed by 3 undulate brown macular bands, the two lower ones of which are nearer to each other, whereas *phoronis* has four black undulate lines at equal distances from each other. Brazil.
- aethras.* **M. aethras** Hew. i. 1. is dark brown with a broad, black border of the forewing. The hindwing shows 3 stout, coherent, black transverse bands being broadly separated from each other. On the under surface the bases of the wings are whitish, the hindwings exhibit distinctly marked transverse bands. Brazil.
- orthrus.* **M. orthrus** Hew. is more red-brown, the brown border of the forewing exhibits 9 white dots. The macular bands of the hindwing are not black, but more rusty brown. Brazil.
- phoronis.* **M. phoronis** Hew. (165 a). This well-known species is of a bright rusty yellow, the forewings almost without the dark border. The hyaline spot of the hindwing is very large, round, sharply defined with black. On the under surface the proximal halves of the wings are sharply defined by a light yellow, with the three usual transverse bands being brown here. Widely distributed in Colombia, Bolivia and Peru.
- belti.* **M. belti** G. & S. (166 c) differs by the darkened apical part of the red-brown forewing and a much smaller hyaline spot of the hindwing. Beneath the wings are lighter, the distal macular band of the hindwing touches the margin. Central America.
- persela.* **M. persela** Mab. (166 c) is above of a purer brown, beneath in the proximal halves of the wings light greenish yellow, marked similarly as *phoronis*, but the distal transverse band is situate nearer to the border and is more angular. Brazil. — In the form: **caucanus** Stgr. the under surface of the hindwing is without the black transverse band before the hyaline spot, and without the basal stripe; the distal part is so very much darkened, that the black band bordering on it proximally and the one being situate in it are scarcely prominent. The upper surface is also a little darker, of a more monotonous brown colouring than in *phoronis*. Cauca Valley.
- santhilarius.* **M. santhilarius** Latr. (164 g) has, like the following species, no hyaline spot of the hindwing. Above rusty brown with a broadly darkened border; the small subapical hyaline spots touch the discal spot by being moved forward towards the margin between the median veins. On the under surface the hindwing is yellow with 3 black bands and a broad black border. Guiana to Brazil, Amazon.
- epimachia.* **M. epimachia** H.-Schäff. (165 a) is above more purely rusty yellow without the darkened border of *santhilarius*. The discal spot is not so much pushed forward, the subapical spots do not touch it. The yellow of the hindwings beneath is purer, more extensive. The hindwings are more prolonged. Peru to Paraguay.
- pegasus.* **M. pegasus** Mab. (165 b) is smaller, more dirty rusty brown. The hyaline spots of the forewings are similar to those in *santhilarius*. The under surface of the hindwings is of a purer yellow, without any brown transverse bands, only discally there are occasionally traces of one. Palpi and legs are yellow. Guiana.

17. Genus: **Azonax** *G. u. S.*

Distinguished from the most closely allied genera by the entire-margined hindwings being only on the upper radial somewhat angular. The antennal club is obtuser than in the preceding, and in contrast with the allied genera the upper median and the lower radial of the hindwing are not petioled. 1 species:

A. typhaon *Hew.* (165 e) looks like a *Myscelus*: above rusty brown with one large, quinquepartite, *typhaon*. discal vitreous spot and 4 small apical ones, between them at the costal margin 2 more of them. The hindwing exhibits one large, round, white antemedian spot and a row of black dots behind it, two of which are pupilled white. Nicaragua.

18. Genus: **Oxynetra** *Fldr.*

Differs from all the other *Pyrhopyginae* by the straight transverse vein of the forewing. On the hindwing the middle radial vein is absent; the antennal club is rather pointed.

O. felderi *Hpff.* (165 b) is like the other very similar species of a greenish black with very large *felderi*. vitreous spots. The present species has a red ring round the 2nd abdominal segment. On the forewing the very large discal hyaline area is separated from the subapical one only by a small, narrow black stripe. Brazil to Peru.

O. semihyalina *Fldr.* (165 b) has no red-brown abdominal ring and a very much larger subapical *semihyalina*. vitreous spot separated from the discal one by a broad black band. Towards the margin on the veins pearl-coloured dust-stripes. Body and mesothorax are metallic green. Colombia.

O. confusa *Mab.* (= *annulata* *Stgr.*) (165 b) is similar, but the subapical vitreous spot is oval, not *confusa*. square as in the preceding, parallel with the margin there is behind it a band dusted with a pearl-colour, growing narrower towards the proximal angle. The ♀ described as *annulatus* has quite black wings without any vitreous spots and a red-ringed abdomen. Described from Peru.

O. hopfferi *Stgr.* (165 b) differs from the preceding by a much narrower vitreous band of the forewing, *hopfferi*. being only traversed by the median and its branches, by the absence of a white spot below the large double vitreous spot of the hindwing, and particularly by 5 bright orange-red transverse band on the dorsum of the abdomen; venter in the middle curled white. Shoulder-covers spotted orange. From the Chiriqui.

Subfamily: **Hesperiinae** *Wts.*

A large subfamily with not always uniform marks, so that a separation into two groups was necessary, so as to arrange in some degree the great number of forms. There are very large animals with extreme resemblances to certain genera of the *Pyrhopyginae*, down to small species. All have either a very short or horizontally projecting 3rd palpal joint, which is never bent up vertically. On the forewing there is never a discal stigma.

Group A.

The species of this group mostly have the antennal club bent round like a hook, sometimes in the shape of a sickle always terminating into a fine point. The chief mark of distinction from the 2nd group is the length of the cell of the forewing, always amounting to more than $\frac{2}{3}$ of the length of the costal margin. The transverse vein generally runs very obliquely; the middle radial vein never rises very near to one of the neighbouring branches. On the hindwing, often exhibiting a tail or a tooth on the submedian vein, the middle radial vein is always rudimentary. The ♂ usually exhibits on the forewing an inverted costal-marginal fold which is inside covered with scent-scales, often a hair-tuft on one of the wings or on the tibiae mostly having two pair of spurs, and a spine on the anterior tibiae. This group is almost exclusively confined to the nearctic region, only very few species being found in the old world.

1. Genus: **Phocides** *Hbn.*

Distinguished by a spindle-shaped antennal club on which only the fine tip is turned round like a hook. The thickly scaled 2nd palpal joint, being closely appressed to the forehead, is of a broad square shape, the very short 3rd joint being scarcely visible. The lower discocellular of the forewing is the longest and strongly curved. The lower median vein rises twice as far away from the upper one as from the base, the upper one close before the cell-end. The hindwing is much prolonged towards the anal angle, but it does not show a real tail. The tropical parts of South America homes about two dozen of species.

Ph. oreades *Hew.* (165 e) resembles about *Mimoniades sela* (163 f), but in the basal area of the forewing *oreades*. there are, like in all the convergent *Hesperiinae*, longitudinal rays, in contrast with the basal transverse bands

- of the corresponding *Pyrrhopyginae*. These rays are partly bluish-green like the marginal spots of the hindwings.
- oreas*. The under surface, however, almost entirely corresponds to that of *sela*. Peru. — *oreas* *Stgr.* from Bolivia has broader bands, which are yellowish-red also on the hindwing. — *debora* *Stgr.* has quite light yellow bands.
- charonotis*. **Ph. charonotis** *Hew.* (165 e) differs from *oreades* by quite green basal rays of the forewings, without any yellowish-red, and much more extensive red-yellow bands of the hindwings, which are also beneath of the same colour, not blue. Bolivia.
- yokhara*. **Ph. yokhara** *Btlr.* (165 e) is similar, but it has quite red-yellow basal rays of the forewings, the yellowish-red colour of the hindwings is still more extensive, and the black ground-colour on the upper and lower surface of the forewings is suffused with a coppery brown. Magdalena River, Peru.
- pialia*. **Ph. pialia** *Hew.* (165 e), in contrast with the preceding, is banded almost quite greenish-blue, only the 3 large discal and apical macular rows remain red-yellow. Distributed from Mexico through Guatemala as far as Brazil.
- lilea*. **Ph. lilea** *Reak.* (= *albicilla* *H.-Schäff.*, *cruentus* *Scdd.*, *socius* *Btlr. & Drc.*, *decolor* *Mab.*, *denuba* *Plötz*) (165 d) is a dark species, above and beneath black with a red discal streak of the forewing, above in the basal half tinted greenish-blue. Palpi and neck orange-red, fringes white. Like *pialia* most widely distributed from Mexico to Brazil.
- palemon*. **Ph. palemon** *Cr.* (= *polybius* *F.*, *cruentus* *Hbn.*, *spurius* *Mab.*, *phanias* *Burm.*) (165 d as *spurius*) is very similar, but in the anal part of the hindwing it has broad, orange-yellow fringes. Brazil to Argentina.
- unimacula*. — **unimacula** *Mab. & Boull.* has only one red cell-spot, the costal part being absent.
- imbreus*. **Ph. imbreus** *Plötz* (165 f) resembles *lilea* (165 d), but instead of the red discal streak it has a metallic blue one, and the ring round the neck is not orange, only the palpi. Central America.
- charon*. **Ph. charon** *Fldr.* from Brazil approximates *palemon* (165 d as *spurius*); of a blackish-green lustre, costal margin and base of the forewing strewn with lighter atoms, the fringes posteriorly white; beneath the base is sooty brown with a blue proximal margin, 3 spots at the base of the costa and the dusting at the costal margin whitish-green. Hindwing on both sides bluish, the costal and proximal margins violettish-blue, fringes at the apex white, at the hinder angle yellow; beneath of a lighter lustre, with a dispersed basal and discal strewing.
- tophana*. **Ph. tophana** *Plötz* (= *scythron* *G. & S.*) (165 d) likewise resembles *palemon* regarding the ochreous-yellow anal-angular fringes on the hindwing, but it has no discal streak at all on the black forewing, showing but very little green reflection at the base. Minas Geraes, Peru, Uruguay, Paraguay.
- distans*. **Ph. distans** *H.-Schäff.* (165 e) from Central America, Colombia and Cuba entirely resembles a *Jemadia*, but, like in *oreades*, instead of the *Pyrrhopyginae*-transverse bands it has basal longitudinal rays of the forewing. This species and the 4 following are very much alike and are often confounded. It is best distinguished on the hindwings beneath: *distans* shows here 3 blue bands, the middle one being short, extending only to the middle of the wing, equally distant from the two others, the most proximal one being at the same time the shortest. *PLÖTZ*' figure of the supposed *Jemadia dysoni* from the Chiriqui, in spite of the *Pyrrhopyginal* antennae, I can only take to be a *Phocides* with a wrong head, on account of the basal longitudinal rays; it entirely resembles *distans*, and is only of a somewhat purer blue. — **tenuistriga** *Stgr.* is larger, more extensively black, the discal band almost as narrow as a thread.
- pigmalion*. **Ph. pigmalion** *Cr.* (= *gnetus* *Latr.*) (165 e) is a larger, robust species. On the hindwing beneath the blue median band is thin, almost like a thread, bending outward at the lower end and touching the broad, spotted distal band in its middle; the latter band is shorter than the proximal band. The blue basal rays above are short. Colombia.
- belus*. **Ph. belus** *G. & S.* (165 f) entirely resembles *valgus* (161 a), but the 3 hyaline bands of the forewing are more compact and are placed more steeply, the proximal one ending broader on both sides, whilst in *valgus* it is tapering towards the hinder angle. From Mexico.
- perillus*. **Ph. perillus** *Mab.* I only know from the insufficient description and uncoloured figure: it is above black with the usual 3 hyaline bands, the apical and postdiscal ones of which are situate close together and both very large; the text does not mention any blue colour on the forewing, according to the figure, however, it is extensively present in the basal area and in marginal spots. The hindwing exhibits, parallel with the distal margin, a broad band of 8 blue spots, a broad discal ray and a triangular patch of whitish-blue at the base. Beneath similar to *distans*. From Colombia.
- valgus*. **Ph. valgus** *Mab.* (161 a) differs above from *pigmalion* by much stronger and longer basal rays extending almost to the discal vitreous spot, the blue colour being at any rate much more extensive. On the hindwing beneath the blue middle band is almost purely white, longer and broader, only below the broad proximal band

somewhat curved, without touching the distal band which is parted into 4 spots and ends pointedly on the upper median vein. From Cayenne.

Ph. thermus *Mab.* is immediately discernible by only 2 hyaline bands on the forewing above: an *thermus*. apical one, and a discal one, extending as a band up to the costal margin; the only remainder at most of the postdiscal band may be a small vitreous dot above the lower radial vein. Beneath like *pigmalion* (165 e), the basal band almost straight, the middle one narrow, longer, not touching the distal one, which is short and ending at the middle of the median. Bogotá.

Ph. hewitsonius *Mab.* (= *pygmalion* *Hew.*) is a doubtful species showing above long, blue basal *hewitsonius*. rays like *valgus* (161 a); the hyaline spots are uncommonly large and a little differently placed; it presumably coincides with one of the preceding species. The under surface is unknown.

Ph. batabano *Luc.* (= *mancinus* *H.-Schäff.*) (165 d) is not to be confounded with any other species. *batabano*. Above dark slate-brown, at the bases of the wings striped bluish-grey, and in front of the margin of the hindwing with an undulate line of bluish-grey. Beneath the hindwing shows yet 2 or 3 narrow blue stripes in the middle and near the proximal margin. Cuba.

Ph. urania *Dbl. & Hew.* (165 f) is very well recognizable by the long, bluish-green internerval stripes *uranias*. extending almost to the border. Common in Mexico. — **pyres** *G. & S.* is of a more brilliant green, the subterminal band, which in the form *texana* *Scudd.* is yellowish-brown, being coherent. *pyres*. *texana*.

Ph. vida *Btlr.* (165 f) is the same, but without any hyaline macular bands at all, so that there is a *vida*. broad, black apical area. Panama and Costa Rica.

Ph. lincea *H.-Schäff.* (= *grandimacula* *Mab.*). Above slate-coloured with a slight olive tint, similar *lincea*. to *Nascus phocus* (169 f) towards the base somewhat lighter, distally bordered darker with 3 hyaline bands placed like in *uranias* (165 f), but much broader, the discal one extending to the costal margin and here with a yellow tint. The hindwing exhibits a dark median band forking towards the costal margin. Beneath the forewings are lighter, towards the base yellowish, the hindwings reddish-yellow with 3 dark bands. Described from Brazil.

Ph. iphinous *Latr.* is a species having for a long time been erroneously taken for another, resembling *iphinous*. *oreades* (165 e) on the forewings, but the basal rays are entirely absent, and the brick-reddish discal band is above and beneath of the same with, something like in *nurscia* (164 d). The hindwings are likewise quite black, with only one narrow blue subterminal band and a similar blurred spot at the proximal margin. Brazil.

Ph. thrasea *Hew.* (= *mazares* *Mab.* [*Stgr. i. l.*]), a small doubtful species, is above black with a *thrasea*. steel-blue reflection, at the apex of the forewing brownish, in the apical part of the forewing, and at the anterior angle and border of the hindwing beneath light violet. Head and palpi, collar and shoulders, as well as the apex of the abdomen of a deep dark red. Epanse of wings: 35 mm. South America.

Ph. maximus *Mab.* is only known to me from the description and figure: Above black, the spots *maximus*. of the forewings diaphanous reddish-yellow, the discal ones below the cell much broader; hindwing with 3 blue rays and an antemarginal row of blue crescents. This species on the whole recalls *Mimoniades versicolor* (163 e), but it is much larger. Brazil.

Ph. nakawara *Weeks* almost coincides with *distans* (165 e) in the description, but there is only one *nakawara*. white apical spot mentioned on the forewing, and on the hindwing the triangular blue median band is absent. 55 mm. From Venezuela.

2. Genus: **Tarsoctenus** *Hbn.*

Closely allied to *Phocides* from which the species differ by the 3rd palpal joint projecting a little more and being bare; besides the transverse vein of the forewing is not so oblique, and the middle discocellular is somewhat longer than the lower one; the hindwings are here also longer and extended into a round anal lobe. In the ♂ one of the two spurs of the posterior tibiae is prolonged, and the proximal end of the tarsus shows on each side beneath a comb of yellowish bristles, covering this spur when the tarsus is stretched out. In *papias* this is not so much developed. Quite a number of species, copying the most diverse kinds of *Pyrrhopyginae*, are found in Tropical America.

T. plutia *Hew.* (165 g) is a variegated species; on the black ground with a red base of the wings *plutia*. and a red thorax, a large discal vitreous spot of the forewing, a bluish longitudinal stripe below it, and a light blue submarginal band of the hindwing. Amazon District.

T. herrichi *H.-Schäff.* (165 f) is very similar, the red colour of a more yellowish tinge, besides there *herrichi*. are near the apex of the forewing 4 small vitreous spots, the blue rays are almost dying away. Patria unknown.

- erebus*. **T. erebus** Plötz (165 g). Here the vitreous spots and blue colour are entirely absent, so that it becomes very similar to *Mim. aspilos* (164 b). Described from Bahia.
- praecia*. **T. praecia** Hew. (165 g) greatly resembles *herrichi*, but the red colour turns here ochreous-yellow and is more extensive, assuming on the hindwing more the shape of an antemedian band and of a proximal-marginal ray, the light blue colour is more extensive, particularly on the hindwing, and on the forewing we notice bluish marginal lunae towards the proximal angle; besides there is a small, oblong hyaline spot between apical and discal hyaline spots. Brazil.
- corytas*. **T. corytas** Cr. (= *pyramus* Cr.) (165 g) has on the forewing 3 oblique, narrow hyaline bands and a reddish-yellow basal area, whilst on the hindwing the whole disc is reddish-yellow. Found from Surinam to Colombia.
- gaudialis*. **T. gaudialis** Hew. (161 a, as *dubius*) differs little from *corytas*. The ground-colour is a beautiful pure bluish-black, the basal areas of the fore- and hindwings are more red than yellow, and there appear blue submarginal diffuse patches, being still more prominent on the jet-black under surface. This beautiful species originates from the Chiriqui.
- bivittatus*. **T. bivittatus** Mab. & Boull. has, like *plutia*, a single tripartite hyaline band in the middle of the disc on the forewing; below it, between it and the border, 2 blue spots. The hindwing shows a double blue antemarginal band. Collar, thorax and abdominal base quite black, abdomen banded light blue; head black, palpi ashy-grey. From the Amazon.
- rufibasis*. **T. rufibasis** Mab. & Boull. (172 a). Forewing quite black with an oval, twice crossed, vitreous spot in the middle of the disc, the base of the wing with brown hair; hindwing with a light blue, straight antemarginal band flowing together with a brown discal band mixed with light blue before the inner-marginal area. Beneath the vitreous spot of the forewing is extended to the costa by a bluish continuation. The hindwing has 2 rather parallel, antemedian and postmedian bands; the whole rest of both wings beneath is black. French Guiana.
- perissographus*. **T. perissographus** Mab. (165 g) is on the forewing marked exactly like *corytas* (165 g), but the reddish-yellow colour is here blue, and the hindwing exhibits blue bands at the proximal margin, in the middle and before the border, converging towards the anal angle. From Panama.
- papias*. **T. papias** Hew. (165 g) is smaller, otherwise very similar to the preceding the vitreous spots of the forewings are much smaller, the blue colour somewhat more extensive, the blue basal area of the forewing parted by a black transverse band, and on the hindwing the black space between the median band and antemarginal band forks in the shape of a Y towards the costal margin, so that a blue, triangular costal-marginal spot is cut off. Brazil.

3. Genus: **Hypocryptothrix** Wts.

Allied to the preceding genus but in the habitus similar to certain *Yanguna*-species. The cell of the forewing is a little shorter, the two lower discocellulars about of the same length. The ♂ shows on the forewing beneath a hair-tuft at the base of the submedian. Only 1 species:

- teutas*. **H. teutas** Hew. looks like *Y. hadora* (164 c); it has a black body with a scarlet neck. The black forewing is lustrous green with a large, triangular, discal vitreous spot, the hindwing with white fringes. Described from the Amazon.

4. Genus: **Polythrix** Wts.

The separation from *Eudamus* is probably scarcely justified, for the sole difference consists of a secondary sexual mark in the ♂ exhibiting, like in the preceding genus, at the base of the submedian on the forewing beneath, a hair-tuft being covered by the strongly convex costal-margin of the hindwing. Only 1 species:

- metalles-cens*. **P. metallescens** Mab. (166 c) somewhat resembles the *Eudamus*-species of the *cholus*-group (161 c); above brown, tinted rusty-yellow, with 3 discal vitreous spots, placed almost like in *metophis* (160 d), and 3 small apical spots; the bases of both wings strongly haired metallic green, also beneath with a green reflection, on the hindwing with a white antemarginal band. Brazil (Manaos) and Panama (?).

5. Genus: **Eudamus** Swm.

The species of this well-known genus, mostly having long tails, show in the male a costal fold, except *curycles* and *orion*. The antennal club is bent round like a hook close behind the thickest part. The cell of the

forewing is very long, the transverse vein oblique, rectilinear; the middle radial rising nearer to the lower one, the lower median vein near the base, the upper one twice as far away from the latter as from the lower radial. On the hindwing the middle radial is absent, the submedian vein terminates into the more or less long tail. A great number of partly very similar species is distributed in Tropical America. About 80 forms are described; the animals are throughout dark brown, mostly with an oblique row of discal hyaline spots in the forewing. They very actively suck from flowers of all kinds and are, as a rule, not timid. Their flight, however, is very rapid. In sitting on a blossom, they always keep their wings half opened. Many are rather common.

E. dorantes *Stoll* (= *amisus* *Hew.*, *protillus* *H.-Schöff.*, *rautenbergi* *Skinn.*, *kefersteini* *Plötz*) (160 a). *dorantes*. A rather variable species, above olive-grey with a more or less brown tinge, in the disk with 5 square, yellowish hyaline spots, the 4 proximal ones of which extend in a line from the middle of the costal margin to the proximal angle and occasionally form almost a band; near the apex there are besides 3 minute hyaline dots, mostly a fourth at some distance below them. The under surface is light greyish-brown, on the hindwing often with violet or bluish-grey tints, 2 dark costal-marginal spots, 2 broader, undulate, antemedian and postmedian transverse bands and one narrower, submarginal band. — In the form **velinus** *Plötz* (160 a) from Bahia, which *velinus*. is not well reproduced by the figure, the hindwings beneath are of a darker violettish-grey with much narrower, distinct transverse lines, the distal spot of the costal margin being absent, the submarginal band terminating dark as far as into the border. Very widely distributed from Texas, Arizona, California, and Mexico to Venezuela; everywhere very common.

E. galbula *Plötz* (160 b) is a very similar species with narrower, more stretched wings; the middle *galbula*. discal macular band is placed more steeply, the 5th spot is more remote from it, the fringes are more profusely speckled light and dark. On the under surface the inner-marginal part of the forewing is almost white, the bands of the hindwings are less dentate, the whole surface not so indeterminate, the border darkened in uniform width. From Brazil.

E. santiago *Luc.* (= *cariosa* *H.-Schöff.*) (161 a). Above darker blackish-brown with much smaller, *santiago*. otherwise similar hyaline spots. The under surface is likewise much darker, particularly in the basal area almost purple-black, the transverse bands are more dentate and extend to the costal margin, the proximal one being united with the distal spot at the costal margin. — **retractus** *Plötz* from Venezuela, St. Vincent and Grenada, *retractus*. is presumably of the same species, of a more compact shape, with a shorter tail, and above the discal spots have almost disappeared. The typical form flies in Cuba. — **larius** *Plötz* (= *corydon* *Btlr.*) is said to differ *larius*. from typical *santiago* by its broader wings, the row of vitreous spots being more complete.

E. galapagensis *Williams* is quite similar to *santiago* (161 a), but not quite so dark, and the spots are *galapagensis*. arranged the same, but mostly larger. Beneath the violet spot in *santiago* is here of a lilac tint; the tails of the hindwings are shorter (only 3 mm). Chatham Island, Galapagos; common, from January to April and again in August; fond of resting in the shade of craggy rocks.

E. cenis *H.-Schöff.* (160 a) is a species with shorter tails and a rounder costal angle of the hindwings; *cenis*. above similar to *galbula* (160 b), but the hyaline macular band is narrower, and on the hindwing there appears a darker median band. Beneath likewise similar, but the inner-marginal area of the forewing is not so light. Colombia. — **athesis** *Hew.* has grey fringes and a lighter under surface. *athesis*.

E. procerus *Plötz* (160 b). In this species the hyaline spots of the disc, which are here of a pure white, *procerus*. not yellowish, are placed together in to a broad oblique band, also the apical spots rather large, the fringes of the hindwing yellowish, not speckled. Beneath similar as *galbula* (160 b), the proximal median band confined to a dark cell-spot, both the costal-marginal spots are entirely absent, the distal band is interrupted in the lower half. From Peru.

E. athletes *Fldr.* is allied to *proteus* (160 f), but the wings are broader, hindwings in the anal area *athletes*. less elongate, the tails more slender and of a smaller shape. Basal part of the wings above with olive hair, forewing with 4 discal spots arranged in one line, and with another distal one; 3 small ones near the apex. Hindwings beneath brown, densely dusted violettish-grey; double subcostal spots, 2 shortened bands blackish-brown, dusted brown with grey margins and an obsolete, undulate submarginal stripe. Colombia and Brazil.

E. proteus *L.* (= *domingo* *Scudd.*) (160 b) is a well-known, common species, easily recognized by *proteus*. the green hairing of the basal part above particularly in the hindwing. The forewing exhibits a yellowish discal oblique band which is almost extinct in the form **proteoides** *Plötz* from Florida and the Antilles. Beneath the *proteoides*. hindwings exhibit, on the dark brown ground, 2 thick dark transverse bands and mostly an isolated costal-marginal spot between both. — **esmeraldus** *Btlr.* is presumably only a large species with a brighter metallic *esmeraldus*. green reflection on its body and base of the wings from more southern habitats, in which the distal band of the hindwing beneath is parted by white. — *proteus* is found in North America in the Atlantic States and from Mexico almost through the whole of South America. The larva is green, posteriorly reddish with a red-brown head and light lateral stripes. It lives between two leaves of *Glycinia* being joined together and on other *Papilionaceae*.

- aelius*. **E. aelius** Plötz (160 b, c) is above similarly marked, but without any green and with a white ante-marginal line before the white fringes of the hindwing. Under surface of the hindwings almost like in *eurycles* (160 e). Described from Pará.
- clevas*. **E. clevas** Mab. greatly resembles *aelius* above, the hyaline spots of the discal band are not scalariformly arranged, but form a rectilinearly defined oblique band, of a white, not yellowish colour. A white ante-marginal line in front of the fringes is noticed here only beneath; otherwise the hindwings are beneath very much like those of the preceding species. Brazil.
- talthybius*. **E. talthybius** Mab. likewise belongs here; 50 mm, thus very large. Base of wings like in *proteus* (160 b), of a metallic green like the body. The discal hyaline band of the forewing broad, coherent, tapering towards the proximal angle, slightly yellowish. Hindwing with a short, broad tail and dirty-white fringes, beneath rusty-brown with 2 not very distinct, black transverse bands like in the preceding. Described from Brazil.
- concinus*. **E. concinns** Mab. Above blackish-brown with speckled whitish fringes and yellowish hyaline discal spots. Beneath the apex of the forewing is of a light grey. Hindwing at the base blackish-grey with a darker transverse band, behind it a whitish band-like space, parted by a darker colour; in the lilac-grey distal area a curved, black spot. Expanse of wings: 47 mm. Brazil.
- alcaeus*. **E. alcaeus** Hew. (= *montezuma* Scudd.) (160 c) in the scheme of markings above resembles *proteus* (160 b), but it has no green, but ochreous-brown hairing on the body and bases of the wings. Beneath easily recognizable by the extensive white area in the discal and lower half of the hindwing, and by the torn black marking. Arizona, Mexico, Costa Rica, Ecuador.
- aminias*. **E. aminias** Hew. (= *pithys* Schs.) (160 e) is allied to *alcaeus*. Above the discal macular band is of a yellower tone, the bases of the wings, however, of a darker ochreous-brown. Beneath the hindwing is reddish-grey with torn black spots without the white marginal area. Colombia, Brazil.
- tarchon*. **E. tarchon** Hbn. (= *longicauda* Sepp) (172 a) is very closely allied to the following, but the spots of the forewings are whiter, and on the hindwing beneath the white band is more concave, its lower part split up in 2 parts either by a blackish ray or by 2 spots being above pointed. — MABILLE considers it to be only a form of *catillus*. From Brazil.
- catillus*. **E. catillus** Cr. (= *ixion* Plötz) 160 a). Above little different from *dorantes* (160 a), but the forewings project somewhat angularly below the apex. Under surface of the hindwing very variegated: particularly prominent is an antemedian band bent almost rectangularly on the upper median vein, behind it a lighter, lilac-grey space into which a brown dentiform spot projects from the direction of the dark proximal margin. Widely distributed in South America.
- zilpa*. **E. zilpa** Btlr. (160 d). Here the angle below the apex of the hindwing is still more pronounced, the hindwings beneath still more variegated: at the costal margin brightened up by lilac, a large inner-marginal spot almost white, the macular marking in contrast with it of a deep brownish-red; also behind the small spots in the apex of the forewing beneath there is a deep dark triangular spot. From Mexico through the whole of Central America, to the north as far as Arizona.
- cinereus*. **E. cinereus** Mab. is brown with an ashy-grey haired basal area. In the forewing the 3 subapical punctiform spots are arranged in an oblique row, 4 white hyaline spots form a discal band and a 5th is situate apart of them. Apex of forewing very much extended. Beneath the apex shows a lilac tinge. The hindwings are beneath brown with an ashy-grey margin and a large white ray from the costa, expanded to a triangle as far as the inner-marginal fold, where it is filled up by a diffuse ashy-grey spot. The hairing of the brown body is grey and shows a somewhat green reflection; palpi white. Brazil.
- myrto*. **E. myrto** Mab. is allied to *catillus* (160 a), but with much larger and yellower discal spots above, and the small apical spots are not arranged in a row, but the third is removed towards the margin. The hindwing is concavely indented below the costal angle, the undulate fringes are white. Forewings beneath of a light red-brown; hindwings very much like in *catillus*, at the margin blackish with a fine silvery line in front of the fringes, the macular markings violettish-black, the subbasal, angled band broken up into 4 spots: 2 round ones near the costal margin, encircled by whitish, then a large one in the middle, enclosing a small silvery spot and in the whitish anal area another tooth-like spot. Hayti.
- stylites*. **E. stylites** H.-Schäff. (160 c) is a smaller species, distinguished by an almost white inner-marginal area of the forewings beneath; the pale lilac-grey hindwings speckled with brown exhibit 2 brown transverse bands, the proximal one being broad, slightly curved, bordered dark, the distal one almost streak-shaped. Colombia, Brazil.
- callias*. **E. callias** Mab. somewhat resembles *procerus* (160 b), above marked just the same, towards the base with a green lustre, spots purely white diaphanous. Forewings beneath reddish-brown, the hyaline spots margined darker, hindwings light reddish-grey with 2 minute dark spots at the costal margin like in *dorantes* (160 a), but at a much greater distance from each other; in the cell a round black spot and a short black band behind

it. Body beneath haired greenish-yellow. Porto Cabello.

E. callicina Schs. is very closely allied to the preceding and is marked the same, above brown, towards *callicina*. the base and at the proximal margin of the hindwing haired olive-yellow; hindwings with traces of 2 darker transverse bands; fringes white. Beneath the forewings are brown with a lighter proximal margin, the hindwings brown, tinted violettish, a proximal, dark, narrow band broken up into spots, and a slightly curved, distal, short band. Expanse of wings: 46 mm. Honduras.

E. juanita Schs. seems to be closely allied to *stylites* (160 c), distinguished by lighter, dark speckled *juanita*. fringes; the vitreous spots are arranged like there, whitish. Hindwings haired olive. Under surface also like in *stylites*, but at the costal margin near the base of the hindwing there is yet a brown spot, and the distal band is more undulate. Expanse of wings: 38 mm. Rio de Janeiro.

E. platowi Plötz (160 c) is larger than *stylites*, above similarly marked, but with larger purely white *platowi*. hyaline spots, of a deeper black ground-colour and extensive olive-green hairing on the body and bases of the wings. Fringes of the hindwings whitish, speckled dark. Beneath easily discernible by the large, brownish-black discal area being distally irregularly defined, containing a whitish middle luna and being bordered towards the proximal angle by a whitish, short band. Patria unknown. Perhaps an aberration from *proteus*.

E. megaeles Mab. is very closely allied to *platowi* and exhibits the same hyaline spots. DRUCE takes *megaeles*. be it to a form of *esmeraldus* with confluent spots on the hindwings beneath; forewings below the apex sharply angled, fringes of the hindwings unicolorously dirty grey, hindwings blackish as far as the costal margin with a light middle luna and the marginal area tinged light yellowish-green and lilac. Brazil.

E. metophis Latr. (160 d) is above not unlike *proteus* (160 b), but with a shorter, broad tail and mostly *metophis*. only 2 or 3 discal hyaline spots. Hindwings extensively haired olive-green. Beneath brown with a light proximal margin of the forewing; hindwings dark brown with white fringes and a yellowish-white, narrow band parallel to the border, touching neither the costal nor proximal margin. Distributed in South America.

E. jethyra Btlr. (160 e) is not to be mistaken for any other species owing to the extensive ochreous colour- *jethyra*. ring above and the large ochreous-yellow discal spots; also the fringes of the hindwings are yellow, speckled darker. On the under surface allied to *zilpa*. From Peru.

E. harpagus Fldr. (160 e) is probably the largest species, on the body and base of the hindwings *harpagus*. haired slate-blue. Under surface of hindwings of a deep blackish-brown with a violettish-grey distal area parted by a band of the groundcolour with 3 proximally projecting teeth. Colombia.

E. albofasciatus Hew. (160 d). Above like *zilpa*, but the angle below the apex of the forewing does not *albofascia-* project so much; beneath unmistakable by the broad, silvery white transverse band. In Central America wide- *tus*. spread and mostly common; to the north as far as Texas and Arizona.

E. simplicius Stoll (= *pilatus* Plötz, *proene* Plötz) (160 e) is the most common and most insignificant *simplicius*. species, above unicolorously blackish-brown, without any spots, beneath likewise brown, on the forewing with 2 light costal-marginal spots, and on the hindwing with 2 partly interrupted blackish diffuse bands and an isolated spot at the costal margin near the base. — **eurycles** Latr. (= *zagorus* Plötz, *zalanthus* Plötz, *sumich-* *eurycles*. *rasti* Scdl.) (160 e) is certainly only a subform differing by the presence of a narrow, yellowish-white oblique band and 3 or 4 small apical streak-spots. There are numerous transitions. From Texas through the whole of Central and South America. — **ab. latipennis** Mab. is larger, the wings broad and lustrous. The median *latipennis*. band composed of 5 spots, broader, before the apex 4 or 5 punctiform spots in one line; hindwing beneath at the base with 2 very small spots and the fringes almost white; the tail is broad and very long; the ♂ without a costal fold. Colombia and Guiana.

E. gracilicanda Plötz (161 e, f) is like *simplicius* above and beneath brownish-grey, without any hyaline *gracili-* spots, with a finer, longer tail. Beneath the proximal margin of the forewing is lighter, on the hindwing the *canda*. costal-marginal spots are absent, the 2 transverse bands are passing through to the costal margin, the proximal margin darkened. Patria unknown.

E. carmelita H.-Schäff. (161 b) greatly resembles *eurycles*, above different by a somewhat broader *carmelita*. white band and a small spot outside in the middle of it in the angle between the median and radial vein. Beneath the hindwing exhibits an antemarginal violettish-grey band as broad as the similarly coloured fringes. From Brazil. — **trebia** Mschlr. (161 b, c) is quite similar, but of a blacker ground-colour, the median band broader, *trebia*. more coherent, the apical and subapical dots, 6 in number, form a curved line. Hindwing with a white band extending from the costal angle to the tail-appendage; hardly separable from *carmelita*. — **nigricauda** G. & S. *nigricauda*. differs from typical *carmelita* by the hyaline band of the forewing being straight, coherent and broader, from *trebia* by 5 subapical dots arranged in a straight line running parallel to the median band. Beneath the white band of the hindwing is broader than above.

- chalco.* **E. chalco** Hbn. (= *agesilaus* Swns.) (160 f) is a large, beautiful species, above on the body and bases of the wings with a bluish olive-green reflection, forewings marked like *carmelita* (161 b), hindwings with a broad, white distal area and tail, the former extending only beneath to the costal margin. South America.
- dominicus.* **E. dominicus** Plötz (= *albimargo* Mab.) (160 f) is smaller, with a much shorter and finer tail and a very narrow white marginal area of the hindwing, about the width of the fringes, above not with green, but only with some slate-coloured hair. South America.
- brachius.* **E. brachius** Hbn. (160 f). Above like the preceding with a short broad tail, but with a very broad inner-angular spot, almost extending to the middle of the wing; beneath on the hindwing there appear in the white marginal area 4 or 5 blackish-brown spots before the fringes, increasing in size towards the costa. —
- doryssus.* The form **doryssus** Swns. (= *nivosus* Plötz, *orion* Drc. nec F.) (161 b) is the same, though with a somewhat narrower white area of the hindwing not extending to the middle of the wing, particularly above. —
- chales.* **E. chales** G. & S. (160 f) is presumably likewise not a separate species, but like *simplicius* from *eurycles*, it differs by the absence of the white oblique band on the forewing; the white distal part is not much broader than in *doryssus*. From Mexico to Brazil.
- loxo.* **E. loxo** Mab. is larger than the preceding, distinguished by the fringes of the forewing being white towards the inner-angle, while in the other species they are blackish-brown. The marginal area of the hindwing is particularly beneath very broad white, towards the costa tinged blackish-brown, the black colour being continued before the margin for some distance as far as into the very broad white tail. Santa Catharina.
- albicuspis.* **E. albicuspis** H.-Schäff. (= *leucites* Mab.) (168 b) closely approaches *brachius* and is above to be separated by a tooth of the blackish-brown ground-colour on the submedian fold projecting far towards the margin into the very broad white anal part, whereas on the submedian vein a white tooth projects far towards the base. Beneath the white colour is almost as broad as above, only towards the costal margin somewhat narrower, towards the costal angle on the border some few blackish-brown diffuse spots. Colombia, Brazil.
- herophilus.* **E. herophilus** Plötz (= *virescens* Mab.) (161 b) is above the most similar to *albimargo* by the extent of the white colour, but towards the base on both wings and on the body strongly haired green. Beneath the hindwing is marked with an indistinct black, postmedian transverse band and a black costal-marginal spot before it. From Surinam to Rio de Janeiro.
- orion.* **E. orion** F. (161 b) is a magnificent species, above somewhat like *brachius* (160 f), but with longer tails, and a much broader white discal band of hyaline spots on the forewing. Beneath very much like the following *undulatus*, except the broad white distal area slightly tinged reddish-brown, on the hindwing. Central America.
- undulatus.* **E. undulatus** (= *niciasus* Plötz) (160 a, b). Above brown with an oblique band of hyaline spots on the forewing, being slightly tinged yellowish. Beneath reddish-brown, watered darker, with 2 partly interrupted, irregularly dentate, slate-coloured to blackish-grey transverse bands and black clouding at the base of the hindwing. Mexico to Brazil.
- elongatus.* **E. elongatus** Plötz (160 d) most closely approximates *undulatus*, differs, however, by but one distal transverse band on the hindwing beneath. Brazil.
- evenus.* **E. evenus** Mén. (161 c) from the affinity of *albimargo*. Very much distinguished by the very broad, yellowish-white discal band on the forewing and the almost equally broad, yellowish-white border of the hindwing, into which small spots of the ground-colour project on the ends of the veins. Beneath marked like *simplicius-eurycles* except the yellowish-white border. Described from Brazil.
- eudoxus.* **E. eudoxus** Cr. (161 c) is like the following species marked by an equally broad, yellowish-white antemarginal band on the hindwing beneath, running about parallel with the border, forming, however, a hook towards the proximal margin at the tail. Above the forewing exhibits a rather broad, white discal band reaching neither the costal margin nor the proximal angle. Body and bases of the wings with green hair. Guiana.
- leucogramma.* **E. leucogramma** Mab. differs from *eudoxus* by different hyaline spots of the forewings, which are about arranged as in *proteus* (160 b) with which the species is at any rate best to be compared above. Beneath the red-brown hindwings show a slightly curved antemarginal band terminating at the tail and not turning round towards the proximal margin. Porto Cabella.
- cholus.* **E. cholus** Plötz (= *glaphyrus* Mab., *leucodesma* Plötz, *albistria* Plötz) (161 c) is above and beneath quite similar, but the tail is much shorter, and on the hindwing beneath the white band is much narrower, not sharply defined as in the preceding. Brazil.
- ganna.* **E. ganna** Mschr. (161 c) is a much smaller species with a considerably finer, neater tail, otherwise very closely allied to *cholus*; the white band of the hindwing is on both sides sharply defined and particularly towards the margin of a darker tinge. Venezuela.

E. piliger *Mab.* Similar to *ganna* (161 c), but larger, the middle of the wings somewhat reddish, *piliger*. Forewing with yellowish spots: 3 near the apex, 3 in the disc, 1 of which is in the cell. Tail of the hindwing broad and short, fringes of the forewings grey, of the hindwings white as far as the tail; base of hindwing metallic green. Hindwing beneath of a pure brown, a straight white band, crossed by the veins, extending from veins 2 to 7. A grey spot beginning in the 8th interspace. 39 mm. In the Coll. STAUDINGER (Berlin). From Itaituba.

E. octomaculata *Sepp* (= *calenus* *Mab.*) (161 d as *maculata*). This species initiates a group of forms, *octomaculata*, in which the discal spots are not of the shape of a band, but exhibit more a condensed group of discal spots. The colouring above is a pure olive-brown with an indistinct, darker brown antemarginal shade on all the 4 wings, being of a lighter grey tinge beneath, particularly on the hindwings. The tail is here short triangular. From Mexico through Central America to the Amazon. — The bluish-white larva with a yellow head lives on *Pterocarpus indicus* and changes into a reddish-yellow pupa on a leaf having been drawn together in a boat-like shape by some few threads.

E. auginus (161 d) is smaller on an average, on the body and bases of the wings haired green; above *auginus*, the darker nebulous bands are scarcely visible, beneath on the hindwing towards the proximal angle with a whitish spot before them. Guiana, Colombia, Brazil.

E. auginulus *G. & S.* (161 d) is still smaller, with shorter tails terminating more pointedly; whilst in *auginulus*, *auginus* there are only 3 hyaline spots in the disc, the present species has one more above them at the costal margin; the forewing beneath is almost whitish-yellow at the proximal margin, above on the light, olive-yellow hindwing there are 2 distinct transverse bands visible. Mexico.

E. flammula *H.-Schäff.* (= *lindora* *Btlr.*) (161 d) is larger than *auginus* with much longer tails, *flammula*, the bases of the wings are not haired green, but somewhat olive-yellow. On the under surface the white spot at the proximal angle is larger and lighter. Brazil. Perhaps only a form of *auginus*.

E. alciphron *G. & S.* (161 d) differs from *auginulus* by its larger size, longer and broader tails, much *alciphron*, larger hyaline spots, and like *octomaculata* dark transverse bands on the upper surface of all the wings. On the hindwing beneath with a white transverse band, distally parted by black. Mexico.

E. asine *Hew.* (= *caenus* *H.-Schäff.*) (161 d) is a larger species, above dull olive-brown, with the *asine*, usual hyaline spots, more or less distinct nebulous bands across the wings, on the forewing yet with a small round spot or small ring-spot towards the base near the proximal margin. Beneath the forewings are lighter, the hindwings darker dusty olive-brown, the hindwings with 2 irregularly spotted, darker nebulous bands. Mexico to Nicaragua.

E. ceculus *H.-Schäff.* (161 d) is smaller than *auginus*, with shorter, more pointed tails, without *ceculus*, any green; forewing without any dark marking, only the hindwing exhibits a darker cell-streak and a blurred antemarginal band. Beneath like *auginus*, though without the light inner-angular spot with a darker cell-spot. Rio de Janeiro.

E. obscurus *Hew.* The description runs: „Blackish-brown; forewing with 2 apical, transparent *obscurus*, dots. Hindwing with a short and broad tail. Beneath deep brown; forewing at the apex lighter and at the border with a brown nebulous spot near the apex. Hindwing lighter, traversed by 2 macular bands being darker than the ground of the wing.“ No patria mentioned, and MABILLE and BOULLET assume it to be a *simplicius*, but that by the dark spot below the apex the species deviates from this group.

E. hirtius *Btlr.* (161 c) is the largest species of this group, above like *asine*, but with much more extensive *hirtius*, hyaline spots, which are here particularly proximally bordered with a dark brown, whereby they are distinctly prominent. The hindwings beneath are only very feebly marked. From Venezuela.

E. decurtatus *H.-Schäff.* (161 e) is very similar but smaller, with comparatively longer hindwings, *decurtatus*, but shorter tails; the hyaline spots of the forewing are reduced, not so yellowish as in the preceding, the under surface is much more intensely marked with 2 dark transverse bands flowing together at the costal margin. Colombia, Brazil.

E. decussatus *Mén.* (161 e) is presumably to be considered as an insular form of the preceding from *decussatus*, which it differs little. On the forewing the advanced hyaline spot of the discal row between the median and radial vein is absent, instead of which the lowest apical spot is removed towards the margin. Beneath the dark transverse bands run more rectilinearly. Hayti.

E. ridens *Hew.* (= *coronus* *Plötz*) (167 b) initiates a group of species with very short tails, of which *ridens*, *ridens* is the largest and finest. Above chocolate-brown with very extensive hyaline spots; the hindwing exhibits a short, white discal band and at the proximal margin a dense cover of white hair. Beneath on the hindwing,

behind the cell, a broad white band being in the distal half shortly parted by black. Panama to Brazil. — *cachinnans*. ***cachinnans*** G. & S. (161 e) is presumably only a subform of it, the white band on the hindwing beneath being broader, and the body and base of wings being suffused with green. Likewise described from Panama.

millas. ***E. millas*** G. & S. (161 e) from Mexico differs by the hindwings being lighter beneath, with torn darker macular bands; the white band is only visible at the proximal angle as a diffuse spot.

crison. ***E. crison*** G. & S. (161 e) greatly resembles *cachinnans* beneath, but the band of the hindwing is above dull blue, parted at the greenish costal margin, whereby it has the shape of a Y. Central America.

hyster. ***E. hyster*** Dyar (166 d) is likewise similar, smaller, above darker with reduced discal spots. Beneath the hindwings are at the base of a dark blackish-brown, in the distal area light lilac grey with a bluish-grey dusting; the broad white transverse band shows towards the costal margin 2 dark spots near its distal edge. Sierra de Guerrero (Mexico).

biolleyi. ***E. biolleyi*** Mab. Forewing above with a short white band composed of 4 dissimilar spots, hindwing beneath without a white discal band, but with a spatulate, prolonged lobe with white edges and fringes.

To this genus belong yet a number of Hesperid forms having for some reason or other been described as *Thymeles*, *Goniurus* etc., and presumably do not all deserve denominations. Thus „*Thymele*“ ***guatemalaina*** *guatemalaina* is allied to *proteus*, though the spots are not so distinctly separated; beneath the palpi are reddish-yellow, thorax brown, abdomen ash-grey. Forewing light brown, at the proximal margin still lighter, spots like above, hindwings dark chestnut-brown with a narrow, flesh-coloured marginal band, beginning on the costa near the apex and extending to the lower median rib. All the fringes a little lighter than the ground-colour. Expanse 49 mm, the tails 6 mm. From Cayabon in Guatemala.

borja. „*Thymele*“ ***borja*** Ehrm. The body above very dark brown. Both wings in the ground fawn-coloured, with a dark brown margin, the fringes a little darker than the ground-colour. The body beneath dark brown, the forewings lighter than above, with diaphanous spots like above, and two dark brown undulate lines on the band. Hindwings like the forewings, on the costa near the base a four-cornered spot, laterally to it two dark brown streaks on the band. The tails are 10½ mm long. Expanse of wings: 49 mm. — Borja, Bolivia.

thiemei. „*Thymele*“ ***thiemei*** Ehrm. seems to be allied to *Eud. eurycles* (160 e). Above dark brown, the tails almost blackish-brown. All the fringes light brown, at the tails black. Beneath light brown, forewing with a prominent band, in the apical area a large, dark brown, triangular spot; in the hindwing the markings are like in *T. eurycles* Latr. The tails are 18 mm long, the expanse of wings: 45½ mm. From Honduras.

terraccina. „*Thymele*“ ***terraccina*** Ehrm. ♀ above very dark brown, thorax, however, covered with long green scales. Forewing dark brown, in the basal area light greenish, at the distal end of the discal cell there is a large, V-shaped, transparent spot, above this spot on the costa there are two narrow, oblong spots of the same colour. Below the discoidal cell in the limbal area, there is an almost straight row of three diaphanous lunae, in the apical area a curved row of 6 transparent spots between the costa and the upper median rib. Hindwing dark brown, the basal area dusted green. Fringes of a pure white. Forewing beneath light chestnut-brown with transparent spots as above. Hindwing beneath very dark brown, at the apex ash-grey, between the median and the lower submedian some white dusting. Expanse of wings: 64 mm. — Remedios, Colombia (South America).

viterboana. „*Thymele*“ ***viterboana*** Ehrm. (sex?). Body above olive-brown. Forewing above in the ground chestnut-brown, in the basal area bluish-green, transparent spots like in *T. harpagus* Feld., but less distinct. Hindwings of a darker ground-colour than the forewings, costa lighter, median area of a nice olive-green. Under surface dark brown, forewings beneath lighter than above, in the distal marginal area, however, darker, the spots as above. Hindwing dark brown, basal and costal areas lighter, in the marginal area two lighter brown streaks. Tails 4½ mm, expanse of wings 55 mm. Socorro, Colombia (South America).

cleopatra. „*Goniurus*“ ***cleopatra*** Ehrm. from Venezuela (Suapure) only measures 39 mm, and is certainly allied to *Eud. orion* Cr. ♀ above dark brown, the costa from near the base to the hyaline stripe expanding across the cell is white, the stripe on the fascia and the spots in the subapical zone as in *G. triptolemus*, beginning from the cell the marginal area and the tails are white like the fringes. Hindwing dark brown, the dorsal area dusted white beginning from the median cell, the fringes of the apical and dorsal margins are dark brown. — Beneath the body is lighter than above, with faintly indicated two lateral bands on the venter, legs dark brown. Ground-colour of forewings much lighter than above, the dorsal area is white. In the hindwing the ground-colour is very

dark brown, the marginal band and the tails are of a pure white except 4 faint lunae in the apical area. Tails $1\frac{1}{2}$ mm long.

G. triptolemus *Ehrm.* ♀. Body above dark brown. Forewing above dark brown, on the fascia there *triptolemus*. is a transparent stripe composed of 4 dissimilar spots. In the median cell beyond this stripe there is a narrow, diaphanous spot right across the cell, in the subapical area a row of 4 very small transparent spots. Hindwings a little lighter than the forewings, the tails white. The apical fringes are white, above slightly mixed with brown. Fringes at the border and at the tails very long and of a pure white, the anal fringes shorter and brown. Under surface much lighter than above; ground-colour of forewings lighter than above, with the same markings as above, but the transparent stripe is more prominent. Ground-colour of hindwings like that of the forewings, on the fascia there are three brown stripes indicated; the border purely white, tails brown, with white fringes. Length of tails: $4\frac{1}{2}$ mm. Expanse of wings: 52 mm. Bagasas, Costa Rica.

6. Genus: **Plestia** *Mab.*

In its anatomical marks it corresponds with *Eudamus*, but the hindwing has no tail, but a deeply dentated distal margin and a somewhat prolonged, rounded anal lobe. The antennal club represents a uniformly curved spindle tapering gradually. Body and wings very hairy. 4 species:

P. staudingeri *Mab.* is above red-brown with yellow hyaline spots, being similarly arranged as in *staudingeri*. the following, but the hindwing shows two hyaline bands and is more dentate. Described from Guatemala.

P. dorus *Edw.* (172 c) from South Arizona and Mexico has a reddish-brown upper surface with 3 *dorus*. yellowish discal spots, 2 or 3 minute apical spots and an antemarginal band extending from the lower radial vein close to the proximal margin. The hindwing shows behind the cell a hyaline band, being distally somewhat concave. Beneath the proximal margin of the forewing is broad honey-coloured, the hindwing exhibits 3 dark brown transverse bands.

P. elwesi *G. & S.* (172 c). Here the distal macular band of the forewing contains two small spots *elwesi*. more; beneath the hindwing is of a pure yellow, with a macular band above the base and 2 black median spots enclosing a white spot near the costa, and a series of black marginal dots. Very closely allied to *dorus*. Central America.

P. kikkawai *Weeks* from Venezuela is, according to the indistinct description, above dark brown, *kikkawai*. the forewing with 9 white spots, the largest of which is situate in the middle of the discal area, with darker margins. Costal margin and base of hindwing above white; in the middle of the wing a white spot with a small one attached to it, outside indistinct, small brown spots, and at the border a light brownish line. Beneath the hindwings are darker, with the white markings of the upper surface. A small species of an expanse of $30\frac{1}{2}$ mm, taken in January.

7. Genus: **Heteropia** *Mab.*

Large, robust animals with a moderately strong, gradually thickened antennal club being bent like a hook and ending into a fine point. The cell of the forewing is exactly two thirds of the length of the costal margin, the ♂ has no costal fold. The upper discocellular is very short, the two lower ones turned obliquely proximad, of the same length; the upper median vein rises near the cell-end, twice as distant from the lower radial vein as from the upper one. The hindwing are slightly angled on the inner-marginal vein. The posterior tibiae show 2 pair of spurs. The species occur in Central and South America.

H. imalena *Btlr.* (= *imitatrix* *Mab.*) (161 f upper surface, 171 d under surface) is above black, with *imalena*. a blue reflection and an oblique, white, discal hyaline band, in the angle between the radial and median vein with an isolated, longish spot and 2 or 3 minute apical spots; fringes speckled white and black. Under surface dark brownish-grey, marbled lighter, on the hindwing towards the margin lighter lilac-grey, with 4 incomplete spotted transverse bands. Costa Rica to Colombia.

H. bryaxis *Hew.* (161 f) is above marked the same, but like the following species above brownish- *bryaxis*. black, towards the base lighter ochreous-yellow. Beneath very much like *imalena*, the transverse bands of the forewings more distinctly prominent, towards the proximal margin of a deep velvety brownish-black, the ilac-grey distal area the lightest near the proximal angle. México to Guatemala.

H. cyda *G. & S.* (161 f) is very closely allied to *bryaxis*, but above much darker brown, almost *cyda*. without any ochreous brightening, and on the hindwing with an indicated darker discal and marginal band. Beneath the ground-colour of the hindwing is of a rather uniform lilac-grey, at the anal angle almost purely white. Mexico to Honduras.

H. melon *G. & S.* (161 f) likewise approximates *bryaxis*, being somewhat larger, above also ochreous- *melon*. yellow towards the bases of the wings, with mostly larger discal macular bands. Beneath the colour of the

hindwings is much more variegated, towards the margin almost whitish-grey, the marginal darkening much less, the transverse bands more torn, particularly the distal one partly only in the shape of a dentate, fine, black line distally shaded by reddish-brown, near the proximal margin expanded to a thick black spot. — f. *arizonensis*. **arizonensis** *Skinn.* has a somewhat lighter ground between the bands of the hindwings, and the anal angle is of a whitish ash-grey. Arizona.

cyledis. **H. cyledis** *Dyar* (171 d) is above almost like the preceding. Beneath the hindwing shows a large white area in the middle of the distal margin, which is pierced from above and below by a brownish, transverse irroration; the transverse bands are of a deep black, torn, the extreme band at the white area deeply concave proximally. Marginal area only very narrowly darkened by brownish. Hitherto only known from the state of Puebla (Mexico).

8. Genus: **Goniurus** *Hbn.*

This genus is distinguished by a somewhat more slender antennal club turned round in the middle like a hook; the 2nd palpal joint is densely scaled, the 3rd short, obtuse conical, extending straight forward. The cell of the forewing is longer by two thirds than the costal margin; the ♂ exhibits a costal fold. The transverse vein runs very obliquely, its middle part being longest; the lower median vein rises near the base, the upper one just before the cell-end. The hindwing with a distinct tooth or short tail at the inner-marginal vein; transverse vein and middle radial are very feeble, the doubly spurred posterior tibiae with fringes.

caelus. **G. caelus** *Cr.* (= *aurunce* *Hew.*, *hypozoneus* *Ploetz*, *gideon* *Ploetz*) (166 c). Above blackish-brown, on the body and bases of the wings metallic green with an ochreous-yellow, hyaline discal oblique band, a minute spot behind it and 2 or 3 minute apical spots. The under surface is more brownish, the hindwing exhibits a broad, silvery white discal band. Central and South America, beginning from Mexico.

talus. **G. talus** *Cr.* (= *lucidator* *Sepp*, *ausonius* *Latr.*) (166 d) is very similar, the hindwings, however, with shorter tails and beneath without a white band, but only a darker, blurred transverse band, bordered by two small lighter spots towards the proximal angle. From Mexico to South America.

passalus. **G. passalus** *H.-Schäff.* is the most closely allied to *talus* (166 d); above black, body, base of forewing and almost the whole hindwings of a deep green reflection, with a nearly equally broad white hyaline band without any apical spots. Hindwing beneath almost unicolorously green, only at the border narrowly greyish-brown. Brazil. Perhaps to be placed to *Thymeles* near *eudemus*.

9. Genus: **Epargyreus** *Hbn.*

Large, imposing animals with a very much extended apex of the forewing and a slight angle below it. Antennal club strong; 2nd palpal joint appressed, 3rd very short. Venation of forewings as in *Goniurus*; hindwing with a strong lobe on the inner-marginal vein. Nearly all the species have on the hindwing beneath silvery or mother-of-pearl white spots and in the hindwing yellow hyaline spots. The larvae, as far as they are known, are slender, mostly greenish, with transverse irrorations, the first ring being thin like a neck, whereby the mostly red or yellow head is strongly defined. They live on tree-like Papilionaceae between two leaves that are drawn together by means of strong threads. The change into a slender pupa takes place on the soil between leaves.

The pupae of *E. tityrus* have been exported in numbers to Europe in the last years, but they easily die on the way there. The butterflies are very common in tropical America, and one species goes to the north as far as the northern parts of the United States, where it is considered to be noxious by some authors (HARRISON, PACKARD). They fly very swiftly with an almost whizzing flight, and with their wings half open they cling to all kinds of blossoms and may be easily taken while sucking them, whereas the ♂♂ on their coupling flight are very timid.

tityrus. **E. tityrus** *F.* (= *clarus* *Cr.*) (166 e) is above brown with a broad ochreous-yellow discal hyaline band, a small isolated spot outwards of it, and 2 to 4 small apical spots. Beneath the same, on the hindwing with a very broad, silvery white band, being irregularly dentately bordered. From the United States to the south as far as Panama, in more southern districts in 2 or 3 generations. — The greenish larva, with a red-brown head, lives between two leaves drawn together with few strong threads, of Glyciniae (*Wistaria*), Robiniae and other Papilionaceae, and pupates on the ground between leaves.

exadeus. **E. exadeus** *Cr.* (= *socus* *Hbn.*, *clavicornis* *H.-Schäff.*) (166 e) is much larger, with longer wings and smaller, lighter hyaline spots. On the hindwing beneath, the silvery spot is more or less reduced, mostly to one larger, roundish spot in the proximal half and one or two above it; distally there is a fine, undulate, partly silvery line, and the distal part is of a light violettish grey, finely dusted darker. Widely distributed from Mexico almost through the whole of South America, and common. — The larva is green, with a fine, darker transverse

striation and a red 1st ring and feet and a dark brown head spotted red. It lives on Papilionaceae.

E. pseudexadeus Dbl. & Hew. (166 e) has a very much broader ochreous-yellow discal hyaline band, *pseudexadeus*, and on the hindwing beneath much more silvery markings, being otherwise very much like the preceding. South America.

E. maysii Luc. (= *egaeus* H.-Schäff.) (166 e, f) from Cuba is very closely allied to the preceding *maysii*, beneath, but on the forewings much darker, since the yellow discal spots above and beneath are absent except 2 small costal-marginal spots.

E. antaeus Hew. (= *euthymides* Plötz) (166 f) is most similar to the *tityrus* above, but it has quite *antaeus*, unspeckled fringes; beneath the hindwings are lighter, more violettish-grey, and the silvery band is more equally broad and more regularly defined. Brazil.

E. boisduvalii Ehrm. has an expanse of 52 mm. It is allied to *antaeus* Hew. Above brown, in the middle *boisduvalii*, of the costa a small orange spot, below it a truncate, semi-transparent yellow spot, in the limbal area 3 small round similar spots, below in the marginal area a distinct orange spot. On the hindwing 2 small yellow spots in the middle cell of the distal area; all the fringes flesh-coloured. Beneath similar, forewings lighter, hindwings of a deep chocolate-brown, above the disc 2 silvery-white streaks, the orange spots in the distal area like above. Suapure (Venezuela).

E. asander Hew. (166 f) is above much darker, towards the base not so ochreous-yellow as the *asander*, preceding, with a narrower discal band; beneath on the hindwing the silvery white band is narrower, duller, only proximally sharply defined, distally more faded, the distal half light lilac-grey. — In the form **panthius** *panthius*, H.-Schäff. (= *arsaces* Mab.) (166 f) the silvery-white colour of the band is almost entirely absent. — f. **scheba** *scheba*, Plötz (166 f, g) approximates the preceding, but it is somewhat smaller and on the hindwing beneath it has a straight, equally broad, silvery white band. — Common from Mexico to Brazil.

E. zestos Hbn. (166 g) resembles *asander*, but it is more brownish-yellow and has a broader ochreous- *zestos*, yellow discal hyaline band of the forewing; on the hindwing beneath the silvery-white band is absent altogether. Guiana.

E. gaumeri Godm. & Salv. is like *exadeus* (166 e), only smaller and beneath the hindwings are *gaumeri*, unspotted. Described from Mexico.

E. enispe Hew. (166 g) looks above somewhat like *exadeus*, but it is quite different beneath; the *enispe*, hindwings are of a dull greyish-brown, strewn darker, with a darkened basal part and 2 transverse lines in the middle, the proximal one of which is broader and rather straight, the distal one finely undulate. — **rochus** *rochus*, Plötz (= *bochus* Mab.) only differs by the absence of the small apical spots. Colombia and Brazil.

E. barisses Hew. is a very variable species, above very much like *tityrus* (166 e), but with somewhat *barisses*, lighter discal spots, beneath like *enispe* (166 g), though the space between the two distal transverse lines on the forewings and hindwings is darkened by brown, whereas the marginal area of the hindwing is of a lighter, violet-grey tinge, the proximal transverse band is distally more or less broadly bordered with silvery white, towards the costal margin torn. In the smaller f. **tmolus** Plötz (166 g) from Argentina the silvery band is narrower *tmolus*, or almost extinct, the colouring above darker; in **busiris** Stgr. from Peru the hindwing shows a more strongly *busiris*, bent and equally broad silvery band. The type flies in Brazil. — **argentea** Mab. from Argentina has on the *argentea*, hindwing beneath a straighter silvery band, and the distal margin of all the wings is longer lilac-grey.

E. haitensis Mab. & Boull. is jet-black, bases of wings and body of a dark red with a grey lustre. Fore- *haitensis*, wing with 2 apical dots. Median band composed of small spots. Under surface of forewings violettish-red with a black inner-marginal area. On the more violet under surface of the hindwing the white band is broad; fringes grey, scarcely interrupted. In spite of the differences mentioned, it is, according to its authors, presumably only an insular form of *asander*; the contours of wings are entirely like those of *enispe*; Hayti.

10. Genus: **Proteides** Hbn.

Very similar to the preceding genus, but the forewings still longer and the apex strongly extended, without a costal fold; the cell is $\frac{3}{4}$ of the length of the costal margin. Only one variable species with 2 separate insular forms:

P. idas Cr. (= *mercurius* F.) (166 d) entirely resembles above *Ep. exadeus*, but beside the longer *idas*, shape of the wings it has a somewhat brighter red-yellow basal part. Beneath the colouring and marking of the hindwings is quite different; whitish-grey, some places tinted light violet and strewn darker, with a dark brown basal part and proximal margin, a postmedian, irregularly dentate band, being extinct in the middle part and towards the costal margin indicated by single small spots, and forming at the proximal margin a thick, dentiform spot; anal lobe likewise dark brown. The type is distributed from Arizona through Central and

South America and in some districts rather common. The butterfly has a very swift flight. — The larva is honey-coloured, strewn dark brown, with brown transverse bands and a red lateral stripe and head. It lives on tree-like Papilionaceae, also Cassia, and changes in to a bluish pupa in a leaf drawn together like a trough by means of 2 threads. — In Cuba flies *sanantonio* Luc. (167 a) with an extinct discal macular band of the forewing, only at the costal margin there is a small spot. — In Porto Rico there occurs another form: *gundlachii* Plötz (166 d), in which the hindwing beneath is unicolorously red-brown and without any whitish-grey dusting. — In ab. *angasi* Godm., likewise from Porto Rico, the transparent spots on the forewings are absent altogether, nor is there any white at all on the hindwings beneath.

11. Genus: **Chrysoplectrum** Wts.

Some smaller species with a moderately thick antennal club bent like a hook, with a very slender, long terminal half. Forewing very broad owing to the short proximal margin and long distal margin; ♂ with a costal fold; cell of hardly $\frac{2}{3}$ of the length of the costal margin. Hindwing at the base of the costal margin very concave, rather long, distal margin in the ♂ straight, in the ♀ convex. At the anal angle a dentiform lobe. The posterior tibiae show a cover of long fringes and 2 pair of spurs; the posterior tarsi are beneath provided with 2 dense rows of lustrous golden pricks.

otriades. **C. otriades** Hew. (= *euphronius* Mab.) (167 a) is above unicolorously blackish-brown with white fringes, beneath with a lighter inner-marginal area of the forewing and a greenish basal part, and on the hindwing with an antemarginal band consisting of small, light lunae and showing near the proximal angle 2 more purely white, small spots. From Brazil, Amazon District. — From Bahia the form *bahiana* Plötz (167 a) is described with also above greenish bases of the wings and body, the fringes not being purely white, but yellowish; the under surface is lighter brownish, the inner-marginal area of the forewing still lighter, the antemarginal line almost without any white.

perniciosum. **C. perniciosum** H.-Schäff. (= *epicincia* Bltr.) (167 a) differs from *otriades* by 3 large white discal hyaline spots of the forewings. Beneath on the hindwing the antemarginal band is only indicated, the green very much confined. Colombia, Brazil. — *eudicus* Mab. shows light yellow instead of whitish spots of the forewings, the spot below vein 2 being absent, metallic green hair cover the whole prothorax and the bases of the wings; from Santa Catharina, the type in the Coll. STAUDINGER in the Berlin Museum.

justus. **C. justus** Plötz (168 e), according to the figure, is very much like the preceding, the hyaline band is only somewhat steeper and has near the proximal angle another small square spot. GODMAN places the species to *Thymeles* beside *pervivax*. Patria unknown.

12. Genus: **Acolastus** Scudd.

Anatomically very closely allied to the preceding genus, but the ♂ is without the costal fold. The cell is somewhat longer than $\frac{2}{3}$ of the costal margin. Posterior tibiae fringy, with 2 pair of spurs, the tarsi without any pricks. HUEBNER calls the genus *Polygonus*. Only 1 species:

amyntas. **A. amyntas** F. (= *lividus* Hbn., *savignyi* Latr.) (146 g) is a well-known species, above blackish-brown with a light violet lustre, 3 large discal spots and 3 very small apical spots. Beneath the hindwings are lilac-grey with 2 blackish macular bands. Common and very widely distributed from Mexico across South America.

13. Genus: **Telegonus** Hbn.

Large, strong animals. Antennal club but little and quite gradually thickened, bent almost rectangularly; the 3rd palpal joint is very short. The forewings are broad, the apex of the wing extended, whereby the distal margin is much longer than the proximal margin. The cell is longer than $\frac{2}{3}$ of the costal margin, the ♂ without a costal fold, whereby the species are separated from the following genus. The lower median vein rises 3 times as far from the cell-end as from the base, the upper one more than twice as far from the base as from the cell-end. The hindwings are lobate at the anal angle, the distal margin is roundish, the middle radial is absent. The posterior tibiae are fringy, with 2 pair of spurs. Numerous, often very similar species from Central to South America.

anaphus. **T. anaphus** Cr. (167 a) is above brown, on the body and bases of wings with a faint green reflection, the anal part of the hindwing yellow, beneath more extensively so and with 2 darker macular bands. From *anaphides*. Mexico far across South America. — In *anaphides* Mab. & Boull. the hindwing shows the yellow marginal band reduced to a bright yellow, more prolonged than broad spot between vein 1 b and 2, and the brown of the ground of the wings does not extend pointedly to the anal angle. Beneath the bands are very distinct, and the marginal band is pale yellow, strewn with small dark scales. Brazil.

T. leucogramma *Sepp* is a doubtful animal, having no more been recognized since SEPP's figure. *leucogramma*. It looks like a gigantic *anaphus*, with a narrow white transverse line at the cell-end, something like in *E. eurycles* (160 e). Described from Surinam.

T. chiriquensis *Stgr.* (= *meretrix* *Hew.*, *weymeri* *Plötz*) is above blackish-brown, with more prominently dark transverse bands and metallic blue bases of wings and body. Beneath similar to *anaphus* (167 a), the ground-colour lighter, more reddish, the yellow marginal area extended to the anterior angle and strewn with reddish-brown. Panama to Colombia.

T. elorus *Hew.* (= *blasius* *Plötz*) (167 b) resembles *chiriquensis*, but the hindwings are at the anal angle rounder, the colour above is still blacker, so that the transverse bands are scarcely noticeable. The marginal yellow of the hindwings beneath is very pure at the anal angle, upwards brownish. Brazil, Colombia, Bolivia.

T. ampyx *G. & S.* (172 h) looks above like an *anaphus* (167 a) without any yellow at the hindwing; body and bases of wings without any blue. Beneath also like *anaphus*, but without the yellow marginal part of the hindwing. The inner-marginal area of the forewing is lighter, yellowish-grey. Mexico to the Amazon.

T. alpistus *Mab.* is above dark brown with a reddish reflection with 2 very clear transverse bands, the proximal one of which is interrupted by spots. Beneath yellowish-brown with 2 transverse bands on the hindwing, the distal one being distally dentately bordered with yellowish, behind it the border is blackish. Brazil. — **cubana** *Mab. & Boull.* is above lighter, the fringes on the hindwings yellowish-white; beneath the yellow border of the distal transverse line of the hindwing is more sharply dentate and clearer. From Cuba.

T. galesus *Mab.* is a large, above somewhat lighter species, with a feeble dull green tinge on the body and bases of wings. The dark bands are on the forewing below the median closer together than in the other species. Beneath still lighter with distinct bands and a dark spot at the base of the hindwing. Brazil, Bolivia. — **grenadensis** *Schs.* is presumably only a darker form with more distinct transverse bands from the West Indies (Grenada). Expanse of wings: 44 mm.

T. creteus *Cr.* (167 d, e) is the chief representative of a group being difficult to distinguish, and which has not yet been fully cleared up; we will therefore consider the nearest allies only as forms of this species. Above all are alike, blackish-brown, with 2 rather distinct dark transverse bands and a metallic blue base of the wings, and body. Beneath somewhat lighter and of a more reddish tone, with the same, but here more distinct transverse bands and a large, white discal spot of the forewing, which in *creteus* extends only to the middle of the two lower median veins and does not touch the cell; the costal margin remains dark. Brazil, Colombia. — **parmenides** *Cr.* shows the white spot much larger, upwards narrower and extending almost to the costal margin strewn with blue; the base of the hindwing is strewn with yellowish, and the distal transverse band is bordered by a lighter tinge towards the margin and shows near the anal angle two white spots. Guiana. — **hopfferi** *Plötz* from Mexico to the Amazon is somewhat smaller, the white spot similar as in the preceding, somewhat narrower, extending to the white costal margin; also on the hindwing the costal margin is at the base broad white. — **pseudochalybe** *H.-Schäff.* (= *alector* *H.-Schäff.*) (167 e) is still smaller, the white spot as extensive as in *creteus*, but easily recognizable by 2 white spots above each other below the costal margin of the forewing. Here the bases of the wings are also beneath scaled blue; on the hindwing both bands are flown together into a dark median area. Brazil. — **siges** *Mab.* has a more metallic green body and bases of wings. Beneath there is instead of the white spot a greyish-white light part between the bands, extending to the cell; on the hindwing the transverse bands are flown together towards the costal margin. Brazil. — **cretellus** *H.-Schäff.* (167 b) is quite similar to *creteus*, but beneath it has a metallic green costal margin of the forewing; instead of the white spot there is also here only a greyish-white light patch not extending up to the cell. On the hindwing the distal band is distally bordered by a lighter tinge. Brazil. — **bifascia** *H.-Schäff.* is beneath of a more yellowish tone than the other species, the white spot very large, extending to the proximal angle, dusted with grey; the bands of the hindwings are closer together, though not confluent. Brazil. — **jaira** *Btlr.* (= *cretellus* *Plötz* nec *H.-Schäff.*) (167 d) has very much more distinct dark bands, the proximal one on the hindwing very much interrupted, between both near the costal margin an isolated spot. The white spot of the forewing is extended to the base and strewn with brownish; it does not reach the cell.

T. cassander *F.* (= ? *vespasius* *F.*, *elorus* *Plötz*) is above very deep blackish-brown, the bands still darker; the distal one on the forewing describes a regular arc round the cell. Body and bases of wings scantily strewn with blue. Beneath the hindwings are quite black, without any bands, strewn with small ash-grey scales. The species only flies in Cuba.

T. jariba *Btlr.* is a doubtful species from Cuba, the description runs quite similarly. According to the figure by PLÖTZ, it is somewhat smaller, and the hindwings beneath are without the grey scaling.

T. hahneli *Stgr.* (167 b, c) is very similar, but lighter, of a more reddish tone, the transverse bands

looking somewhat dentate, owing to prolongations on the veins. Body and bases of wings without any green or blue at all. Beneath the same, only somewhat lighter. Colombia.

- xagua*. **T. xagua** *Luc.* (= malefida *H.-Schäff.*) (167 d). Above black with a blue basal half and body, also beneath the base of the forewing is blue; in the middle of the costal margin there is a square white spot which may occasionally be absent. The hindwing only shows a faded, darker median band. Cuba.
- hurga*. **T. hurga** *Schs.* seems to belong here. Above brown, towards the base green, the hindwing exhibits a darker submarginal shade which also becomes prominent on the lighter under surface and is distally bordered with yellowish. Expanse of wings: 41 mm. Peru.
- pheres*. **T. pheres** *Mab.* (167 e) is above the same; beneath the marginal area on both wings is lighter, rosy-grey, in front of it a broad, uninterrupted, black band. Brazil, Colombia, Peru, Paraguay.
- habana*. **T. habana** *Luc.* (167 d). Above black with a metallic blue base and body, beneath brown, before the margin on all the wings whitish with brownish-grey scales. Cuba.
- latimargo*. **T. latimargo** *H.-Schäff.* (= cartomes *Mab.*, grullus *Mab.*) (167 c) is above the same, but the hindwing is more extended at the anal angle. Beneath the grey marginal area is present only on the hindwing and twice as broad as in *habana*. The forewing shows towards the costal margin 2 dark macular bands. Brazil, Colombia.
- alardus*. **T. alardus** *Stoll.* (167 c) is larger and distinguished on the hindwing beneath by the very broad whitish-grey marginal band scantily strewn with greyish-brown and being continued yet for some distance at the proximal margin; in *latimargo* it is blackish-brown. The forewing has likewise a light marginal band, parted and proximally bordered by dark macular bands. Distributed from Mexico to Brazil and Colombia and mostly common.
- heriul*. **T. heriul** *Mab.* Above not different from the preceding. Beneath the light marginal band is absent altogether, only on the forewing it is indicated by few small whitish scales; the forewing shows a broad black postmedian band which is interrupted below the apex. Described according to a ♀ from Brazil.
- megalurus*. **T. megalurus** *Mab.* (= consus *G. & S.*) (167 e) is at once recognizable by the anal angle of the hindwing, which is extended like a tail. Beneath the costal margin of the forewing is white as far as the middle of the cell, the wings show a violettish-grey marginal band which is broader on the hindwings. Mexico.
- apastus*. **T. apastus** *Cr.* (= acastus *F.*) (167 e) initiates a series of species exhibiting on the forewing an oblique, white hyaline band. The fringes of the hindwings are speckled black and white. Beneath the hindwings are strewn with greenish-yellow scales and show 2 indistinct, darker transverse bands. Guiana, Brazil, Peru.
- janeira*. **T. janeira** *Schs.*, according to the description, looks exactly like *Th. aulestes* (168 d). On the brown under surface of the hindwing, strewn with yellowish, we only notice a large, yellowish spot near the middle of the proximal margin. Expanse of wings: 49 mm. Rio de Janeiro.
- alector*. **T. alector** *Fldr.* (168 c) is a doubtful species and belongs perhaps to *Thymeles*. Recognizable by the white costal margin beneath on the fore- and hindwings, and by the large white spot in the disc of the forewing; the hindwing shows 2 thick, blackish-brown transverse bands. Bogotá.
- pertinax*. **T. pertinax** *Sepp* (= schelleri *Ky.*, alector *H.-Schäff.* nec *Fldr.*) (167 f) is somewhat smaller and very similar, but beneath it has neither on the fore- nor hindwings a white costal margin. The dark transverse bands are distally somewhat lighter, yellowish. Surinam.
- neobulus*. **T. neobulus** *Mab.* differs from the very similar preceding species by the hindwing beneath being darker in the basal half than in the marginal area, both being parted by a light yellow band from the costal margin to the anal angle, being divided into regular spots by the veins, the two lowest spots being white and more posteriorly removed. Brazil.
- eudemus*. **T. eudemus** *Mab.* is another doubtful species and perhaps only a darker form of *Thymeles passalus* (p. 866). Base of wings and body suffused with a deep dull green. Beneath monotonously black, only the proximal margin of the forewing lighter, somewhat reddish-brown. Described according to a ♂ from the Chiriqui.
- virgatus*. **T. virgatus** *Mab.* is larger than the preceding; above more brown, and the bases of the wings and the body with rusty-yellow, instead of green hair, otherwise marked the same with the oblique white hyaline band of the forewing. Beneath the same. Anal angle of the hindwing extended in a hook-like bow. Described according to a ♀ from Pebas.
- probus*. **T. probus** *Mschlr.* (168 d, e) certainly belongs into a special genus, and is sexually very dimorphous. The ♂ is coloured like the preceding species, but on the forewing it has instead of the oblique hyaline band 2 large, four-cornered spots obliquely above each other, and on the hindwing a curved row of black punctiform

spots. The ♀ is black with lustrous violettish-blue proximal halves of the wings, otherwise marked like the ♂, but the proximal discal hyaline spot is very much larger and oblong, the distal one much smaller. Surinam.

T. tritonae *Weeks* and **T. finitimus** *Weeks*. We have had no access to the descriptions of these *tritonae*,
two species. *finitimus*.

14. Genus: **Physalea** *Mab.*

It has somewhat longer and ascending palpi. The inner-marginal vein is inflated in its first two thirds, in its environs the forewing beneath is bare. On the under surface the forewing shows at the rise of the costal-marginal vein a pencil of stiff hair. Posterior tibiae with 2 pair of spurs.

Ph. vulpecula *Plötz* (169 e). The ♂ is above unicolorously rufous, towards the margin somewhat *vulpecula*,
darkened. Beneath darker, almost blackish. The ♀ is much larger, in the apical area of the forewing darkened,
with 2 large hyaline spots, similar as in *probus* (168 e), and on the hindwing with a row of black spots. Brazil,
Colombia.

Ph. sororcula *Mab. & Boull.* The ♀ greatly resembles that of *vulpecula*, the colour is duller, the *sororcula*,
hyaline spots farther remote from each other, rounder and smaller. Beneath yellowish grey, towards the apex
with a violet reflection. The row of spots on the hindwing is composed of smaller spots. Described according
to 1 ♀ from French Guiana.

Ph. pausias *Hew.* (170 b) is very similar, but much smaller, the ♂ above unicolorously rusty-yellow *pausias*,
with a darkened border. The hindwings beneath shows 2 small, indistinct, black dots below the middle of the
wing. Amazon.

Ph. cervinus *Plötz* is also closely allied, but on the forewing it has 2 black apical dots and a small *cervinus*,
white hyaline spot below the lower cell-angle. The under surface is darker, at the costal margin of the forewing
and proximal margin of the hindwing with a dull blue lustre. Brazil.

15. Genus: **Protopenes** *Mab. & Boull.*

The forewing shows near the proximal angle a slight concave indentation. The cell is longer than two thirds of the costal margin; there is no costal-marginal fold. The lower median vein rises near the base of the wing, the upper one above the middle of the cell. The head is remarkably stout, the palpi ascending, with a very short, obtuse terminal joint; the posterior tibiae covered with long stiff hair, in which 2 pair of spurs are hidden. Antennal club rather feeble, the tip, being bent round, is just as long as the other part. Only 2 species:

P. extrusus *Fldr.* (172 d) is black, thorax and base of wings metallic green, the abdomen narrowly *extrusus*,
curled green. At the costal margin and at the cell-end there are yet 2 or 3 metallic green dots each. Hindwing
in the disc with a large triangular spot, and at the proximal margin with a broad, bluish-green ray. Beneath
the hindwing shows an antemarginal row of small, square, bluish-white spots. Colombia.

P. affinis *Mab. & Boull.* is smaller; on the forewing above the green dots are absent, on the hindwing *affinis*,
there is no inner-marginal ray. Beneath the forewing shows at the apex 4 minute, greenish-white spots, the
hindwing in the middle a broad, yellowish-red transverse spot, divided by the black veins, and an antemarginal
row of small bluish spots. French Guiana.

16. Genus: **Thymele** *F.*

Chiefly differs from *Telegonus* only by the absence of the costal fold. A lot of species resembling each other also in their exterior:

Th. fulgurator *Walch* (= *fulminator* *Sepp*, *mercatus* *F.*, *azul* *Reak.*, *trinitad* *Lef.*, *misitra* *Plötz*) *fulgurator*,
(167 f). Above black and of a radiant bluish-green, with a white hyaline oblique band and 3 to 5 minute apical
spots. Beneath more or less rusty-brown, with or without a large white inner-marginal spot of the forewing,
melting away in the oblique band, the costal margin of the hindwing more or less extensively white, in the disc
with 2 blackish-brown transverse bands occasionally flown together to a darkened basal part. From Mexico
to Brazil and Colombia, wide-spread and nearly everywhere common.

Th. naxos *Hew.* (168 a) is above the same. Beneath at the distal margin of the forewing near the *naxos*,
proximal angle a greyish-white spot. The distal band of the hindwing is distally bordered by 8 small, light
rusty-brown spots, in the middle of the wing there is a white discal spot. South Brazil.

- halesius*. **Th. halesius** *Hew.* has above only one minute apical spot and the oblique band consists of 6, not 5 spots. Beneath in the apex of the forewing a grey band. The Hindwings are grey with a black basal spot, with 3 antemedian black spots and 2 black spots near the anal angle. Patria unknown.
- anthius*. **Th. anthius** *Mab.* Forewing slightly angled below the apex, the median band narrow, linear. Beneath it is widened by white marginal scales. In front of the border towards the apex there are greyish-lilac, small scaled spots. The hindwings are black with a bluish-white submarginal band, in front of it small black spots, near the proximal margin a rectangular yellow spot; in the cell and at the base some more bluish-white spots. Bolivia, Amazon.
- brevicauda*. **Th. brevipennis** *Plötz* (= *eniopeus* *G. & S.*, *naxos* *Drc.*) (167 f). The band of the forewing narrow, the lowest spot and the third from below are removed outwards. Fringes above the proximal angle speckled white. Hindwing at the anal angle prolonged. Under surface blackish, hindwing with 2 dark transverse bands. From Panama.
- palliolum*. **Th. palliolum** *H. H. Drce.* The oblique band of the forewing is only composed of 4 spots. Beneath dull blackish, in the basal halves strewn with yellowish, like the fringes. The middle of the hindwing is crossed by a brown macular band. Patria not mentioned.
- fulminans*. **Th. fulminans** *H.-Schäff.* (= *mephitis* *Hew.*) (168 c) is above almost marked like *brevicauda*, the oblique band generally somewhat broader. Beneath dull brown, the basal half of the hindwing almost black, a postmedian, lighter transverse band, which almost turns whitish towards the anal angle. From Mexico to Colombia, Brazil.
- dinora*. **Th. dinora** *Plötz* (168 a, b) is larger than the preceding, the oblique band still broader. The blue of the bases of the wings is dull and hazy, with but little lustre. Beneath dull black, in the cell strewn with yellowish, below the middle behind it with 2 or 3 yellowish-white spots. Peru, Bolivia, Venezuela.
- philistus*. **Th. philistus** *Hpfgr.* (168 d) has beside the 3 or 4 apical spots 3 larger ones below them, extending towards the median band. Fringes of hindwings of a pure white. Hindwing beneath at the border with a very broad, lilac-grey band divided into spots by the veins. Peru, Colombia.
- bolivar*. **Th. bolivar** *Mab.* exteriorly resembles *Eudamus miltas* (161 e) which has the same marking. Spots with a yellowish tone. Bases of wings and body are not bluish-green. Peru, Bolivia.
- egregius*. **Th. egregius** *Btlr.* (168 b) is distinguished by an almost extinct median band composed only of 2 or 3 small spots, in the apex mostly a minute spot. On the blackish under surface of the hindwing 2 dark bands approaching each other or being confluent in the middle. Mexico to Colombia.
- passalus*. **Th. passalus** *H.-Schäff.* is without the small apical spots like the following species. On the jet-black forewing there is only the oblique band formed by 5 equally large white hyaline spots; the lowest spot touches taperingly almost the proximal angle. Bases of wings with a deep bluish-green reflection. Beneath the species is quite black. Brazil. The species greatly resembles the smaller *Telegonus eudemus* *Mab.*
- aulestes*. **Th. aulestes** *Cr.* (= *narcosius* *Stoll*, *colossus* *H.-Schäff.*, *granadensis* *Möschlr.*) (168 d). Above black with a deep slate-blue reflection, at the base with a blackish-green lustre; the middle spot of the oblique band is small and distally removed, the lowest always quadrangular. The under surface is dull black, on the hindwing distally strewn with lilac-grey or greenish, with 2 indistinct, darker transverse bands, on the forewing with a shortened, lilac-grey submarginal band. The ♀ is almost twice as large with much larger hyaline spots. Distributed from Brazil and Colombia to the south as far as Paraguay.
- briccius*. **Th. briccius** *Plötz* (168 c) is very similar, smaller with coherent spots, the lowest of which always terminates triangularly pointed. The hindwing beneath is of a much lighter bluish-grey. Brazil.
- orphne*. **Th. orphne** *Plötz* (167 e). Here the band of the forewing forms more a single ovoid spot. On the hindwing beneath the basal part is quite dark, towards the margin bordered by a lighter band which forms a light spot near the proximal margin. Rio de Janeiro. Perhaps = *Tel. janeira* *Schs.*?
- christyi*. **Th. christyi** *Sharpe* looks entirely like a small *fuligator* (167 f) without any apical spots and with a narrow hyaline band. Beneath the forewings are metallic green as far as the oblique band. Patria unknown.
- pervivax*. **Th. pervivax** *Hbn.* (= *pertinax* *Stoll*) (168 e) is a similar, smaller species. Above like the preceding, but of a more brown ground-colour. Beneath the bases of the wings are likewise metallic green, at the proximal margin of the forewing there is a large white spot. Patria unknown. — In *aleanderi* *Weeks* from Venezuela the discal band is absent.
- mysius*. **Th. mysius** *Plötz* presumably also belongs here, but it has 6 small apical spots in a curved row. The fringes are yellowish. Expanse of wings: 30 mm. Patria unknown.
- enotrus*. **Th. enotrus** *Cram.* (= *lucidator* *Sepp*) (167 f). The median band is composed of coherent quadrangular spots, the second from above appearing more oblong. Beneath on the forewing there are small apical spots.

The hindwings exhibit a yellowish median spot and yellowish dusting outside in front of the distal transverse band. Guiana, Colombia, Peru, Brazil.

Th. orpheus Plötz (168 c) is very much distinguished by a dark blue submarginal band on all the *orpheus*. wings, which is broader on the hindwing and here beneath dusted white; the forewing shows beneath a large, white inner-marginal spot. Pará.

Th. erycina Plötz (168 a) has the forewing somewhat extended below the apex and on the hindwing *erycina*. a prolonged and somewhat hook-shaped anal angle. The spots of the hyaline band are narrow, there may be one or two small apical spots. Owing to the speckled white fringes, the border appears somewhat dentate. Beneath the forewing is spotted somewhat rusty-red below the apex, the hindwing is strewn with lilac-grey with 2 rows of black spots being distally more or less bordered with rusty-brown. Brazil, Colombia.

Th. aulus Plötz (= *fulviluna* Mab.) (168 a) is above very similar, but it has red-brown fringes. *aulus*. Beneath the apex of the forewing is strewn with lilac and at the proximal angle there is a large, white spot dusted with a rusty brown. The hindwing shows only a somewhat curved transverse band reaching neither the costal margin nor proximal margin and being all round bordered with rusty red. Colombia, Brazil.

Th. centrites Hew. is above quite black, only at the apex of the forewing there are 3 minute white *centrites*. hyaline spots, the oblique band is absent altogether; instead of it there is a black antemarginal band, and on the hindwing a black cell-end streak and 1 or 2 spots near the proximal margin. Ecuador.

Th. mithras Mab. The upper surface is coppery brown, on the forewing 2 postmedian, black, *mithras*. dentate transverse lines, between which the ground is lighter, yellowish; a similar yellowish spot is at the cell-end. Hindwings unicolorous. Beneath blackish, the yellow markings clearer and also on the hindwings there are 2 black, undulate transverse lines approaching each other at the proximal margin. Porto Cabello.

Th. telegonoides Mab. & Boull. is above dark brown with a somewhat indistinct, darker, post- *telegonoi-* median transverse band. The hindwings have broad, yellow fringes. The thorax is metallic bluish-green. Beneath *des*. the same, but the hindwing exhibits a broad, yellow marginal spot like in *anaphus* (167 a), but the anal angle itself is brown. Colombia.

Th. gallius Mab. (168 b) still more resembles *anaphus* above, but it is smaller and on the forewing *gallius*. it has very small white apical spots. The yellow anal angle of the hindwing is of a different shape and terminates upwards in a fine point. On the under surface the band-marking is rather more indistinct, the yellow spot more extensive. Colombia.

Th. chrysorrhoea G. & S. is similar, but above of a purer black, so that the band-marking is *chrysor-* scarcely prominent anymore; the small apical spots are absent, too. The hindwings are rounder, the yellow *rhoea*. spot narrower. Panama.

Th. phalaecus G. & S. also looks like a small *anaphus* (167 a), but it has 3 minute apical spots; *phalaecus*. the hindwing is extended to a triangular apex. The under surface is blackish-grey with the same band-marking; also the proximal angle of the forewing shows a yellowish spot. Described from Mexico.

Th. sumadue Lef. is an entirely doubtful species which may also belong to *Telegonus*. The short *sumadue*. description runs: above and beneath brown with a yellowish macular band, larger spots in the middle, very small ones at the apex. Forewing at the base more extensively green than the hindwing. Cuba.

Th. capucinus Lef. Doubtful like *sumadue*. Wings jet-black, towards the base yellowish. Forewing *capucinus*. of the ♂ with a small arcuate streak and beneath with an indistinct spot in the middle. The ♀ has 2 adjacent yellow spots above and beneath. The hindwing is black at the base, beneath also at the proximal margin strewn with red and grey atoms. Cuba.

Th. zopyrus Plötz (= *hydarnes* Mab.) (168 a) greatly resembles *justus* (168 e), but it has somewhat *zopyrus*. rounder hindwings with speckled fringes and on the forewing 3 minute white apical spots. From Brazil.

Th. bridgmani Weeks from Bolivia has remained unknown to us.

bridgmani.

17. Genus: **Calliades** Mab. & Boull.

It unites the characters of *Cecropterus* and *Thymeles*. The ♂ exhibits a costal fold. The hindwings are long extended in the ♂, more roundish in the ♀.

phrynicius. **C. phrynicius** Hew. (= *viridans* Mab.) (168 c) is a very conspicuous species, looking like a gigantic *Cecropterus*. Brown, on the forewing with a yellowish, little transparent oblique band and a similar distal margin of the hindwing, into which the ground-colour penetrates on the veins in a dentiform way. Brazil.

polias. **C. polias** G. & S. is similar, but it has a white oblique band and unicolorous hindwings without a light border. Body and bases of wings are covered with hair of a somewhat olive-green lustre. Beneath the hindwing shows 2 black macular rows, being distally near the anal angle bordered with whitish. Central America.

rhacoces. **C. rhacoces** Mab. resembles the preceding and differs by a much longer oblique band, almost touching the proximal angle and being composed of yellow spots; the hindwings are likewise unicolorously brown, beneath at the base strewn with yellowish-white with 2 black transverse bands distally bordered with yellowish-white, at the anal angle with 2 distinct light teeth. Above the thorax is haired green, beneath whitish. The species described according to but 1 ♀ from Central America, is perhaps the ♀ of *Cecropterus zentus* Mschlr. (comp. p. 871 (172 d)).

18. Genus: **Orneates** G. & S.

The only species shows the palpal formation of *Thymeles*, the antennae being quite gradually thickened and bent round like a hook. On the forewing the cell is $\frac{2}{3}$ of the length of the costal margin, the costal fold is present, the lower median vein rises close at the base, the upper one near the lower cell-angle. The hindwings are not prolonged, and round at the anal angle. The posterior tibiae show, beside the two pair of spurs, a thick hair-pencil.

aegiochus. **O. aegiochus** G. & S. looks above like *fuligator* (167 f), but the blue or green on the hindwing is very much reduced. Beneath the wings are blackish, on the forewing the proximal half of the costal margin is green, on the hindwing the base is green, in the cell there is a small yellow spot, and the proximal margin is yellowish. Costa Rica, Panama to Colombia.

19. Genus: **Telemiades** Hbn.

This genus resembles on the whole in its characters the *Thymeles*, but the species are all much smaller with shorter and broader wings, particularly the hindwings being broader. The bent tips of the antennae are mostly longer than the thickened other part. The 3rd palpal joint is longer and more porrect. The ♂ shows a costal fold. About 20 species are known; the genus is confined to Tropical America and goes to the north as far as Mexico.

amphion. **T. amphion** Hbn. (= *zethos* Plötz, *antiopa* Plötz) (168 e, f) is a small, blackish-brown species with a black postmedian band, very small apical hyaline spots and a hyaline discal band composed of 4 spots, on the hindwing with 2 black transverse bands. Mexico to Brazil.

lamus. **T. lamus** Mab. is very similar, smaller, strewn over more yellow, the discal band consisting of 3 smaller, more remote spots, the small costal spot being absent. Obidos.

misithus. **T. misithus** Mab. also looks very much like *amphion* (168 e), of a lighter greyish-brown, the discal band like there, but encircled dark; the hindwings are still lighter, at the costal margin silky grey, with 2 dark brown transverse bands. The under surface is ashy-grey with distinct bands. Guiana, Bolivia, Colombia.

lurideolus. **T. lurideolus** Mab. has the same discal band as *lamus*, but the ground-colour is a yellowish red-brown, the hyaline spots are yellow; beside the dark brown, postmedian transverse band there is another short one at the base. The hindwings are of a darker brown, with the 2 indistinct transverse bands. Amazon.

penidas. **T. penidas** Hew. (172 b) is above likewise rusty-brown, but with much smaller and separated discal hyaline spots; the spot in the cell shows 2 distally directed teeth, near the proximal angle there is yet a fifth very narrow spot. The more longish hindwing exhibits 2 darker transverse bands. The type in the British Museum originates from Santarem.

azines. **T. azines** Hew. (168 f). Above rusty-yellow with blackish, dark apical half and yellowish hyaline spots, on the hindwing with a black cell-spot and a postmedian row of small black spots. Amazon.

perseus. **T. perseus** Mab. & Boull. (172 b) is quite similar, the ground-colour somewhat more olive, the 2 discal spots larger, adjoining, the small discal spot of the hindwing smaller, the macular row consisting only of 5 minute spots. Described from Surinam.

iao. **T. iao** Mab. The forewing is deep blackish-brown with 3 minute apical spots and 2 white hyaline spots in the disc: a punctiform spot in the cell and below it another one being twice as long as broad. The hindwing is unmarked with white fringes and a slight angle in the middle of the distal margin. Beneath the forewing

shows an oblique band composed of 5 white spots; the hindwing is yellowish in the basal half; in the black distal part there are 2 yellow dots above the cell and 2 distally to them. The species described according to one specimen from the Coll. STAUDINGER, perhaps does not belong here.

T. avitus Cr. (168 f) is above rusty-yellow, in the ♀ more yellowish-grey with 3 apical and 3 discal hyaline spots, the 2 middle ones forming a jacent U, the small third spot being situate outside; besides there are 2 rather indistinct transverse bands, and on the hindwing there is a median spot and a brown post-median band. Beneath more yellow, in the ♀ with more distinct spots. Guiana to the Amazon.

T. littera Mab. (169 a) is smaller and more slender, resembling *ceramina* above, on top more grey, on the forewings similarly spotted as in the preceding: the cell-spot U-shaped, the one below it V-shaped, a third spot behind it, and between the latter and the small apical spots there are yet 2 smaller ones nearer to the distal margin. The hindwing beneath is white with a brown transverse band. South America.

T. ceramina Plötz (169 a) resembles *littera* above, but the 2 small hyaline spots between the discal and apical spots are absent. The under surface is greenish olive-grey, particularly light is the base of the hindwing, crossed by 2 dark brown macular bands, the distal one being more coherent. From Surinam.

T. megalloides Schs. presumably belongs here. Above brown intermixed with ochreous-yellow hair; the marking is like in *ceramina*, the hyaline spots small, the cell-spot parted. The under surface is lighter, in the ♀ the base of the hindwing is yellowish-grey, the transverse bands divided into spots. Expanse of wings: ♂ 34, ♀ 39 mm. Described from Peru.

T. cobarus Mschlr. (= *lucida* Plötz) is above rusty-brown, towards the base greenish with similar discal spots as the preceding, behind them parallel to the distal margin a black submarginal band; a second broad dark band crosses the middle of the wing. The middle of the hindwing is crossed by a blackish transverse band, on both sides of a lighter, red-brown tint; the marginal area is of a pale violet tone. Beneath the basal inner-marginal area is whitish, in it 2 small blackish spots.

T. epicalus Hbn. (= *avitus* Cr. p. p.). Above rusty-brown, on the forewing with 2 small apical spots, without the discal hyaline spots and with 2 black macular bands being continued on the hindwing. Brazil.

T. diores Mab. & Boull. is very similar, but it has longer hindwings being pointedly extended at the anal angle. The apical half of the forewing is blackened; the proximal band is coherent, not composed of spots; on the hindwing the cell-spot is smaller, the proximal macular band less interrupted. South America. — var. **obscurus** Mab. & Boull. is above more blackish-brown, only in the disc of the forewing somewhat lighter reddish-brown. French Guiana.

T. megallus Mab. is larger, above more blackish-brown, towards the base darker; the marking with the 2 black transverse bands is otherwise rather the same; the proximal one is straight and runs through the middle of the cell. The hindwing beneath is ashy-bluish towards the anal angle, in the ♀ more at the proximal margin, the distal black macular band contrasting sharply with it. Panama.

T. purpurascens H.-Schöff. resembles *nicomedes* (168 e); on the rusty-brown forewing it has 3 small apical spots; a straight black band runs through the base of the cell to the proximal margin, another one farther distally bifurcates at the cell-end in the shape of a Y. The hindwing is darker brown with only one band through the middle. The under surface is of a lighter red, the band of the hindwing composed of small square spots, with 2 more spots at the costal margin. Brazil.

T. nicomedes Plötz (168 e) resembles *megallus*, above with a slight olive tint. The transverse bands are narrow, composed of spots; the one between the median veins is on the forewing removed far inward, the band of the hindwing begins at the costal margin with an isolated square spot. The under surface has a somewhat violet lustre, the bands are broader and more spotted. In case *nicomedes* Mschlr. from Colombia and Brazil, the description of which runs somewhat differently, should be identified, PLOETZ' species must get a new name.

T. aberrans Mab. & Boull. is above black, towards the base light rusty-brown, on the hindwing more extensive. The forewing shows 3 small apical spots, a spot at the cell-end and below it 2 more in an oblique line, the lowest being largest. The hindwing shows a black cell-spot and behind it in a curved row small black streak-spots between the veins. The middle of the distal margin is somewhat angular. Beneath similar, the bases of the wings more yellowish; the disc of the hindwing is ochreous-yellow with 2 rows of small black dots, the proximal one composed of 2, the distal one of 3. French Guiana.

T. acutipennis Mab. & Boull. has longer forewings with a pointed apex. Above rusty-brown with 3 apical and 3 light yellow discal spots; the marking is otherwise the same as in *perseus* (172 a), but the colouring is darker, the spots of a lighter yellow. At the proximal margin of the hindwing beneath there is a dimple with

a hair-pencil at the upper margin, so that the species would have to be placed to the genus *Ablepsis*, if it had no costal fold. Described according to a ♂ from French Guiana.

20. Genus: *Cecropterus* H.-Schäff.

The genus contains more than a dozen of small species greatly resembling each other. The 3rd palpal joint is shorter than in *Telemiades*. No costal fold. On the forewing the upper median vein rises from the lower cell-angle or even somewhat above it. The male hindwings are much longer, in the ♀ round. It is very difficult to tell one species from another species.

- aunus*. **C. aunus** F. (= *zarex* Hbn., *brontes* F., *longipennis* Plötz, *orontes* Plötz) (168 f) has no small apical spots. The fringes of the hindwings are above white only in the costal-marginal half, beneath somewhat farther downward. On the hindwing beneath being somewhat strewn with yellowish, and often appearing in the ♀ rather variegated, there are 2 slightly bent bands bordered with a lighter colour. Widely distributed from Mexico to Paraguay.
- oryx*. **C. oryx** Fldr. from the Upper Rio Negro in North Brazil entirely resembles *aunus* (168 f), but much larger (twice as large as HÜBNER's figure of *zarex*), the band of the forewing above interrupted at the subcostal, the marginal spots and fringes of the hindwing broader and without the dark bands on the hindwing beneath.
- bipunctatus*. **C. bipunctatus** Gmel. (168 f) has 2 apical dots, the lower one may be absent above. The comparatively broad, white oblique band ends rather taperingly at the proximal angle; in its middle there may be a black dot. The whiteness of the fringes of the hindwing extends far downward. From Mexico to Brazil.
- dhega*. **C. dhega** Mab. has 4 apical dots and grey palpi. The white oblique band of the forewing is somewhat curved and terminates round below, the lowest spot is not smaller than the one above it. The fringes of the hindwings are light grey, not white in the upper half of the distal margin. Beneath the hindwing is decidedly yellowish-grey, towards the margin rosy-grey with 2 brown bands, the proximal one blurred, the distal one very broadly outside bordered with a light grey on the outside. From Rio Grande.
- zonilis*. **C. zonilis** Mab. has only 2 apical dots; the white band projects somewhat about in the middle, is otherwise equally broad and terminates round below. Fringes of hindwings above extensively white. On the hindwing beneath the 2 brown bands are united towards the costal margin; the distal one is very broad, below the anterior angle convex and bordered with a sharp light colour; also on the forewing beneath there is a light submarginal line. Central America to Colombia.
- lunulus*. **C. lunulus** Plötz (168 g) has 3 apical dots, the lowest of which projects far distally; the costal-marginal spot of the oblique band is very small. The hindwing is beneath reddish-grey, towards the base lighter, the two brown bands at the costal margin confluent, the distal one near the costal margin forming an angle, below it somewhat concave, bordered with a light colour, the lightest at the anal angle; the triangular space between the two bands at the proximal margin is rosy-grey, at the apex with 2 light dots. The palpi are whiter than in *zonilis*. Brazil.
- reflexus*. **C. reflexus** Mab. & Boull. Of the 3 apical dots the lowest projects proximally by half its width. The white oblique band is very broad, the costal spot narrow, in the middle it distinctly projects, the lowest spot forms on the inner-marginal vein a fine apex towards the base. The hindwings beneath are light grey, marked like in the preceding. Sa. Catharina.
- neis*. **C. neis** Hbn. (168 g) has 3 apical dots. The white band strongly projects distally at the lower cell-angle. The fringes are above throughout brown. Hindwings beneath brown, strewn with yellowish, with 2 brown bands and a very dark border. Palpi ashy-grey. Mexico to Brazil.
- capys*. **C. capys** G. & S. extremely resembles *neis* (168 g); the lowest spot of the band is narrow, terminates obtusely and touches somewhat more than half the width of the spot above it. The sexual organs are very different from those of *neis*. Central America.
- bocus*. **C. bocus** Plötz (= *integrifascia* Mab.) (172 d) is very closely allied to *capys*. The white oblique band does not project so far at the cell-angle. Forewings beneath light brownish-grey, in *neis* almost black; the hindwings are reddish-grey with 2 rather narrow blackish bands. Fringes brown. Guiana, Colombia, Brazil.
- itylus*. **C. itylus** Hbn. (168 g) is smaller, with broader wings, without or with 1 or 2 apical dots, the white band rather narrow, particularly the costal-marginal spot; at the lower cell-angle there is no spot at all, the lowest is narrow and touches the one above it only in the distal half. Fringes of the hindwings grey. Guiana to Brazil.
- cinctus*. **C. cinctus** H.-Schäff. (= *rotundatus* Mab.) (168 g) has 4 apical dots in one line. The lowest spot of the band is distally removed by about a quarter of its width, at the lower cell-angle there is a minute triangular spot. Hindwing comparatively round with white fringes. Distributed from Mexico to Brazil.

C. electrus *Mab.* is very conspicuous owing to its orange-yellow palpi; the forewing exhibits 3 apical dots. The band ends pointedly below. Beneath the hindwing is quite black, only in the disc with few yellow scales. Brazil.

C. zeutus *Mschlr.* (= *koluthos* *Plötz*) (172 d) has no apical dots; the thorax is above olive-green like the bases of the wings. Body beneath yellowish-white. The white band of the forewing is light yellow at the costal margin. Fringes at the proximal angle of the forewing and of the whole hindwing white. Hindwing beneath strewn with greenish, the 2 black bands bordered with a lighter colour. Guiana, Colombia.

C. sulfureolus *Mab.* has a light sulfurous band and 3 apical dots in one line; fringes of the hindwings narrow yellow. Hindwing beneath reddish-grey with 2 darker narrow bands and a dot at the base. Brazil.

C. vectilucis *Btlr.* (168 g) has 4 apical dots, otherwise the same. Fringes of the hindwings more yellowish-grey than the narrow distal margin. Hindwing beneath blackish-brown, similarly marked. Guatemala to Colombia.

21. Genus: **Ectomis** *Mab.*

It has the same characters as *Cecropterus*, but the hindwing is rounded like a lobe at the costal margin and covered with a membrane like a pocket. Beneath the forewing shows a hair-pencil at the base of the lower median vein. The posterior tibiae are covered with long, bent hair and exhibit 2 pair of spurs. Only 1 species:

E. adoxa *Mab.* is quite black, on the forewing with a hyaline spot parted by the veins, in the shape of a short median band growing broader downward; above it at the costal margin the band is continued by white dusting. Beneath similar, but the hyaline band is broadly bordered with white. Described according to a ♂ from Cayenne. In the British Museum there is said to be another quite black animal devoid of the hyaline spot.

22. Genus: **Rhabdoides** *Scdd.*

Antennal club moderately thickened, bent round to a long hook. The 3rd palpal joint is conical and somewhat longer extended. On the forewing the upper median vein rises before the lower cell-angle; the cell itself is covered with short hair. There is no costal fold; posterior tibiae as in *Ectomis*.

R. cellus *Bsd. & Lec.* (= *festus* *Hbn.*) (169 a, b) is above deep blackish-brown with a beautiful chrome-yellow, partly transparent oblique band and on the hindwing with speckled yellow fringes. Beneath the hindwing is strewn with a lilac grey towards the margin and exhibits 2 blackish-grey macular bands. Wide-spread in North and Central America. — From Mexico there is a form before me from Orizaba: **mexicana** *form. nov.* (169 a) in both sexes, with an almost twice as broad, deep orange-yellow band terminating round below, the small apical spots still smaller, reduced to 2, the yellow fringes of the hindwings narrower. — **pseudocellus** *Cool.* from Arizona has also an orange-yellow band, but it is much smaller, with grey fringes of the hindwings, and beneath the lilac-grey scales are absent on the hindwings.

R. casica *H.-Schöff.* (= *epigena* *Btlr.*) (169 b) is dark brown with minute hyaline spots in the disc and before the apex, the hindwing with broadly white fringes. The hindwing is white in the marginal third, otherwise grey, watered with black, with 2 dentate bands bordered with bluish-black. From Arizona to Colombia.

R. tehuacana *sp. nov.* (169 b) I as yet consider to be a distinct species, since there are also typical before me from the same district. It greatly resembles *casica* above, but it is of a somewhat duller, greyer tone, with smaller, partly almost extinct hyaline spots. On the hindwing beneath the white marginal area is much broader, proximally convex, almost without any black dashes, the other space of a pure ashy-grey without the jet-black transverse bands which are merely indicated, and near the proximal margin with 2 whitish spots. The forewing is somewhat more tapering at the apex. From Tehuacan (Puebla).

R. jalapus *Plötz* (169 b) is a doubtful species: above blackish-brown with a dark leaden-grey, curved antemarginal band, and a similar cell-end streak, the hindwings with white fringes. Beneath more reddish-grey with the same marking, but in black; the hindwing is yellowish-brown with 2 blackish transverse bands. The species was described from Jalapa (Mexico) and is perhaps only a variable *M. albociliata* (170 c).

23. Genus: **Bungalotis** *Wts.*

Antennal club gradually thickened and extended into a twice as long, fine, scarcely bent tip. The 3rd palpal joint is scarcely visible. Venation as in the preceding genus. The cell of the forewing is covered with

long hairs, only in *midias* they are shorter. Tibiae as in *Rhabdoides*. The genus contains about a dozen of beautiful, large, very sexually dimorphous species.

- midas*. **B. midas** Cr. (= *rhetus* F., *astylos* Cr., *corentinus* Plötz) (169 c) is above rusty-yellow with few small black spots. Very characteristic are the hindwings, being black at the costal margin, with a deep ultramarine reflection. The ♀ having been described as *astylos* is quite different, much larger, blackish-brown with a discal hyaline band and yellow fringes. Known from Guiana, Colombia, Bolivia, Peru, and the Amazon.
- ramusis*. **B. ramusis** Cr. (= *astrapaesus* Hew., *damias* Plötz) (169 b, c) is darker, more coppery brown, the small black spots partly with pupils, without any blue at the costal margin of the hindwing. Little is known of the ♀, the white spots partly with black rings being extremely variable, unless they be quite different species. Guiana, Colombia, Peru, Brazil, everywhere rare.
- dexo*. **B. dexo** Mab. resembles *nicephorus* (172 b), being above rusty-brown with a row of small yellowish punctiform spots near the border of the forewing. The hindwing shows a small yellow cell-spot and a curved row of 5 similar small spots behind it. Beneath the same, though darker. The ♀ is much larger with broader wings and the same small spots, but the cell-spot of the hindwing is absent. From the Chiriqui.
- nicephorus*. **B. nicephorus** Hew. (172 b) greatly resembles *dexo*, but the forewing is without any marking, and on the hindwing there are 2 small spots in the cell. The ♀ is not known. Described from Colombia.
- zohra*. **B. zohra** Mschr. is smaller than *dexo*, but very similar. The wings are much darker towards the margin; the forewing shows only one small yellowish dot between the lower radial veins. The under surface is monotonously blackish-brown without any markings. French Guiana.
- phraxanor*. **B. phraxanor** Hew. (= *heras* Mab.) (169 d) is above dark brown, towards the margin darker with a large, tripartite, yellow hyaline spot in the disc and 2 or 3 rather large apical spots. In the cell of the hindwing there is a large, oblong spot and behind it a curved row of 5 or 6 black dots which are yellowish beneath. The ♀ is larger, blackish-brown, with 4 light yellow spots forming an oblique median band. Colombia.
- polygius*. **B. polygius** Latr. (172 b, c) is very similar, somewhat smaller and lighter with the same discal spots and a small double dot encircled by black below it. The hindwing also exhibits small, yellow hyaline spots surrounded by black in the cell and a curved row behind them. The ♀ is larger, darker, the spots are narrower, more like a median band; on the hindwing there are only 2 small spots behind the cell-spot. Brazil.
- eripis*. **B. eripis** Hew. (= *etias* Hew.) is of a darker blackish-brown, beside the discal spots of the preceding there is a fifth spot in the cell. The hindwings are marked as in *phraxanor*. Beneath somewhat lighter. The ♀ is more yellowish-brown, otherwise very similarly marked. From Tapajoz.
- erythus*. **B. erythus** Cr. (169 d). This extremely rare species from Peru, known to us only from CRAMER'S bad figure, is not to be confounded with any other by the speckled, somewhat dentate fringes of the hindwings. The ♀ is similar, but it has broader wings. Perhaps it is better placed to *Nascus*.
- salatis*. **B. salatis** Cr. (= *muretus* F., *tychios* Plötz) (169 e). The forewings are above unicolorously rusty-yellow with a black cell-spot, a postmedian row of black streak-spots and a white apical dot; the hindwings are marked the same. The ♀ presumably belonging here is of a lighter yellow with 2 apical dots and a large apical hyaline spot composed of 4 small ones, the hindwings like in the ♂. Colombia. Brazil.
- sebrus*. **B. sebrus** Fldr. (= *pelignus* Hew., *gonatas* Hew., *ophiuchus* Plötz) (169 d) has broad, rusty-brown wings darkened towards the margin. Before the apex a punctiform spot, below it in an oblique line 2 somewhat larger hyaline spots. On the hindwing there is a black cell-spot, behind it in a curved row 5 small black spots, of which that between the median veins is pupilled white. The under surface is more blackish. The ♀ is larger, somewhat lighter, with the same spots, besides with a spot in the cell and a double spot below the submarginal spots. On the hindwing the cell-spot and 3 or 4 of the postmedian row are pupilled white. Colombia, Peru.

24. Genus: **Heronia** Mab. & Boull.

Distinguished by the anal angle of the hindwing being extended into a small, rounded tail, the border of the hindwing being slightly undulate. The second palpal joint is very broad, the 3rd short, ascending obliquely. Only one species:

- labriaris*. **H. labriaris** Btlr. (= *seneca* Plötz) (172 c) is above brown with small hyaline spots: a large square one, exhibiting 2 teeth towards the margin, at the cell-end and a similar one below it, 3 in the apex and 4 below it. Hindwing with 2 yellowish postmedian macular bands and a round hyaline spot in the cell near the base. Patria unknown.

25. Genus: **Discophellus** G. & S.

Antennal club moderately thickened, with a very fine point unciformly turned round. Costal fold present. On the forewing the lower median vein rises nearer to the base than to the upper. The hindwing is somewhat angular before the anal angle and sinuated in the middle of the distal margin; otherwise like the preceding.

D. porcius Fldr. (= *doriscus* Hew., *coccutiens* H.-Schäff.) (169 e) is above of a dim reddish-yellow, *porcius*. towards the border brownish with a cellular hyaline spot on all the wings, which, however, may be also absent on the hindwings; on the forewing there is below it a darker double ring-spot and behind it a series of darker, small ring-spots or punctiform spots. The ♀ has broader wings with more extensive hyaline spots, particularly in the disc of the forewing. Central America to Peru and Colombia.

D. sebalus Cr. (= *crameri* Latr.) (169 f) is scarcely to be mistaken for any other species by the numerous *sebalus*. hyaline spots on both wings, most of which are encircled by dark. The ground-colour is a beautiful, warm, ferruginous brown, towards the border somewhat darker. French Guiana.

D. fulvus Plötz (= *erythras* Mab.) (169 e, f) is a somewhat smaller species of a fiery ferruginous *fulvus*. yellow ground-colour; the ♂ has no hyaline spots, instead of them black dots: on the forewing, a small one at the cell-end and 2 below it situate beneath each other; on the hindwing there is behind the double cell-dot, which may also be confluent, a postmedian row of black dots; the border is very much darkened. The ♀ has in the disc of the forewing 3 discal hyaline spots greatly varying in size. A small apical hyaline spot may be present. *erythras* described by *Mabille* has somewhat smaller hyaline spots hollowed out towards the margin, for which reason it may be separated. Colombia.

26. Genus: **Nascus** Wts.

Chiefly distinguished by the much stronger, cylindrical antennal club; the end, being turned over, is extended into a fine, very long point. Costal fold present. In the ♂ the anal angle is extended into a rather long lobe, in the ♀ the hindwing is broader and often undulate at the border. 18 mostly large, beautiful species.

N. phocus Cr. (= *pherenice* Hew., *morphus* Cr.) (169 f) has dark brown wings with an olive tint, *phocus*. sometimes exhibiting a slate-coloured lustre, with 4 small, yellowish apical spots connected by 1 or 2 small hyaline spots below them with the 4 discal spots. The costal margin of the hindwing is broadly black, and through the middle extend 2 similar faded transverse bands. Beneath the hindwing is more extensively yellow in the disc. The ♀ is much larger with broader, rounder wings, and larger and white hyaline spots. Distributed from Mexico to Brazil and Colombia. — **dianina** Plötz has above bright yellowish-red hindwings, whilst beneath *dianina*. it is much darker, almost black. Brazil, Paraguay.

N. euribates Cr. (= *hesus* Dbl., *gaurus* Plötz, *nicias* F., ? *tychios* Plötz) (170 a) is above bright reddish- *euribates*. yellow with 3 small apical spots and 3 large, yellow discal spots distally gnawed out. The hindwing with a blackened distal margin exhibits a black cell-spot and behind it a row of 5 more spots. Guiana to Brazil. *MABILLE* presumes that *tychios* placed by *GODMAN* as the ♀ to *B. ramusis* may belong hereto as the ♀ or to an unknown species.

N. cous Mschlr. (= *coris* Mab. ex errore, *eugamon* G. & S.) differs from *phocus* (169 f) by its light *cous*. brown wings with white, not yellow hyaline spots, 5 of which are situate in the apex, 4 in the disc. The hindwing is light yellow; in the distal third broadly brownish. Venezuela, Guiana to Brazil. — **solon** Plötz differs by its shorter, small apical spots crowded together, so that the impression of a single oval spot is created; in the disc there are but 3 hyaline spots. On the upper surface the colour of the hindwings and the base of the forewing are more greenish-brown. — **decemmaculata** Sepp presumably also belongs hereto. The markings are exactly *decemmaculata*. as in *cous*. The body, base of the forewing and the hindwing are of a still more intense green, the fringes of the hindwings speckled with black. In case the bad figure is to represent the type itself, *SEPP*'s name would have to be inserted for it. Described from Surinam.

N. phaselis Hew. (= *faustinus* Burm., *coenosa* Mschlr.) (169 d) is above light ferruginous brown *phaselis*. with 5 apical spots and 4 widely separated hyaline spots in the middle, the latter distally gnawed out, and all of them encircled by black. Hindwing in the cell and behind it spotted black. Fringes of hindwings distinctly speckled white. The ♀ is larger with larger hyaline spots, and it is therefore not out of the question that *Bungalotis erythus* Cr. (169 d) belongs hereto as the ♀. Widely distributed from Venezuela to Argentina almost over the whole of South America.

- caepio*. **N. caepio** H.-Schäff. (170 b). A smaller species, above dark brown, in the disc somewhat lighter, yellowish, with 4 yellow apical streaks and 4 discal spots. Hindwing above unmarked, only beneath spotted black. Honduras to Colombia.
- mermeros*. **N. mermeros** Mab. is much smaller, otherwise very similar. Above lighter brown with the discal spots much more crowded together, so that the impression of a single large spot is created. The hindwing is less extended at the anal angle. The antennal club is much shorter, the point bent down shorter than in *caepio*. Brazil.
- glarus*. **N. glarus** Mab. is dark brown, in the proximal half of the forewing obliquely cut off and in the disc of the hindwing dimly reddish-yellow. The 4 discal spots form an oblique row on the border between the 2 colours; in the apex of the forewing there are only 2 hyaline spots. On the hindwing the usual cell-spot and the bent row of 5 spots behind it. From the Lower Amazon.
- advena*. **N. advena** Mab. very much resembles *glarus* and is above likewise rusty brown, but it has 3 small apical spots; in the disc there are 4 golden yellow hyaline spots only separated by the veins, the one situate below the cell being gnawed out inside and outside. The hindwings are darker. The antennae exhibit a yellow ring before the club. Costa Rica to Colombia.
- gildo*. **N. gildo** Mab. is above dark brown with a remarkably broad costal fold; of the 4 yellow discal hyaline spots the one situate in the cell is gnawed out towards the costa; the spots are besides small, separated far from each other. Hindwing as in the preceding. Coary.
- gizala*. **N. gizala** Möschl. (= *cephisus* Hew., *evathlus* Mab.) (170 a). The brown forewing is haired yellow at the base; at the apex there are 4 apical dots, the disc is traversed by the 4 hyaline spots in the shape of an oblique band from the costal margin to the proximal angle, the lowest being bent somewhat inwards. Hindwing in the middle slightly angled, unmarked. Beneath the proximal half of the wing is unmarked dull yellow. The ♀ is somewhat larger and lighter and more extensively yellow. Panama, Colombia.
- cephise*. **N. cephise** H.-Schäff. (170 b) is above lighter ferruginous brown than *caepio*, the yellow discal spots somewhat more of the shape of an oblique band owing to the lowest spot being enlarged; the 3 small apical spots form a row inwards convex, in *caepio* distally. The hindwings are unmarked, the fringes somewhat speckled. Beneath on the forewing, the proximal margin is whitish, and on the hindwing the postmedian band of spots exhibits two distinct yellowish spots at the anal angle. The ♀ has broader wings and white instead of yellow spots. Brazil. — **N. orima** Schs. I daresay belongs hereto as a form with somewhat more markings: on the forewing there is in the discal spot in the angle between the radial and median vein a small brown dot, and the hindwing shows two darker transverse lines. Petropolis.
- broteas*. **N. broteas** Cr. (169 f) is above blackish-brown with 4 apical streaks and a white oblique band and a punctiform spot in the middle before it. Hindwing in the middle angled, above in the basal part with ochreous-yellow hair, beneath in the proximal half light yellow, at the costal margin with the beginning of a band of black spots. Of this species only ♀♀ are known, of *cous* only ♂♂, so that both may belong together. Guiana, Brazil.
- annulicornis*. **N. annulicornis** Mschl. (170 a) is smaller than *broteas*, above rusty brown, towards the base lighter, on the hindwing very extensive. On the forewing there are 5 small apical spots in a straight line, beside 4 small black dots. The middle is traversed by an oblique band of 4 white hyaline spots from the costal margin to the inner-marginal vein; the two uppermost are the largest and on both sides gnawed out. The middle of the hindwing is traversed by 2 straight rows of faded black spots. The under surface is lighter, otherwise marked the same, but on the hindwing the 2 macular bands are coherent. Here likewise only ♀♀ seem to be known. Nicaragua to Brazil.
- cebrenus*. **N. cebrenus** Cr. (170 b) is known only from the figure. Above blackish-brown, towards the base yellowish. On the forewing there are 3 small apical spots and a straight band of white hyaline spots in the middle, the three upper ones of which are coherent, whilst the two smaller lower ones are separated from each other; in the angle between the median and radial vein there is another small spot. The hindwings are darker brown, unmarked, the body is covered with ferruginous brown hair. The position of the insect described from Surinam remains doubtful.
- orita*. **N. orita** Schs. is known to us only from the description and seems to be most closely allied to *zopyrus* (168 a) placed by MABILLE to the genus *Nascus* as a synonym to his *hydarnes*. Wings dark brown with light olive-brown hair at the base. The forewing shows 3 small white apical spots and a quadripartite discal band, the uppermost spot of which is yellowish at the costal margin, whilst the others are white, transparent. Hindwing extended into a short, obtuse, bent, small tail with white-speckled fringes. Beneath the discal spots are all white, the apex of the forewing is strewn a little with white; the hindwing shows 2 indistinct transverse shades, the distal one being outside analwards spotted whitish. Expanse of wings: 38 mm. Described from Peru.

N. lucca Plötz (170 b) is united with *gizala* by GODMAN, but according to MABILLE it differs very much from it. Above blackish-brown, towards the base and on the hindwings light ferruginous brown; forewing with 3 small apical spots and a discal band as in *gizala* of 4 spots. Hindwing with a bent postmedian row of black dots exhibited beneath as lighter, black-ringed spots. Patria unknown.

N. adrastor Mab. & Boull. (172 b) very much resembles *lucca*, but it is larger, on the forewings the subapical spots are absent altogether, and in the discal oblique band the costal-marginal spot is absent, whilst the hindwings are above without any markings. The fringes are greyish-white, speckled with brown. Beneath the ring-spots of the hindwings are greyish-white, not pupilled yellowish. Described according to 1 ♀ from South America.

N. diaphorus Mab. & Boull. (*Mschlr.*?) (172 b), according to the authors' opinion, may be the ♂ of *adrastor* or *lucca*. In its exterior it entirely resembles the ♂ of *Bungalotis ramusis* (169 c), but it has light, almost white fringes which are dentate and somewhat speckled particularly distinctly on the hindwings; the hindwing is extended and angled on the lower median vein. Described according to 1 ♂ from Surinam.

27. Genus: **Ablepsis** Wts.

Smaller species with a moderately thick antennal club of the shape of a flattened sickle; palpi rising, the 2nd joint closely pressed to the face, the 3rd very short. Costal fold absent. The cell is longer than two thirds of the costal margin. Between the two inner-marginal veins of the hindwing there is a flat depression with a hair-pencil next to it. Posterior tibiae densely fringed, with 2 pair of spurs.

A. vulpinus Hbn. (170 b) is above reddish-brown, on the forewing with 3 small apical dots and 3 large, yellow discal hyaline spots: one being distally gnawed out in the cell, a large, oblong-quadrangular one below it, and a small, quadrangular one at the upper, distal corner of the latter. The hindwing shows the usual marking of the black discal spot and of the row of spots behind it; on the under surface this row of spots is distally of a lighter yellow shade. Brazil.

A. guyanensis Mab. & Boull. differs from the preceding by its more yellowish, towards the margin darkened colour, the discal spots being distally bordered with black, and by 2 more, longitudinal, black spots in the cell. The groove on the hindwing is much deeper, inside clad with yellow hair and white scales, the yellowish-red hair-pencil next to it is much longer. 1 ♂ from French Guiana.

28. Genus: **Porphyrogenes** Wts.

Here the antennal club is very slender, ensiform with a fine point; the 3rd palpal joint is very short, obtusely conical. Costal fold present; the cell of the forewing is as long as two thirds of the costal margin. The upper median vein rises far before the cell-end, the lower nearer to the base than to the upper one; the proximal margin is very convex and covers a lustrous silvery spot of the costal margin on the hindwing, which exhibits a hair-tuft; the anal fold of the hindwing is clad with long, hair-shaped scales. Only one species:

P. omphale Btlr. (168 e) is unmistakable: above black with an orange oblique band, the base of the forewing and the whole middle of the hindwing with a brilliant blue reflection. Amazon District to Bolivia.

29. Genus: **Murgaria** Wts.

Antennal club gradually thickened and ending into a fine point, behind its thickest part unciformly bent. The porrect 2nd palpal joint is densely scaled, the 3rd very short. Costal fold present. The cell of the forewing is of more than $\frac{2}{3}$ of the length of the costal margin; the upper median vein rises more than 3 times as distant from the base as from the cell-end. The hindwing is insignificantly lobated; the transverse vein is straight; the middle radial is absent. Tibiae as in the preceding.

M. albociliata Mab. (170 c) is above black with white fringes of the hindwings and grey fringes of the forewings. On the wings there are two more or less distinct transverse bands formed of dark leaden grey spots. Beneath the ground-colour is more brownish-grey, the marking of the bands blackish. Mexico to Colombia. — **nigrociliata** Mab. & Boull. has quite black fringes and originates likewise from Mexico.

M. leucophrys Mab. from Panama is quite deep blackish-brown without the marking of the bands, with white fringes on all the wings.

M. toxeus Plötz has quite black fringes as *nigrociliata* has, and beneath on the forewing in the costal-marginal half the beginnings of two white transverse bands. Mexico.

30. Genus: **Aethilla** Hew.

This genus contains large, mostly dark insects with triangular hindwings broadly and uniformly rounded off at the border, the chief mark being the upper median vein rising far before the cell-end. The ♂ exhibits a long hair-tuft on the posterior tibiae armed as usually with two pair of spurs; the middle radial is entirely absent. The ♂ has no costal fold.

- echina*. **A. echina** Hew. (170 c) is a beautiful species above purple blackish-brown, with indistinct darker transverse bands. Beneath easily discernible by the beautiful, whitish-blue border of the hindwing, which exhibits yet a crescentiform spot inwards between the median veins and is crossed by a fine notched line. Before me from Mexico, distributed through the whole of Central America to Panama and farther to Colombia and Ecuador. — *oeclydes* is the name of forms in which the light border of the hindwing beneath disappears more or less, so that at last only the crescentiform spot remains, being situate farther inwards. It seems to occur more to the south and is before me from Colombia. — *melas* Plötz (170 c, d) is perhaps also only a quite black form of it, from Rio de Janeiro.
- eleusinia*. **A. eleusinia** Hew. is above dark brown, on the forewing with 2 darker brown bands; hindwing with a cell-spot and a postdiscal, indistinct band; fringes white. Beneath coloured as above, but without the bands and towards the distal margin lighter. Expanse of wings: $2\frac{1}{2}$ inches. From Quito.
- haber*. **A. haber** Mab. is allied to *coracina* (170 c): above deep reddish-brown with a purple reflection and violettish-blue bands and spots, a band at the base of the forewing touching neither the costal margin nor the proximal margin, one in the middle, one oblique spot each at the apex and at the proximal angle; towards the margin lighter reddish or violettish-grey, more broadly so on the hindwing. Beneath more reddish-brown, similarly marked. Expanse of wings: 52 mm. From the Andes of Peru.
- subviolacea*. **A. subviolacea** Mab. is above violettish-black, all the wings above crossed by 3 faded black bands. Beneath the same, but dull, and on the hindwing towards the margin slightly violet or bluish; outside of the black median band there are here 3 white spots with a slight blue tint. Described from Ecuador.
- coracina*. **A. coracina** Btlr. (170 c) is above quite similar; beneath the wings are of a duller brown, both close in front of the margin narrowly strewn with a bluish-white, the hindwing in the basal part quite dark, the distal band broken up into small spots. Amazon District.
- epicra*. **A. epicra** Hew. is above dark brown with white fringes, both pair of wings exhibit near the middle 2 darker transverse bands. Beneath the forewing is as above; hindwing in the anal half of the distal margin grey, above the anal angle with a short, white margin, distally indented. As in *eleusinia*, the distal margin of both pair of wings forms a single bent line; the apex is sharp. Expanse of wings: $2\frac{1}{2}$ inches. Ecuador.
- lavochrea*. **A. lavochrea** Btlr. (= *athymnios* Mschlr.) (170 d) is above lighter and beneath similar to *Telegonus anaphus* (167 a) with a yellow, large marginal spot on the hindwing. In Central and South America.
- memmius*. **A. memmius** Btlr. (170 d) is distinguished by green dusting beneath, particularly towards the margin; towards the anal angle there are 2 or 3 antemarginal, high, yellow crescentiform spots. From Venezuela.
- later*. **A. later** Mab. is above black mixed with a reddish-brown; at the base of the forewing 3 light reddish-brown spots; at the costal margin a large, long, excised spot, from the centre of which a jet-black band extends to the inner-marginal vein, behind it two light rust-coloured brown spots between the median veins; in the marginal area there are two extinct bluish-black bands. On the dark hindwing there is a ferruginous spot at the base, behind it a strongly dentate band of the same colour, behind it a band of violettish-grey spots. Beneath the wings are black in the basal halves, outside slightly reddish-brown, on the forewing with a black band, on the hindwing with a bluish-white one being only distinct at the proximal margin. Peru.
- primus*. **A. primus** Plötz, from Brazil, resembles *echina* (170 c) above, the whole basal parts of the wings are very much darkened. Beneath the ground-colour is a dull brown, at the apex of the forewing and at the border of the hindwing very little dusted with a whitish-grey, with a light cell-end spot of the hindwing and two narrow, faded darker bands behind it, the distal one of which parts the whitish-grey marginal dusting.
- nocera*. **A. nocera** Plötz is a smaller species with a somewhat produced anal angle of the hindwing. Above uni-coloured brown, beneath duller with 2 undulate, darker transverse lines and a white limbal line before the brown fringes; before this light line the margin is deeply darkened. From Colombia.
- gigas*. **A. gigas** Mab. The description of this Peruvian species has unfortunately not been accessible for us.
- peruviana*. **A. peruviana** Mab. is somewhat smaller than *coracina* (170 c). Above the wings are black with a reddish-brown reflection. The under surface is of a purer black, on the forewing with a narrow reddish-brown distal margin; the hindwing shows a broader reddish-brown margin. Fringes on both sides black. Peru.

A. buffumi *Weeks* is a species having remained unknown to me, and it seems to me very doubtful-*buffumi*. fully placed here. Above dark brown, strewn with grey except the apex; from the middle of the costal margin across the cell-end to the proximal angle extends a series of very prominent white hyaline spots: 2 small subcostal ones, in and below the cell-end one large one each, and in the angle of the median veins behind it a smaller one; 2 small subapical dots; an antemedian and a postmedian darker band, the same on the hindwing very much dusted with grey. Beneath the same, the hyaline spots more coherent, the proximal angle of a lighter colour, from where a lighter part extends to the apex parallel with the margin. Hindwing with more faded bands. Expanse of wings: $1\frac{1}{3}$ inch. Suapure (Venezuela).

31. Genus: **Achalarus** *Scdd.*

The only species also has rounded hindwings, but with a very slightly produced anal-angular apex, the upper median likewise rises somewhat before the cell-end. The ♀ has no hair-tuft on the posterior tibiae. Costal fold present.

A. lycidas *Abb. & Sm.* (= *lyciades* *Hbn.*) (170 d). Above dark brown with speckled fringes and yellow *lycidas*. discal hyaline spots of the forewing, the middle one being small and quadrangular and protruding before the others towards the margin. Beneath the hindwing exhibits a white marginal area, and it is very much transversely watered with black. North and Central America.

32. Genus: **Cogia** *Btlr.*

Well distinguished by a star-shaped hair-tuft exhibited by the ♂ on the upper surface of the hindwing which is entirely rounded off, not produced at the angle. The posterior tibiae do not exhibit a hair-tuft, the ♂ is without a costal fold.

C. hassan *Btlr.* (170 d) is a small, above dull blackish-brown species with speckled fringes and 4 minute *hassan*. subapical spots on the forewing. Beneath the proximal margin of the forewing is reddish-yellow, the hindwing exhibits 4 whitish undulate lines and the space between the two middle ones darkened. Brazil.

C. cajeta *H.-Schäff.* (170 d, e) is larger, above towards the base faintly haired olive-greenish, beside *cajeta*. the small apical spots with 6 small, white, discal hyaline spots partly bordered with a darker shade. The hindwing exhibits 2 irregularly undulate macular bands. The under surface is lighter yellowish-brown, otherwise marked the same, the distal macular band of the hindwing outside light. South America.

C. hippalus *Edw.* (= *gila* *Plötz*) (170 e) is still larger; the lowest discal spot of the forewing which is *hippalus*. in *cajeta* divided into 2 small ones, is here large, outside and inside somewhat gnawed out. The under surface of the hindwing is light ash-grey, towards the margin almost white, strewn with brownish, with 3 bands of brownish-grey spots. From Arizona to Mexico.

C. calchas *H.-Schäff.* (= *terranea* *Btlr.*) (170 e). Here the discal spots of the forewing are absent *calchas*. except 1 to 3 small yellowish costal-marginal spots below each other. The hindwing is beneath brown, strewn darker, with similar macular bands as in *hippalus*, but instead of the light marginal part there is another marginal band, the median band and antemarginal band being lead-coloured, the apex of the forewing strewn with a whitish grey. South America.

C. valeriana *Plötz* (= *valeria* *Plötz* m. s.) (170 e) is midway between *hippalus* and *calchas*, with *valeriana*. somewhat smaller discal hyaline spots than *hippalus*, whilst the under surface is coloured and marked more like in *calchas*; the basal part of the hindwing is uni-coloured dark. From Mexico.

C. troilus *Mab.* is above coloured like *calchas*, but with broader wings, with 4 small subapical spots *troilus*. in an oblique line; fringes greyish-black. Beneath the forewing is reddish-grey in the two basal thirds, distally lilac-grey, the proximal margin whitish. Hindwing light violettish-grey, with two blackish bands which are very broad and only leave a narrow stripe of the ground-colour between them. Hair-pencil at the proximal margin of the hindwing long, ash-grey, almost white. Bolivia.

C. helenus *Mab.* is above very similar, with 5 small subapical spots. Fringes speckled somewhat *helenus*. darker. Beneath the forewing is brown, at the apex light violet. Hindwing violettish-grey with two regular, dentate, blackish bands. The hair-pencil at the proximal margin of the hindwing is short and of the same colour as the ground of the wing. Brazil.

C. eluina *G. & S.* (170 e, f) is above dull brown with the same small spots as in *calchas*, with 2 ir-*eluina* regular undulate macular transverse bands across both wings. Fringes slightly undulate and particularly on the hindwing speckled somewhat darker. Beneath coloured and marked the same, the forewing somewhat lighter than the hindwing. Mexico and Central America.

punctilia.

C. punctilia Plötz (170 e) is closely allied to *calchas*, but smaller; above the small costal-marginal spots of the forewing are altogether absent, beneath there are 2 light strigiform spots before and close behind the middle. Hindwing violettish-brown with 2 dark brown sinuate transverse bands, the distal one very broad. Marginal area not darker. Santarem.

phlius.

C. phlius Plötz resembles *eluina* (170 e, f), but it is still larger, more blackish-grey; instead of the discal spots a black cell-end spot and one below it; on the forewing an antemarginal, irregular macular band partly spotted white outside. Hindwing as in *eluina*. Brazil.

33. Genus: **Cabares** G. & S.

Chiefly distinguished by the forewing being slightly angled below the apex, so that the apex looks somewhat cut off, and by the forewing being angled in the middle. Only 3 species.

potrillo.

C. potrillo Luc. (170 f) looks above like the hyaline-spotted species of the preceding genus, but the discal hyaline spots form more a narrow oblique band. Beneath the forewing is in the middle light greyish-brownish, the hindwing lilac-grey with 2 brown transverse bands, the distal one of which is cloudily widened towards the margin. Fringes dark brown. Mexico, Central-America, Cuba.

enops.

C. enops G. & S. (172 a) looks somewhat like a small *potrillo* without the discal hyaline spots in the cell and above it, but instead there is a dark spot at the cell-end. Under surface likewise somewhat similar, but the more yellowish hindwing is without the distal median band, instead of which there is an antemarginal row of moon-spots. Known from Mexico and Honduras.

nicola.

C. nicola Plötz (170 f) somewhat resembles *potrillo*, the discal band of hyaline spots is shortened, it does not reach the costal margin nor has it any small spot below the lower median vein. The under surface is more uni-coloured, the transverse bands are much narrower. Pará.

34. Genus: **Ephyriades** Hbn.

Costal fold absent. On the hindwing the upper median vein rises close at the lower cell-angle, the lower one very close to it. Otherwise very much like the preceding genus, but the wings without the feeble angles.

otreus.

E. otreus Cr. (= clericus F., zephodes Hbn.) (172 a) is a large, brown species with 3 broad, faded darker transverse bands on both wings; the forewing exhibits in the disc behind the cell two large white hyaline spots forming an oblique band, and behind them 6 subapical spots arranged in a bow. Beneath very similar. South America.

pekahia.

E. pekahia Hew. is above dark greyish-brown, at the distal margin and a postmedian transverse band on both wings darker brown. On the forewing there are 8 small, white hyaline spots: 2 in the middle, 3 in a line rectangular to the costal margin behind them, and 3 small subapical spots. Beneath coloured and marked the same. Expanse of wings: 1½ inches. From Venezuela.

35. Genus: **Typhedanus** Btlr.

Here the ♂ shows a hair-tuft on the hindwing above, the costal fold being absent. The apex of the forewing is rather sharp; the anal angle of the hindwing is extended, in *umber* very long. The upper median vein rises on the hindwing before the cell-end, the lower one close at the base. Only 2 species.

umber.

T. umber H.-Schäff. (= zephus Btlr.) (170 f). Above olive-brown with darker transverse bands, 4 apical hyaline spots, 3 hyaline spots below each other in the middle of the costal margin and 2 somewhat larger ones outside and below them obliquely below each other. Beneath marked the same, but the transverse bands are here more distinctly prominent, since the ground is lighter, strewn somewhat darker. Venezuela.

alladius.

T. alladius G. & S. (170 f, g) looks exactly like a small *Teleg. anaphus* (167 a): brown, with darker, faded transverse bands and above with a narrowly, beneath broadly yellow anal angle of the hindwing. Mexico to Colombia.

36. Genus: **Caecina** Hew.

This genus, in contrast with the preceding genus, has beside the hair-tuft on the hindwing above also a costal fold. The forewing has below the apex a slight, somewhat rounded angle, below it the margin is concave. The antennal club is ensiform.

C. calathana Hew. (170 g) in its colouring and marking entirely resembles *T. alladius* from which, *calathana*, however, it is at once discernible by the different shape of the wings. Central and South America.

C. compusa Hew. (170 g) is above and beneath marked the same, only of a duller colouring, the transverse bands somewhat more distinct, without any yellow colour on the hindwing. Amazon District.

C. calanus G. & S. (173 a) is likewise similar to *calathana*, but it has much broader wings. The hindwing is not produced so far at the anal angle and above only the fringes are ochreous-yellow. Known from Mexico, Guatemala and Panama.

37. Genus: **Ancistrocampta** Fldr.

In contrast with the neighbouring genera, the antennal club is here only moderately thickened, at the pointed end angularly flawed, not bent, and at the exterior edge it shows scanty, minute bristles. Costal fold absent; on the forewing the upper median vein rises far before the lower cell-angle. The posterior tibiae armed with 2 pairs of spurs exhibit a bent hair-pencil.

A. hiarbas Cr. (= *ozias* Hew.) (170 g) is above deep velvety brown with a large, yellow discal hyaline spot narrowed on both sides, very much widened beneath at the proximal angle. The hindwing is beneath brownish-or violettish-grey with a dark brown costal-marginal spot and such a transverse band from the middle of the proximal margin to the costal-marginal angle. South America.

A. celsus F. (= *clearchus* Plötz) (171 a) is similar, smaller, and the yellow discal band extends in about the same width from the costal margin to the proximal angle; the under surface is just like above, only of a duller brown. There are doubts about the nomenclature of this species and of the preceding. We are of GODMAN's opinion that it is thus most correctly placed. South America.

A. amyrus Mab. is closely allied to *hiarbas*. The ground-colour is above and beneath uni-coloured black; the yellow discal band begins broadly at the costal margin and grows narrower towards the proximal margin; beside it there is a similar, yellow subapical hyaline band divided into 6 small spots by the veins. The palpi are dirty yellow, haired black. Colombia. Rio San Juan.

38. Genus: **Spathilepia** Btlr.

Well distinguished by the shape of the wings with a very much projecting angle below the apex of the forewing and a dentate border particularly on the hindwing, which is somewhat produced in the middle of the distal margin and at the anal angle. Costal fold present. Posterior tibiae with hairy fringes and 2 pairs of spurs. Only one species.

Sp. clonius Cr. (171 a) is above black with a white discal hyaline band, a series of minute apical spots and between them with a small oblong spot. Beneath very variegated with the same marking of the forewing as above, only the oblique band being much broader at the proximal angle. Hindwing brownish, at the costal margin mixed with bluish-grey and with large, dark brown spots bordered with light, the largest at the costal margin triangular, with its apex crossing the cell and extending close to the proximal margin. Very common from Mexico almost through the whole of South America.

39. Genus: **Oecydrus** Wts.

The shape of the wings is very much like in the preceding genus, but the margin is not dentate, but entire. Costal fold present; all the rest is like the *Spathilepia*, except the hindwing of the ♂ exhibiting a hair-tuft on the upper surface.

O. chersis H.-Schäff. (= *evelinda* Btlr.) (171 a) shows above the same colouring and marking as *Sp. clonius*, and there also exist resemblances beneath; the apex of the forewing and a large discal spot on the hindwing are reddish-brown; the costal margin and base are mixed with a bluish-grey. Brazil, Amazon.

O. ochrilinea Schs. is the same, but the discal band is yellow. Described from Peru. *ochrilinea*.

O. aziris Hew. (171 a) differs above by only one small hyaline costal-marginal spot and the absence of apical spots. The under surface is very variegated: forewing light reddish-brown, towards the apex speckled with a whitish-grey, with some black antemarginal spots, the margin itself being more grey. Hindwing light ash-grey with some dark brown spots partly tinted white on both sides. Rio de Janeiro.

40. Genus: **Thorybes** Scdd.

The genus is closely allied to *Cogia* and chiefly differs by the absence of the hair-tuft on the hindwing. Costal fold absent.

- mexicanus.* **Th. mexicanus** H.-Schäff. (= nevada Scdd., ananius Plötz) (171 b). Above brown with scanty, small discal hyaline spots; fringes of the forewings speckled, on the hindwing light, almost unspeckled. Beneath the brown wings are very much strewn with a whitish-grey towards the margins, unmarked, before this the hindwing shows two broad, faded transverse bands. From the Rocky Mountains through California to Mexico.
- daunus.* **Th. daunus** Cr. (= bathyllus Swsn.) (171 b) is similar, larger, with larger hyaline spots and also on the hindwing with somewhat speckled fringes. Beneath likewise similar, but the marginal area is not so light strewn whitish-grey, the transverse bands are more or less lead-coloured. In the south of the Atlantic United States. — The green larva with a yellowish subdorsal stripe, red collar and black head, lives on Papilionaceae, such as Glycine, and pupates on the stalk of the food-plant.
- paucipuncta.* **Th. paucipuncta** Dyar (171 c) is very closely allied to *daunus*, somewhat smaller, the discal spots very much reduced, often scarcely visible. Beneath likewise similar, the forewing towards the margin scarcely brightened up, the hindwing only in the middle of the distal margin, otherwise with the same transverse lines; fringes of the hindwing almost white. Sierra de Guerrero (Mexico).
- mysie.* **Th. mysie** Dyar (171 b, c) is considerably larger, above very light fawn-coloured, the hyaline spots somewhat more reduced than in *daunus*, the fringes of the hindwing somewhat speckled. Beneath marked as the other species on a ground very much strewn with a whitish grey, with 2 irregularly spotted transverse bands, the proximal one darker. From Mexico.
- thedeia.* **Th. thedea** Dyar looks above somewhat like *Cogia eluina* (170 e, f): brown with a blackish transverse band through the middle, on the median veins distally dentate, behind it two small white spots in the cell and one at the costal margin, before the apex 4 minute hyaline spots; some more, small, antemarginal spots are ringed blackish: one above the upper median vein, a double one above the lower, and a double one above the inner-marginal vein. Hindwing with traces of a postmedian row of spots. Expanse of wings: 40 mm. Mexico (Tehuacan).
- uvydira.* **Th. uvydira** Dyar (171 c) is the largest, most beautiful species of the genus, above nut-coloured brown, outside darker, with the hyaline spots of *daunus* and very dark-speckled fringes. Beneath the hindwing is almost white in the larger distal half, with 2 fine, distinctly black dentate lines; on the forewing an antemarginal line of light moon-spots. Mexico (Guerrero), taken in June.

41. Genus: **Phaedinus** G. & S.

Very closely allied to the preceding genus, distinguished by a much longer 3rd palpal joint which is porrect; the antennal apex is turned down and shorter.

- caicus.* **Ph. caicus** H.-Schäff. (= moschus Edw., schäfferi Plötz) (171 c) looks above almost like *Thor. daunus*, but the discal spots are somewhat narrower. The fringes of the forewing brownish, speckled darker, the fringes of the hindwings almost white. Beneath the hindwing is not so brightly strewn, with two broad, lead-coloured black transverse bands, the proximal one broken up into 2 spots. Arizona and Mexico.
- aventinus.* **Ph. aventinus** G. & S. (173 b) is somewhat like *caicus*, smaller, with more extended hindwings and quite dark fringes. The hyaline spots of the forewings are much smaller, almost punctiform and more numerous. The under surface is quite uni-coloured dark, almost without any traces of transverse bands. Described from Mexico.

42. Genus: **Cocceius** G. & S.

Distinguished from the preceding only by the presence of a costal fold in the ♂.

- pylades.* **C. pylades** Scdd. (171 b) is the most similar to *Thorybes mexicanus* (171 b), only somewhat larger with somewhat larger discal hyaline spots, all the fringes distinctly speckled. Beneath the marginal part is not so very bright, the 2 macular bands on the hindwing are somewhat narrower. Atlantic States.
- drusius.* **C. drusius** Edw. looks like *Ph. caicus* (171 c), it has less and smaller hyaline spots arranged somewhat differently. The under surface is darker, the bands of the hindwings indistinct; on the ventral side of the abdomen the ventral line is absent; the palpi are dark grey, mixed with brown, in *caicus* yellowish. Expanse of wings: 1.7 inches. Southern Arizona.
- syloson.* **C. syloson** Mab. is as large as *Th. daunus* (171 b). On the forewing there is an oblique band composed of 5 hyaline spots, the spot above the upper median vein projects towards the margin. Fringes of the forewing broad, in the middle dark, towards the apex and proximal angle whitish, the fringes of the hindwing almost white; speckled dark. Beneath the hindwing is blackish, traversed by 2 still darker macular bands. Described from Cayenne.

43. Genus: **Hydraenomia** Btlr.

Contains 1 small species with a shorter antennal tip. The 3 rd palpal joint is thin, bare, porrect. The distal margin of the forewing near the proximal angle somewhat concave. Costal fold present. The distal margin of the hindwing is likewise concavely indented below the middle and on the whole undulately dentate.

H. orcinus Fldr. (= albicuspis H.-Schäff.) (171 c). Above brown, at the base and margin black *orcinus*. with 2 darker transverse bands bordered by large and small hyaline spots on both wings. Beneath the hindwing is almost white with 3 black transverse bands parted by the light veins. South America.

44. Genus: **Drephalys** Wts.

The chief mark of this genus based upon one single species consists in the lower median vein of the hindwing rising close at the lower cell-angle. The ♂ shows a costal fold; the border of the wings is entire, the hindwing at the anal angle produced into a triangular point.

D. helixus Hew. (173 a, b). Above dark brown, at the base haired yellowish-green, on the forewing with *helixus*. 4 large and 3 minute hyaline spots, on the hindwing with 2 yellowish macular transverse bands. Beneath the hindwing shows a broad, white discal band on a lilac-grey ground, reaching neither the costal margin nor the proximal margin. From Panama.

45. Genus: **Paradros** Wts.

Allied to the following genus and also closely approximating *Hydraenomia*. Chiefly distinguished by the prolonged hindwings with an entire margin. On the forewing the lower median vein rises close at the base. The antennae are longer than in *Lignyostola*.

P. phoenice Hew. (171 d) is above blackish-brown with numerous white spots, yellow on the hindwing. *phoenice*. Beneath the hindwing is yellowish-grey in the basal part, in the distal part violettish-grey, between the two colours with a black transverse line. Costal margins orange-yellow. Brazil.

P. eous Hew. (171 d) is smaller, above very similar, but on the hindwing the yellow spots are reduced, *eous*. in the middle there is only an oval transverse spot. Beneath quite different, on the hindwing reddish-brown with a large, reddish-white transverse spot and a smaller, almost square spot in the black anal angle. From Brazil (Pará).

P. alcmon Cr. (171 d) differs by its white hindwing with a broad black border, also beneath coloured *alcmon*. and marked the same. Guiana to Brazil.

P. oriander Hew. is above dark reddish-brown, on the forewing with 2 cellular hyaline spots, 2 behind *oriander*. them and 3 subapical spots; near the proximal margin there are 2 yellow spots; the hindwing shows 2 transverse bands, each of 3 yellow spots. Forewing beneath the same, but at the apex lighter reddish. Hindwing reddish-brown with a round orange-yellow central spot and 2 similar spots near the proximal margin behind the middle. Anal angle black. Expanse of wings; 1.9 inches. Amazon.

P. formosus Fldr. (171 e) entirely resembles *phoenice* above, but beneath it is quite different, in *formosus*. the larger distal-marginal and costal-marginal half violettish-brown or cherry-brown, at the base and proximal margin yellowish, at the anal angle black with a round white postcellular spot terminating in the ♀ like a band into the proximal margin. Widely distributed from Panama to Brazil.

P. dumerilii Latr. (171 e) looks very much like *formosus*, but the white hyaline spots are larger, the *dumerilii*. yellow median band of the hindwing is distally concave. The hindwing beneath is dark brown in the ♂, bluish-grey in the ♀, distally tinted violet, only at the proximal margin yellow, instead of the white central spot there are the yellow spots of the upper surface, in the ♀ much lighter, almost whitish-yellow. From Surinam.

46. Genus: **Lignyostola** Mab.

Antennal club moderately thick, uniformly bent and finely pointed. Palpi porrect, dehiscent, with a slender bare terminal joint. The cell of the forewing is longer than two thirds of the costal margin; the lower median vein does not rise so near at the base as in *Paradros*. Hindwing decidedly lobate, the distal margin before it somewhat excised. Costal fold present. Posterior tibiae densely fringed with 2 pair of spurs, the upper pair short. Half a dozen species from Tropical America.

- lacydus.* **L. lacydus** Drc. (= pamphygargyra Mab., aon Plötz) is a uni-coloured blackish-brown insect with ochreous-yellow palpi. Nicaragua, Panama to Pará.
- crinisius.* **L. crinisius** Cr. (171 e) is above blackish-brown, in the basal half haired ochreous-yellow, at the body olive-green; on the forewing in the cell and below it a hyaline spot distally extended into 2 teeth, 3 minute subapical spots and between them an oblong strigiform spot, below it two more; the hindwing is of a more intense ochre-colour, in the middle traces of a blurred median band. On the under surface the basal parts of both wings are olive-green, the hindwing exhibits in the middle a broad, behind it a narrower ochreous-yellow macular band and a yellowish-white proximal margin. Widely distributed in South America.
- despecta.* **L. despecta** Btlr. (171 f) is above brown, with 2 small square hyaline spots on the forewing. Beneath marked the same, at the base and at the proximal margin of the forewing, and on almost the whole hindwing olive-yellowish. Brazil (Pará).
- ferrugineus.* **L. ferrugineus** Plötz (171 f) is above brown, towards the base fox-coloured, the same on the body and hindwing of which only the apex is dark brown, the distal margin narrow and the anal angle broader dark brown. On the forewing a minute postcellular hyaline spot between the radial and median vein. Bahia.
- epimethea.* **L. epimethea** Plötz (171 f) is somewhat larger than *ferrugineus*, the proximal third of the forewing brighter and rather sharply defined reddish-yellow, with 3 very fine, small subapical spots. Beneath lighter brown, towards the base and at the proximal margin of the hindwing olive-yellowish, on the hindwing traces of a broad, darker, postmedian transverse band. Brazil.
- cydana.* **L. cydana** Schs. has remained unknown to me and, according to the description, it may belong to *epimethea*. Wings dark brown, the basal third of the forewing rusty-yellow. Hindwing thickly haired ochreous-brown, except the costal margin and apex. Beneath lighter brown, at the bases of the wings and at the proximal margin of the hindwing tinted greenish-yellow. Expanse of wings: 46 mm. Petropolis.

47. Genus: **Hyalothyru**s Mab.

Distinguished from the preceding genus chiefly by the posterior tibiae which are without a hair-tuft.

- neleus.* **H. neleus** L. (171 f) is above black, on the forewing with numerous small, white hyaline spots, the hindwing in the disc and at the proximal margin extensively white, in the ♂ somewhat brownish, particularly beneath. Widely distributed in South America.
- priscus.* **H. priscus** Fldr. is described as a dark blackish-brown insect, with 6 white hyaline spots in the disc and 5 small subapical spots in a bent row, the hindwing with a large, white, round discal spot. According to 1 ♀ from the Rio Negro.
- nitocris.* **H. nitocris** Cr. (171 f, g) differs from *neleus* by its entirely black hindwing being white only beneath at the base like the body. Surinam.
- leucomelas.* **H. leucomelas** Hbn. (171 g) has much more extensive hyaline spots on the forewing and is well distinguished by a large reniform, in the ♀ almost circular hyaline spot of the hindwing, whilst beneath the hindwing is all white except the broad black border. South America.

48. Genus: **Mionectes** Mab.

It entirely resembles the preceding genus, but the posterior tibiae exhibit only 1 pair of spurs. Only one species.

- infernalis.* **M. infernalis** Mschlr. (171 g) is above like *nitocris* except much smaller hyaline spots, but it is easily discernible by the ochreous-yellow under surface of the hindwing with a blackish-brown apical spot. Guiana.

49. Genus: **Grynopsis** Wts.

It is unlike the allied genera owing to the peculiar shape of the wings, the hindwing with an undulate border and before the anal angle with a very lobate distal margin. The club of the long antenna is hardly thicker than the shaft, the 3rd palpal joint short, a hidden costal fold present. Posterior tibiae only with terminal spurs.

- coelestis.* **G. coelestis** Dbl. & Hew. (171 g) is above black with a bright slate-blue reflection, large hyaline spots and speckled fringes. Beneath the hindwing is of a deep orange-yellow except the black distal margin. Colombia, Brazil.

50. Genus: **Marela** Mab.

The species on the whole remind us of *Spathilepia clonius* (171 a), by the shape of the wings with the stunted apex of the forewing as well as by the marking and colouring, but they are without the costal fold. The submedian vein is beneath in its whole length set with stiff bristles. The lower median vein rises nearer at the base than at the cell-angle.

M. tamyroides Fldr. (172 d) is above black, at the bases of the wings with some slate-blue lustre, *tamyroides*, with a large tripartite discal spot, a small one below it, 4 small subapical spots and a number of very small ones below them; fringes speckled light. Beneath the apex of the forewing is brightened up by brownish, the inner-marginal area bluish-white, like the base of the hindwing, the hindwing itself being brown with 2 dentate black transverse bands. Colombia, Brazil.

M. tamyris Mab. (172 d) is smaller, the hyaline spots rather larger, in the submedian space there *tamyris*, are two distantly separated spots. The brown hindwing is extensively mixed with white, also at the proximal margin, at the base, however, not white. Amazon.

51. Genus: **Phanus** Hbn.

Antennal club very slender, almost semicircularly bent. Palpi short, appressed. Costal fold present. On the forewing in the submedian area, in the basal half and at the proximal margin with long hair, the inner-marginal part of the hindwing being also densely clad with hair; the anal part of the hindwing is extended into a lobe forming a tooth on the inner-marginal vein. Only one species.

Ph. vitreus Cr. (= *momus* F., *marshalli* Ky.) (172 e). Above black with an olive-brown tint, with *vitreus*, particularly in the ♀ longish hyaline spots in all the cell-spaces, also on the hindwing, though they vary greatly in their development. Widely distributed from Mexico to South America, in open places even in gardens on flowers common.

52. Genus: **Entheus** Hbn.

Antennae as in the preceding genus, but the palpi more porrect and diverging. On the forewing the costal fold is absent. Characteristic are the short posterior tibiae with a hair-pencil and only one pair of spurs, whilst the first tarsal joint is almost twice as long as the tibia, flattened and bulged. The species are distinguished by a very pronounced sexual dimorphism: the ♂♂ are mostly black and orange-red or yellow, the ♀♀ dark brown with large white spots, also on the hindwing, and often with an orange wedge-shaped spot near the base of the forewing. The species being very much alike and the sexes rather indefinite, there is a want of clearness in this genus.

E. priassus L. (= *talaus* L., *peleus* Cr., *telemus* Plötz) (172 e). ♂ above velvety blackish-brown *priassus*, with a broad, orange transverse band, an orange wedge-shaped preapical spot, and with a more transparent, oblong spot projecting from the middle of the transverse band towards the margin. The ♀ is somewhat browner, in the cell there is an orange wedge-shaped spot, a discal transverse-band, 6 subapical spots forming a chain, and a longish spot between these two, as well as a large, round spot in the disc of the hindwing are white, the spots of the forewings half showing through. Fringes black. Widely distributed in South America.

E. cramerianus Mab. (= *talaus* Cr. nec L., *peleus* Cl. nec Cr.) (172 e) is very similar, somewhat *cramerianus*, smaller, stouter, the orange bands much broader, all the 3 spots broadly confluent, so that they enclose a small, black triangular spot. The ♀ still more resembles that of *priassus*, the row of subapical spots on the forewing is interrupted, the discal spot on the hindwing extends farther to the proximal margin and is distally extended to a point, downward somewhat dentate. On the forewing there is another small white spot in the submedian area, the discal spot is interrupted in the cell. Fringes of the forewing near the anal angle white. Guiana.

E. dius Mab. (172 e, f) is larger than *priassus*, in the ♂ the transverse band is very broad, of a richer *dius*, yellow, the spot behind it small, separated from the transverse band and subapical spot, in the basal part of the cell an indistinct orange stripe. At the proximal margin of the hindwing a fold set with white scales. The ♀ likewise similar to *priassus*, but the subapical and discal spots are divided each into 2 groups, the white discal area of the hindwing is very large, the proximal margin white, too. Costa Rica to Colombia.

E. sirius Mab. is a fourth extremely similar species, hitherto ascertained only in the female sex, *sirius*. Spots similar to those in *cramerianus* (172 e). The discal spot in the cell is still farther separated from the lower ones. The white spot of the hindwing is almost quadrangular, its lower edge straight, extending to the grey proximal margin. MABILLE presumes this rather uncertain species to belong to *gentius*, but this is probably wrong. Described from Cayenne.

- matho.* **E. matho** G. & S. (172 f) resembles *priassus*, in the ♂ with more reddish wings and a large, red, basal wedge-shaped spot of the forewing, the discal band of a deeper yellow, the proximal margin of the hindwing broadly whitish. In the ♀ the small spot between the two bands is very small and nearer to the distal band. Guatemala, Nicaragua, Costa Rica.
- concinna.* **E. concinna** Plötz (172 e) looks very much like the ♀ of *cramerianus*, but in the basal part of the forewing there is a large triangular, sulphureous spot, the hindwings are quite yellow with a narrow black border. From Pará.
- lemna.* **E. lemna** Btlr. (= *annae* Plötz, *berytus* Hew.) (172 f). The ♂ is black, with a large yellow basal area inclusive of the costal margin and proximal margin, with two broad yellow oblique bands, often between the two latter with a small yellow spot, hindwing yellow with a black border. The ♀ described as *annae* differs from that of *priassus* by the absence of the white spot below the subapical band and a more extensive, somewhat brownish discal spot of the hindwing. Brazil (Pará).
- gentius.* **E. gentius** Cr. (172 f) almost looks like *lemna*, but the colour is a beautiful orange-yellow, the spot below the subapical band is large, obliquely quadrangular. The body is orange, too. Colombia.
- eumelus.* **E. eumelus** Cr. (= *serenus* Plötz) (172 g) is black with a narrow, in the ♂ shortened orange stripe in the cell and very narrow white oblique bands and spot. The hindwing is in the ♂ orange with a narrow black border, in the ♀ black with a white discal spot. Guiana.

53. Genus: **Cabirus** Hbn.

Almost the same as the preceding, but the posterior tibiae show beside the hair-pencil two pair of spurs. The palpi are more sessile, the 3rd joint short, conical. Only one species.

- procas.* **C. procas** Cr. (= *julettus* Stoll) (172 f) in the male entirely resembles the numerous yellow and black *Cyllopoda*-species of South America: dark yellow with black margins and a black oblique band before the apex of the forewing. The ♀ is quite different, the yellow colour is replaced by white hyaline spots with broad brownish-black veins and folds. Guiana to Peru.

Group B.

In the species of this group the antennal club is mostly not so semicircularly bent, occasionally with an obtuse end. The cell of the forewing never attains two thirds of the length of the costal margin; the middle radial vein always rises nearer at the upper than at the lower one. The anal angle of the hindwing is often extended, forming a lobate or dentiform projection; the middle radial vein is always rudimentary. Most of the nearctic forms exhibit a costal-marginal fold in the ♂, never a discal stigma. In a great number of genera the ♂ exhibits a hair-tuft on the posterior tibiae or forehips; the former always exhibits 2 pair of spurs. All the species of this group, as far as they are known, rest with their wings flatly spread out, frequently on the underside of leaves. (Group A comp. p. 849).

1. Genus: **Garga** Mab.

Antennal club strong, bent, with a short point, the 3rd palpal joint correct, conical. Costal fold absent. On the forewing the upper median vein rises a little before the lower cell-angle, the lower much nearer at the base, on the hindwing with a prolonged anal angle the same. Only one species.

- platon.* **G. platon** Fldr. (= *olena* Mab.). Size of *Sophista aristoteles* (172 g), but the wings narrower, the forewing in the apex, the hindwing in the anal part more produced. Wings above dark brown, forewing speckled grey and black, the discal macula forms an X-shaped spot, before the apex 3 hyaline dots. Hindwing with a whitish, bipartite subcostal macula, the posterior region blackish with 2 grey bands, the proximal margin and anal part densely haired. Under surface ochreous-brown, the hindwing shows beside the hyaline spots above a cell-spot; the small discal bands and the bipartite anal macula whitish in a brown ground, the hindwing with a partly extinct whitish discal band, the proximal margin light with a black subanal macula, before which there is another dark brown one. Palpi, chest and stripes on the ventral sides white. From the Upper Rio Negro and Ecuador.

2. Genus: **Dichelura** Mab.

Antennal club obtuse. Shape of the wings very characteristic: the distal margin of the forewing below the apex produced in the shape of a tooth, the same on the lower median vein, between concave. Hindwing with a long, lobular tooth on the lower median vein with a minute tooth below it, above it and below it deeply gnawed out, the anal angle itself again produced. Only one species.

- tricuspidata.* **D. tricuspidata** Mab. (173 a) is brown with 2 black transverse bands, on the forewing with a hyaline oblique band and small apical spots. Under surface marbled brown with black, torn macular bands. Ecuador.

3. Genus: **Arteurotia** *Btlr. & Drc.*

Only one conspicuous species owing to the hindwing being considerably prolonged at the anal angle and showing a silky lustrous scent-scale spot in the apical half above. ♂ without the costal fold. The antennal club is strong, bent, the final point shorter than half the length of the club, the short 3rd palpal joint obtuse conic.

A. tractipennis *Btlr.* (= *ribbei* *Stgr.*) (172 g) is above olive-brown, before the apex of the forewing *tractipennis* with a velvety-brown triangular spot, in it one, behind it 2 small hyaline spots, before the somewhat darkened border a lighter antemarginal line, in the basal half at the costal margin and below the cell small dark spots. From Mexico and Panama.

4. Genus: **Sophista** *Plötz.*

Antennal club thinner than in the preceding, the final point very slender. Palpi as in the preceding. Hindwing not so much prolonged, more of the shape of a broad lobe, and without the scent-spot; the lower median vein rises in the middle between the base and cell-end. The costal fold of the ♂ is but slightly developed or absent. Three very similar species.

S. aristoteles *Dbl. & Hew.* (172 g). Black, towards the margin with 2 brownish undulately dentate *aristoteles* lines before the somewhat speckled fringes which are bent inward at the apex of the forewing. The middle of the wings is crossed by a white band very broad particularly on the hindwings and extending on the forewing only to the upper median vein and ending broadly rounded above, whilst on the hindwing it extends broadly to the proximal margin. Rio Negro (Amazon).

S. plinius *Plötz* (172 g) is extremely similar, of a somewhat duller shade, the white band narrower, *plinius* ending upward pointed on the forewing, rounded off on the hindwing, the whole proximal margin being left black. Novo Friburgo, Bolivia.

S. calendris *Hew.* (= *clinias* *Mab.*, *epipola* *Plötz*) (173 a). Here the white band on the hindwing *calendris* has changed into a narrow, bent median line parted by the veins, whilst on the forewing it is entirely absent. The distal part of the hindwing and an indistinct transverse band on the forewing are dusted bluish-grey, on the forewing there are inside and outside of it several small hyaline spots, before the border of the hindwing small black internodal spots. Guiana, Amazon.

5. Genus: **Celaenorrhinus** *Hbn.*

The antennal club is only moderately thickened; the palpi are ascending, the 3rd joint very short. The hindwing is here quite round, the distal margin somewhat undulate; the transverse vein is very feebly developed, the middle radial vein scarcely present, the lower median vein rises much nearer at the cell-end than at the base. The posterior tibiae exhibit 2 pair of spurs, the ♂ has besides a hair-tuft at the proximal end. The species are preferably distributed in the Indo-Australian region, about half a dozen are nearctic.

C. eligius *Cr.* (= *hiera* *Plötz*) (173 a) is above brown, in the apex of the forewing there are *eligius* 3 large hyaline spots, below it 2 small ones, in the disc 2 very large ones, behind them 1, below them 2 small ones, at the costal margin a somewhat larger hyaline spot; before the margin and on the hindwing, also in the disc, several small, lighter spots. The under surface is a little duller, on the hindwing the small light spots are more distinctly prominent. From Mexico and South America, widely distributed. — From the Rio Songo from Bolivia there are specimens before me from FASSL: — **songoensis** *form. nov.* (173 b) — of a smaller and *songoensis* neater habitus; the small subapical spots are reduced to small dots, of which the middle one of the 3 upper ones seems to be placed more proximad, the discal hyaline spots are likewise smaller, the hindwing slightly rounder.

C. fritzgärtneri *Bail.* (= *variatus* *G. & S.*) (173 b) on an average is somewhat larger than *eligius* *fritzgärtneri* with somewhat narrower wings, the hyaline spots smaller, below the middle of the cell another minute, dark-ringed spot. Hindwing in the disc lighter with a larger dark discal spot and a similar macular band behind it. Mexico and Central America. It flies in December, rests on the keystones in dark tunnels and caves, and on being scared up it flies furiously about, though not into the open air.

C. shema *Hew.* (= *ochrogutta* *Mschlr.*) (173 b) is smaller, darker, the hyaline spots smaller, more *shema* uniformly round and more distantly separated. A small discal spot and behind it a curved row of minute round spots on the hindwing are yellowish, beneath still more distinct, and near the base there are 3 more. From Cayenne.

C. monartrus *Plötz* (= *chiriquensis* *Mab.*) (173 b) has still much smaller spots, the hindwing as *monartrus* in *fritzgärtneri*, but darker. Mexico to Panama.

- astrigera*. **C. astrigera** *Bltr.* is not unlike *monartrus*, larger, the hyaline spots increased: in and above the cell there are 3, the antemarginal row contains 9 spots, and below the cell there is one more. Beneath the submarginal row of spots on the hindwing is brick-coloured reddish. Tapajoz.
- cynapes*. **C. cynapes** *Hew.* Above dark brown, hindwing more reddish. Forewing in front before the middle of the costal margin to the proximal angle traversed by an equally broad, lustrous transparent white band parted by the veins, before the apex with 7 minute hyaline spots in a bent row. Hindwing in the middle angularly projecting. Beneath as above, but the brown area is strewn with an ochre-yellowish tint, particularly at the base and proximal margin of the hindwing; behind the band of the forewing there is a yellow spot, at the cell-end of the hindwing a light streak. Expanse of wings: 2.1 inches. Ecuador.
- vidius*. **C. vidius** *Mab.* is like the following placed by MABILLE into his genus *Narga* which, according to GODMAN is synonymous with *Celaenorrhinus*. It is described, as follows: blackish, at the margin somewhat lighter, at the costal margin and in the cell 1 or 2 darker spots. Hindwing in the disk blacker. Under surface black, forewing watered with lilac-grey, two more distinct patches at the costal margin and apex. Hindwing watered with a deep lilac-grey, bordered by a black band from the costal angle to the proximal margin. A spot at the base and a shade at the posterior margin blackish, in an oblique light appearing as 2 greyish-lilac bands, the broad basal band enclosing a square black spot at the costal margin. Expanse of wings: 19 to 21 mm. São Paulo.
- scopas*. **C. scopas** *Mab.* Blackish-brown, fringes more reddish, speckled darker, forewing with 2 dust-grey spots between the lower radial veins. Forewing beneath blackish with a lilac-grey spot at the apex and 4 silvery streaks at the rise of the upper branches. Hindwing whitish-grey, at the base and distal margin reddish-brown, traversed by a rust-brown band of spots very broad at the costal angle. The middle of the distal margin almost white; before the fringes a lustrous yellow line bordered with black. Expanse of wings: 23 mm. Venezuela (Merida).

6. Genus: **Pythonides** *Hbn.*

The moderately strong antennal club is somewhat bent, but not angularly; the short, obtuse palpi turned in front. The forewing is much longer than the distal margin, the costal margin in some species very convex, the distal margin above the proximal angle somewhat concave. Costal fold absent. Neuration as in *Celaenorrhinus*. Many species show a brilliant blue on the hindwings, particularly beneath, exhibiting a bright gleam when the insect is on the wing.

- cerialis*. **P. cerialis** *Cr.* (= *orcus* *F.*, *cerberus* *Hbn.*) (173 c) is above brown, in the somewhat more prominently dark median band of the forewing there are several small hyaline spots, behind it in the shape of a band bluish dusting, on the hindwing also in the disc. Beneath the hindwing is silvery sky-blue with a black marginal band. According to CRAMER, the larva is dark green with a lighter dorsal line and 2 similar lateral lines and a red-brown head. From Mexico widely distributed in South America. — **majorinus** *form. nov.* (173 c) from Bolivia (Songo) is very much larger and more variegated, more profusely strewn with blue.
- contubernalis*. **P. contubernalis** *Mab.* (= *praxis* *Plötz*) (173 c) is somewhat smaller, of a purer black, on the forewing in the disc and subapically with much smaller hyaline dots, on the hindwing with 2 light blue transverse bands. Beneath the hindwing is light blue with a black marginal band partly broken up into small spots, and 2 or 3 costal-marginal stripe-shaped spots. From Mexico to Colombia, Brazil.
- anicius*. **P. anicius** *G. & S.* (173 c) extremely approximates *contubernalis* and differs by almost or entirely extinct hyaline spots on the forewings and more intensely blue bands on the hindwings. The somewhat different genitals prove the insect to be a good species. Founded on two ♂♂ from Guatemala.
- parallelus*. **P. parallelus** *Mab.* looks somewhat like a large *cerialis* (173 c), in the cell-end two oblong, not united spots, 4 small subapical spots two of which are closer together. On the hindwing the distal one of the blue bands is not bent, but almost parallel to the proximal band, at the costal margin almost united. Fringes black. Hindwing beneath as in *cerialis*. Bolivia.
- cordus*. **P. cordus** *Mab.* (173 c) is very closely allied to *contubernalis*; on the forewing there are only 3 subapical dots; the hyaline spot before the cell-end consists of 3 small separate spots situate in one line below each other. The apical dots are surrounded by a band of blue scales continued in front of the border to the proximal margin. On the blue hindwing beneath the black marginal band is broadly interrupted between the lower radial veins; at the costal margin there are yet 2 large black spots, the distal one of which is continued towards the proximal margin as a more or less complete macular band. Brazil (Sa. Catharina).
- hoyti*. **P. hoyti** *Weeks* has remained unknown to me. Body above brown with golden brown hair, beneath lighter; on the brown forewing there is in the disc a 7-shaped hyaline spot with a streak behind it, below it a similar spot and above the apex of the latter a quadrangular spot; 3 small, oblong subapical spots, before and below which there is a brown, dark area; near the base and below the middle of the cell one dark-brown, not distinctly defined band each. Hindwing above with 2 similar dark brown bands. Under surface

with the same marking on the light brown ground with a darkened costal margin and apex. Suapure (Venezuela). Expanse of wings: 1.8 inches.

P. belti *G. & S.* (= *paterculus* *Hew.* nec *H.-Schäff.*) (173 d) is not unlike *paterculus*, distinguished *belti*. by the longer anal angle of the hindwing, the colour above being more grey, and by 3 hyaline spots bordered with black in the disc of the forewing, as well as 3 subapical dots; particularly the hindwings are marked with more distinct black macular lines. Hindwing beneath radiantly blue with a black costal-angular spot. Nicaragua.

P. lugubris *Fldr.* (= *ophia* *Btlr.*, *sephara* *Hew.*, *cobarus* *Mschlr.*, *ambla* *Plötz*) (173 d). Greyish-brown *lugubris*. with a slight olive tint; a narrow, dark brown antemarginal line somewhat widened at the costal margin and proximal angle; in and behind a darker median band there are numerous hyaline spots. Hindwing at the base with a brown transverse band, apex pointedly produced, before it a small, short, brown streak-spot. Beneath very much duller, without any blue. From Mexico to Colombia and Brazil.

P. truncata *Hew.* (173 d) is similar, easily discernible by less strongly angled hindwings being beneath *truncata*. of a greyish-blue colour except the margin. From Bolivia.

P. paterculus *H.-Schäff.* (= *balma* *Plötz*, *zera* *Btlr.*) (173 c) is easily recognizable by the proximal *paterculus*. angle on the forewing being produced almost in a conical shape, whilst the costal margin appears somewhat concave right before the apex. Of a deep red-brown mixed with slate-grey or violettish-grey, before the margin rusty, below the cell-end 1 or 2 small, roundish hyaline spots. Beneath lighter rusty, two inner-marginal thirds of the hindwing light blue. From Panama to South America. — Small specimens from Bolivia, the hindwings of which are beneath quite rusty yellow without any blue, may be denominated: **deflorata** *form. nov.* (173 d). *deflorata*.

P. menedemus *G. & S.* (173 e) is above of a warm brown with a deep velvety-brown oblique band *menede-* to the base of the proximal margin, the distal margin of the forewing is likewise darkened, before the apex *mus*. there is a smaller spot with 2 or 3 minute hyaline spots. Beneath lighter red-brown, two inner-marginal thirds greyish-white. Panama (Chiriqui).

P. hyacinthinus *Mab.* (= *servius* *Plötz*) (173 e) is larger, otherwise above very similar. Hindwing *hyacinthi-* beneath in the inner-marginal half light blue, in the costal-marginal part darker ferruginous. Nicaragua, *mus*. Panama, Colombia, Bolivia, Peru.

P. scybis *G. & S.* (173 e) is still larger, above of a warm violettish-brown, with more rounded hind- *scybis*. wings, the whole basal parts of the fore- and hindwings occupied by a large, deep velvety brown spot pointedly extended distally at the lower cell-angle on the forewing. On the hindwing beneath the blue is of a variable extent. Distributed from Mexico to Bolivia.

P. phila *G. & S.* (173 e) looks above exactly like *scybis*, but beneath it is entirely without the blue *phila*. colour on the hindwing; the colouring beneath is on the whole darker. Described from Panama; it may be only a form of *scybis*.

P. pelopea *G. & S.* (173 e) is likewise very similar. The upper surface is darker with a black marginal *pelopea*. band being inwardly faded; there is only a small subapical hyaline dot. The under surface is still much darker brown. From Mexico to the Amazon District.

P. erisichthon *Plötz* (= *gellius* *Mab.*) (173 e, f) is allied to the two preceding species, the dark *erisichthon*. basal marking, however, is more interrupted than in *menedemus*; on the hindwing there are in a slightly curved row 4 or 5 darker, small punctiform spots in the middle. Beneath light reddish-yellow or ochreous-yellow, the forewing with a similar, dark brown marking as above, the hindwing with 2 rows of dark dots, the proximal row mostly confined to one costal-marginal spot, and with a large costal-angular spot. Ecuador, Bolivia.

P. nolkeni *Mab.* is twice as large as *hyacinthinus*; the forewing with a large, black spot as far *nolkeni* as the cell-end, covering also the base of the forewing; from the 3 apical hyaline dots a black band extends encircling the cell and turning towards a large black spot bordering on a hyaline dot between the lower radial veins. Wings with an intense violet lustre, at the margin more reddish. The under surface is ochreous-yellow with a faint black marking. Hindwing almost quite whitish-blue, only at the costal-angle ochreous-yellow with a black dot in it. Expanse of wings: 43 mm. Bogotá.

P. insulsus *sp. nov.* (173 f) in its exterior entirely resembles an *Achlyodes*, but according to the neu- *insulsus*. ration it certainly belongs hereto. Large, brown with a violet reflection as *scybis*. The forewing only exhibits 3 small apical hyaline spots, the brownish-black velvety spots in the basal area are arranged in the same way as in *scybis*, but they are much duller and more blurred; from the lower cell-angle a similar nebulous stripe extends to the distal quarter of the proximal margin. Hindwing likewise similar, the dull, postmedian macular band more complete. Under surface dull ochreous-brown with the same marking as above, but very indistinct. According to a specimen of the Collection SERTZ from South Brazil.

- ineptus.* **P. ineptus** *sp. nov.* (173 f) is very different. Above dark violettish-brown, from the cell-end a large, darker, almost oval spot extends obliquely before the middle of the proximal margin, and before the margin there is a dark band, leaving the margin itself lighter; in the middle of the costal margin there are 2 oblong hyaline spots below each other; in the middle between them and the apex 3 minute hyaline spots, between the median veins close below the cell-end an oblong, quadrangular spot and above it a punctiform hyaline spot. Hindwing at the base and behind the middle with a broad band, before the margin with a narrow band. Forewing beneath lighter brown, at the base of the costal margin blue, near the proximal angle lighter greyish-white, with the hyaline spots as above. Hindwing radiantly silvery blue with a narrow black marginal band with 3 minute blue lunae in it in a slight expansion between the median veins and lower radial veins. 1 ♂ from Peru in the Coll. SEITZ.
- festivus.* **P. festivus** *Erichs.* (= *portulana* Plötz) (173 f) is a small, black species with some minute hyaline dots on the forewings and 2 sky-blue transverse bands across the hindwings, both of which do not reach to the costal margin. Beneath the hindwing is monotonously black, in the basal half slightly tinged blue. Guiana, Colombia.
- lucullea.* **P. lucullea** *Hew.* (173 f) is above very similar, somewhat strewn with white, the small hyaline spots in the disc more closely together; the blue bands of the hindwings are narrower and extend farther to the proximal margin. Beneath the hindwing is light blue with a narrow black marginal band, in front of it a black macular band, and in the disc 3 or 4 black spots. Brazil (Ega, Santos).
- adamantinus.* **P. adamantinus** *Mab.* (173 f) is larger than *cronion* which it approximates. Black, strewn with blue atoms, 4 small preapical hyaline spots approaching each other in two couples, below them 4 more small, little visible ones in one line towards the proximal margin and a streak-spot at the cell-end; before the fringes there is a narrow line of blue spots. Hindwing black, with a postmedian band composed of blue atoms. Beneath the forewing is similar, the costal margin as far as the cell-end blue. Hindwing blue with a broad black border growing narrower towards the anal angle. Near the costal angle a large, below it a smaller black spot. Bolivia.
- cronion.* **P. cronion** *Fldr.* (173 g) has only one broad sky-blue band on the hindwing, extending to the blue proximal margin. The forewing is brown marbled with black, strewn with white scales and 2 or 3 minute subapical dots. Beneath the proximal margin of the forewing is broadly lactean blue, the hindwing almost quite blue, only at the costal angle black with single small black marginal spots. Brazil.
- assecla.* **P. assecla** *Mab.* (= *cerealis* Plötz, nec *cerialis* Cr.) (173 g) is larger, brownish-black, with well separated, small discal spots and 6 small subapical spots. The hindwing is almost entirely blue, only at the base, costal margin and costal angle black with an indistinct median band; beneath similar, but the hindwing as far as the base blue with a fine black border which is expanded at the costal angle and proximal angle. Brazil.
- lusorius.* **P. lusorius** *Mab.* is black, with 3 small apical spots and 8 in the cell and behind it, outside with a double blue band. The hindwing with a metallic blue marginal band, near the costal angle with a black spot in it. The hindwing being blue beneath exhibits 2 bands of black spots in the disc, which are united at the proximal margin. Expanse of wings: 30 mm. Rio de Janeiro.
- cnidus.* **P. cnidus** *Plötz* (173 g) is very different: above coloured as *cerialis*, olive greyish-brown, in the basal part of the forewing and in the distal half of the hindwing with a light blue reflection, here with a dark brown middle dot and an undulate line behind it. On the forewing there are only outside of the cell 2 discal hyaline spots, before them a large, oval brown spot, behind it an undulate brown line behind which there are 4 minute subapical hyaline spots. South America (?).
- u-lucida.* **P. u-lucida** *Plötz* (173 g) is a species having remained unknown to me, presumably approximating *lugubris*. Above light brown, with antemarginal and median dark brown bands; in the median band there is a U-shaped hyaline spot distally opened, and above and below it with 2 more small hyaline spots each. Hindwing beneath in the anal half white, towards the base bluish-grey, the costal margin brown with the beginnings of 3 transverse bands. Paraguay.

7. Genus: **Ate** *G. & S.*

Almost the same as the preceding genus, but the posterior tibiae only exhibit 1 pair of spurs; on the hindwing the upper median vein rises somewhat nearer at the cell-angle.

- lagia.* **A. lagia** *Hew.* (173 g) is very closely allied to the following, but it has 2 or 3 more discal spots and on the hindwing beneath the blue is more uniform and extensive, the black marking reduced. Presumably only a southern form from Guiana and Brazil.

A. proxenus *G. & S.* (173 g) is above blackish-brown, behind the middle on the forewing scantily *proxenus*. dusted blue with 2 minute hyaline spots below the lower cell-angle and 2 or 3 minute subapical dots. Hindwing with a broad cyaneous marginal band. Beneath the hindwing is light blue with a brown costal margin and undulate antimarginal line, as well as 2 or 3 shortened macular bands proceeding from the costal margin. From Mexico through Central America.

A. pteras *G. & S.* (173 h) has no hyaline spots at all on the forewing, but instead of them some *pteras*. small postmedian dust-spots formed of blue scales. On the hindwing the blue marginal band is narrower and more tarnished and of a duller blue. Beneath the hindwing is almost quite blue, only at the costal margin and costal angle blackish-brown. Described according to 2 ♂♂ from Panama.

A. jovianus *Cr.* (173 h) is a large, magnificent species, black with 4 small subapical spots situate in *jovianus*. a straight line, two large discal hyaline spots, the lower being tripartite, and a blue submarginal macular band. Hindwing of a brilliant azure colour with a black costal margin and border, radiating proximally on the veins. Beneath very similar. Guatemala, Guiana to Brazil.

A. amaryllis *Stgr.* (173 h) differs by the much larger oval discal spot and enlarged subapical spots of *amaryllis*. the forewings. Guatemala, Panama, Colombia, Brazil.

A. fabricii *Ky.* (= *jovianus* *F.* nec *Cr.*) (173 h) differs by a large, white discal spot in the blue of *fabricii*. the hindwing and larger discal spots of the forewing. Colombia, Brazil, Bolivia.

A. suppar *sp. nov.* (173 h) entirely resembles *jovianus* above; the discal hyaline spots of the forewing *suppar*. are somewhat more oblique, on the hindwing the black marginal band is broader and proximally not faded as in *jovianus*, but sharply defined. As in *fabricii* there is in the blue disc a white spot divided into five parts by the black veins. Eastern Colombia (Medina) in the Coll. FASSL.

A. lancea *Hew.* (= *tertullianus* *F.*) (173 h) resembles the preceding, but the subapical spots are *lancea*. absent; the discal spot is much larger, and on the hindwing in the cell and behind it there is a white diaphanous longitudinal spot growing more roundish in the ♂. Hindhead and palpi orange-yellow. Brazil: Minas-Geraes, Sao Paulo, common near Santos.

A. lerina *Hew.* (173 i) has a large, quadripartite discal spot on the forewing, in the middle of the *lerina*. hindwing a round blue spot not sharply defined. Beneath the hindwing is blue with a black border, proximal margin and veins. Guiana, Brazil.

A. aequatoria *Mab.* is still larger than *jovianus*, jet-black, with three subapical dots situate in *aequatoria*. a triangle, below them two more and still farther down three larger ones; in the cell and at the costal margin there are 2 longish hyaline spots, below them two more. The hindwing exhibits 2 narrow blue bands connected at the costal margin, separated in the disc. Beneath the proximal margin of the forewing is broad whitish, the hindwing quite blue, except a black spot at the costal angle. From Ecuador.

8. Genus: **Paches** *G. & S.*

It is likewise very closely allied to the two preceding genera, the antennal club is somewhat longer, the 3rd palpal joint longer. The posterior tibiae exhibit beside 2 pair of spurs in the ♂ a long hair-pencil. Half a dozen of sexually dimorphous species with mostly blue ♂♂.

P. loxus *Dbl. & Hew.* (173 i) is in the ♂ above of a lustrous deep ultramarine, with a black border *loxus*. and spot at the cell-end and costal margin. Beneath black with 3 indistinct darker transverse bands. The ♀ is blackish-brown, with 3 small subapical dots and a slate-blue band of scales in the middle. Mexico to Panama.

P. gladius *Btlr.* (173 i). Instead of the black costal marginal spot there is here a median band more *gladius*. or less distinctly noticeable also on the hindwing. Brazil. Probably only the southern form of *loxus*.

P. polla *Mab.* (173 i) has almost black forewings with 2 or 3 small subapical hyaline spots, near *polla*. the proximal angle with some blue scales. The hindwings are lustrous blue, with an indistinct, lighter greyish-blue median band and mostly another one behind it. Beneath scantily strewn with a light tint. Mexico to Costa Rica.

P. narycus *Mab.* (173 i) is above in the disc of the hindwing deep blue. Forewing almost black *narycus*. with a row of whitish-blue spots which is interrupted below the apex, behind it a grey band with a dull silvery lustre, passing over to the hindwing and often indistinct towards the margin; in the cell of the forewing there is a longitudinal row of some dots. Beneath quite blackish-brown. Described from Ecuador, before me also from Peru (Pozuzo, Huancabamba).

subalbatus. **P. subalbatus** Plötz (= subornatus Mab., zonula Mab.) (174 a). Hitherto only the ♀ seems to be known; above blackish-brown with a median band formed of blue scattered scales on both wings and 3 small, white subapical dots on the forewing. Beneath the anal half of the hindwing is white with a blackish antemarginal line; the bordering towards the base is brightened up in a bluish grey and tinged brownish-red. Panama, Venezuela, Colombia, Brazil.

geometrinus. **P. geometrinus** Fldr. (= hadina Btlr., corbinianus Plötz) (174 a) has brown wings being lighter towards the margin, traversed by 2 darker transverse bands bordered by a lighter colour and parallel to the distal margin. Beneath lighter, on the forewing strewn with a reddish yellow and with a reddish-yellow discal macula, the hindwing scantily strewn with whitish, and with 2 whitish transverse lines. Panama to Southern Brazil.

phalaena. **P. phalaena** Mab. (*Stgr.* i. 1.) is apparently very closely allied to *geometrinus*. Yellowish brown with black transverse bands across both wings; the base brownish, behind it a black, distally bent band across the cell-end; on the hindwing the band is narrower; a proximally curved postmedian band terminates on the fore- and hindwing at the proximal margin with a thick black spot; at the margin another broad band. The under surface is greyish-brown with an ochreous spot in the middle, before it a grey band spotted white at the proximal margin, behind it a grey band being ochreous-yellow below the cell and terminating in a grey spot bordered with yellow. Hindwing bluish greyish-white, at the base brown with a grey median band and a blackish grey border. Bolivia.

limaea. **P. limaea** Hew. (= jabesa Btlr., caeruleus Plötz) (174 a). Forewing similar as in *subalbatus*, but the hindwing with a broad blue marginal band. Beneath the hindwing is extensively blue with a more or less spotted blackish-brown costal margin, often there is only one spot at the costal angle. Brazil (Amazon).

9. Genus: **Spioniades** Hbn.

Antennal club moderately thick with a short, bent apex; the 3rd joint of the porrect palpi is hidden. The apex of the forewing somewhat stunted. The costal fold is absent. Hindwing prolonged. The posterior tibiae with 2 pair of spurs and a hair-pencil.

artemides. **Sp. artemides** Cr. (174 a). Forewing blackish-brown with white scales strewn in the shape of a band, several minute discal and subapical hyaline dots. Hindwing in the anal half white, in the ♂ tinted somewhat brownish with a more or less distinct marginal band before the fringes. From Panama through Guiana to Southern Brazil.

abbreviatus. **Sp. abbreviatus** Mab. (174 a) is somewhat larger, the forewing shorter and broader with larger hyaline spots, the hindwing not so much prolonged, the white anal part of the hindwing reduced, the marginal band divided into spots, the lowest more distantly remote from the proximal angle than in the preceding. Nicaragua, Costa Rica, Panama, Colombia to Bolivia.

10. Genus: **Nerula** Mab.

In the characters it entirely corresponds to the genus *Cogia* of the preceding group, but the cell of the forewing is shorter than $\frac{2}{3}$ of the length of the costal margin. Only one species:

fibrena. **N. fibrena** Hew. (= nautes Mab.) (177 e) is above dark brown, the forewing with 11 hyaline dots: one at the costal margin, 2 in the cell, and one below it of the shape of the number 2; farther towards the margin 3 and an isolated one above it and 3 subapical ones. The hindwing exhibits at the base a tuft of yellowish-red hair, the anal angle is broadly white, parted by a brown band. Beneath the same, only of a paler tint; hindwing entirely white, costal margin, 2 spots below it near the base, an irregular transverse band and a spot at the anal angle yellowish reddish-brown. Expanse of wings: $1\frac{4}{10}$ inches. Amazon (Tonantins).

11. Genus: **Eracon** G. & S.

In its anatomical marks it is very closely allied to the genus *Pellicia*, but the posterior tibiae in the ♂ exhibit a long hair-pencil, and the prolonged hindwing shows above at the base of the costal margin a hair-tuft. The forewing exhibits a black spot in the cell as in *Cyclosaemia*.

biternata. **E. biternata** Mab. is dark brown with 3 darker transverse bands, in the disc of the forewing with a large black spot with two white hyaline dots in it and one above it; 3 minute, subapical, white hyaline spots in a triangle. Beneath lighter and more reddish brown. The body beneath is whitish. Panama (Chiriqui).

E. bufonia *Mschlr.* (174 b) has almost the wing-contours of *Arteurotia tractipennis* (172 h); above *bufonia*. brown, in the larger basal half dusted violettish-grey with a large, black, quadrangular discal spot, from where an extinct band extends to the proximal margin, with a second transverse, postmedian band. Hindwing similarly marked. Under surface lighter brown, at the proximal angle of the forewing and in the middle of the hindwing with quadrangular, large, yellow spots, behind them with an irregular row of smaller spots and similar ones at the costal margin, proximal margin and anal angle. Colombia.

E. inops *Mab.* is above reddish-brown with 4 bands of black spots; beneath more reddish-grey, *inops*. the lines extinct. Patria unknown.

12. Genus: **Gorgopas** *G. & S.*

From the closely allied following genus *Pellicia* separated by the presence of a costal fold and the absence of the hair-pencil on the posterior tibiae.

G. viridiceps *Btlr.* (174 b) is deep dark brown, before the distal margin lighter in the shape of *viridiceps*. spots, with 3 small, white, subapical spots. Head, collar, anterior half of the shoulder-covers and palpi above metallic green. From Nicaragua to Peru and Brazil.

G. hybridus *Mab.* looks like a *Cyclosaemia* (p. 894) with a green head: light brown, forewing with *hybridus*. a blackish marginal band, separated from the margin by a row of small lighter spots, in front of it a dark band with 3 subapical hyaline dots; in the cell there is a black spot with 2 white dots in it, the head and thorax metallic green. Expanse of wings: 28 mm. Brazil.

G. chlorocephala *Latr.* (174 b) is of a lighter ground-colour than *viridiceps*, and metallic green scales *chlorocephala*. are also at the bases of the wings. Guiana.

13. Genus: **Pellicia** *H.-Schäff.*

One of the most difficult groups to describe. GODMAN says that the attempt of ascertaining the species according to descriptions is hopeless. More than 2 dozens of almost uni-coloured blackish-brown species have been described. The forewing is rather pointed, the distal margin convex, no costal fold. The hindwing is analwards somewhat prolonged. The posterior tibiae are provided with hairy fringes and 2 pair of spurs, without a hair-pencil. The ♂♂ besides exhibit a long hair-tuft at the base of the costal margin on the hindwing; the subcostal vein mostly shows a slight swelling.

P. ephora *H.-Schäff.* (= *tiphys* *G. & S.*) (174 b) is one of the most common Hesperids in the whole *ephora*. of Central and South America. Deep dark brown with 3 still darker, faded transverse bands and 3 white subapical dots situate in a triangle, the marginal band being separated from the median bands. The under surface is coloured lighter, the ♀ also above. Widely distributed from Mexico to Colombia and Guiana.

P. bessus *Mschlr.* (= *sordidulus* *Mab.*) (174 b) is extremely similar, darker, the hindwings much rounder; *bessus*. with differently shaped genitals. Surinam.

P. macareus *H.-Schäff.* (174 b, c) is likewise scarcely distinguishable from *ephora* in its exterior, but *macareus*. the shape of the wings is much rounder, particularly of the hindwings, and the hair-pencil at the costal margin of the hindwing is considerably shorter. It occurs from Mexico through the whole of Central America to the Amazon.

P. criton *Mab.* is very closely allied to *ephora* (174 b), but smaller and discernible by the under surface. *criton*. The 3 white subapical dots are situate more in a line; the black anteterminal band is indistinctly spot-shaped. Beneath on the forewing the costal margin and apex are grey, the hindwing pinkish-grey, only at the base and costal margin blackish; before the fringes extends a narrow, interrupted band, through the middle a broader one. Bolivia.

P. bipuncta *Schs.* (174 c) is distinguished from *ephora* (174 b) by only 2 small subapical hyaline *bipuncta*. dots and less undulate transverse bands which are more broadly fused with each other. Expanse of wings: 29 mm. Brazil (Novo Friburgo).

P. nycineme *Btlr.* above entirely resembles *macareus* (174 b, c); it is discernible by the hindwing *nycineme*. beneath, where the spots of the median band are tinted light towards the base. From Nicaragua to Colombia and the Amazon.

P. bromias *G. & S.* (174 c) is a somewhat smaller species with rather distinctly prominent bands; *bromias*. the most characteristic mark is the fusion of the submarginal and median bands below the cell, so that a Y-shaped, dark marking is created. Common in Mexico and southward to Panama.

- costimacula*. **P. costimacula** H.-Schüff. (174c) is more easily recognizable by the wings exhibiting violettish-grey costal and basal halves; in this ground the beginnings of the 3 dark brown bands are distinctly prominent, the two interior ones almost exactly rectangular to the costal margin, the distal one more oblique towards the margin. This species and the following are without the small subapical spots. From Mexico down to Peru and Brazil, common.
- violacea*. **P. violacea** Mab. Forewing brown, glazed in a violettish blue, thereon three brown or ferruginous bands, the middle band only forming a spot at the cell-end. Hindwing rusty black with 2 scarcely noticeable violet bands, at the costal margin lighter ferruginous. Beneath the forewing is rusty-black with 2 scarcely visible violet bands, at the costal margin lighter ferruginous. Beneath the forewing is rusty black, at the costal margin and apex dusted ash-blue like the proximal margin. Hindwing in the basal half rusty black, outside light ash-blue, in it 2 faint, brown bands. Expanse of wings: 29 mm. Patria unknown.
- dimidiata*. **P. dimidiata** H.-Schüff. (= *didia* Mschlr., *corinna* Plötz, *nivonicus* Plötz, *bilinea* Mab.) (174c) is marked the same as *costimacula*, but somewhat smaller, with broader, rounder wings and entirely without the purple-grey suffusion of the costal parts of the wings. The anal part of the hindwing is prolonged, but more in the shape of a broadly rounded lobe. Likewise most common beginning from Mexico, but the species seems not to go so far to the south, reaching its southern extremity at Guiana.
- meno*. **P. meno** Mab. (174c) has a somewhat longer anal part of the hindwing than the preceding; this part being beneath whitish with a large, dark brown spot in it; in the disc there are besides 2 whitish spots, and the proximal margin of the forewing is light, too. The costal-marginal part of the forewing is above suffused with lilac-grey as in *costimacula*. This little species has apparently been hitherto only found in Panama.
- vecina*. **P. vecina** Schs. (174d) very much resembles *costimacula* (174c) above, but the hindwing beneath is very different. Forewing dark greyish-brown with the darker brown bands as there. The hindwing is lighter at the costal and proximal margins. Beneath the forewing is dark brown, the proximal margin very light. The hindwing is dark brown in the costal half, in the anal half whitish grey; in the middle, behind it and before the margin traces of darker lines. Expanse of wings: 32 mm. Petropolis.
- pericles*. **P. pericles** Mab. (*Stgr.* i. l.) (174d) is likewise not dissimilar; above deep velvety-black before the margin, with a lighter reflecting violet macular band, which grows broader and still lighter towards the apex; the beginnings of 2 similarly coloured bands commence at the costal margin before the cell-end and before the middle of the cell and extend almost to the median. Hindwing similar; beneath almost uni-coloured blackish-brown, the proximal margin of the forewing lighter reddish. Bolivia.
- licisca*. **P. licisca** Plötz (= *thystes* G. & S.) (174d) is recognizable by the entirely rounded hindwing without an extended anal part. The colour of the wings is very dark, so that the bands are scarcely prominent, only on the lighter under surface and in the ♀ they are more distinct. Found from Mexico to Panama.
- capitans*. **P. capitans** Schs. externally resembles *G. viridiceps* (174b) by its brilliant metallic-green head and collar. The wings are dark velvety-brown in the basal halves, distally somewhat lighter with a darker shade at the distal margin. The forewing shows 3 subapical hyaline dots in a darker oblique shade, the hindwing a narrow, antemarginal nebulous band. Beneath lighter brown with traces of darker lines. Expanse of wings: 27 mm. Venezuela (Aroa).
- polyctor*. **P. polyctor** Prittw. (= *ithrana* Btlr.) (174d) is quite differently coloured and marked: white with a dark brown basal and distal third, in the latter 3 subapical hyaline spots, farther below 2 larger, square hyaline spots scarcely noticeable in the white ground; in the discal area besides some brownish dentate lines; hindwing in the costal part almost entirely white. Very common from Mexico to Colombia and Southern Brazil.
- castolus*. **P. castolus** Hew. (174e) by its under surface is most closely allied to *vecina* (174d), but above it is almost uni-coloured blackish-brown, on both wings quite indistinctly spotted grey; the forewing shows 3 subapical hyaline dots, situate in a grey spot beneath. The anal half of the hindwing is whitish-grey, undulated blackish-brown. Described from Brazil.
- zamia*. **P. zamia** Plötz (174d). Above monotonously blackish-brown, beneath the forewing is lighter in the proximal-marginal area; the hindwing is tinted ferruginous and the anal half powdered greyish-white, the margin itself, however, remaining dark and 2 dark stripes in the disc penetrating the lighter area. South America.
- theon*. **P. theon** Plötz (174d) entirely resembles *zamia*, but it is larger and the upper surface is not so deep blackish-brown, so that a curved stripe before the marginal area on all the wings, a nebulous spot at the cell-end and another nebulous stripe at the end of the basal third are distinctly standing out. Beneath the anal parts of all the wings are lighter, of a dim whitish, and in this light part the nebulous stripes of the uppersurface show through as a chain of dark spots. From South America (the exact patria is not stated in PLÖTZ' table).
- demetrius*. **P. demetrius** (174c) is above uni-coloured dark brown with 2 dark ante- and postmedian transverse lines on the forewing. Beneath the apical part of the forewing and the greater part of the disc of the hindwing is suffused with a bluish grey, the powdered patches being traversed by dark brown lines of the ground-colour. Brazil.

P. albangula H.-Schöff. (174 e) is a charming, tiny insect, in which the apex of the forewing is *albangula*, ensiformly extended and the margin of the hindwing projects in the middle like a tooth. Above purple-brown with deep dark transverse bands and ferruginous spots in a row before the margin of the forewing and in a treble row above the anal marginal part. Forewing with the 3 subapical, most minute spots and a fourth in the cell-end area. Beneath in the costal and basal parts ferruginous, dusted over and speckled with black; at the anal angle on all the wings lighter yellowish-white with ferruginous markings. It is reported to originate from Rio de Janeiro.

P. meris Plötz (174 e) differs only little from the preceding, above black with 2 deeper black transverse *meris*, bands and 3 small white subapical dots. Beneath somewhat duller, tinted more olive. Hindwing extended rather long. Colombia.

14. Genus: **Pyrdalus** Mab.

Distinguished from *Pellicia* by the longer, rectangularly bent antennal club, the presence of a costal fold in the ♂, and a longer 3rd palpal joint. Here the hindwing also shows a hair-pencil at the base of the costal margin and the fringed posterior tibiae show 2 pair of spurs. Only one species:

P. corbulo Cr. (174 e) looks like a large *Pellicia*, deep blackish-brown with faded black transverse *corbulo*, bands and 3 minute subapical spots. In the ♂ the costal margin of the hindwing is of a light reddish-brown, from which the dark pencil stands out distinctly. Beneath lighter, otherwise marked the same, at the proximal margin of the hindwing and on the ventrum bluish-grey. From Surinam.

15. Genus: **Mycteris** Mab.

Likewise extremely approaching *Pellicia* and, as there, with the hair-pencil of the hindwing and the swelling of the subcostal veins. The palpi are much longer, rostriform, and have a rather pointed, straightly porrect terminal joint. On the hindwing the subcostal vein rises much nearer at the base. No costal fold. 4 species are known:

M. caerulea Mab. (174 f). Above almost uni-coloured brownish-black, particularly in the ♀ with *caerulea*, traces of darker bands, at the costal margin of the hindwing somewhat lighter. Beneath lighter, the proximal margin of the forewing lilac-grey, the proximal half of the hindwing light greyish-blue, in the ♀ darker. Guatemala to Colombia.

M. tyana Plötz (174 f) is similar, somewhat smaller and with a lighter, violettish- or purple-grey *tyana*, costal-marginal area of the forewing, in which the beginnings of darker bands are to be noticed in a similar way as in *Pellicia costimacula* (174 e). Beneath the proximal half of the hindwing is violettish-grey or bluish-grey, both wings show traces of dark, brown bands. Brazil (Sao Paulo).

M. cambyses Hew. (174 f) is allied to *caerulea*. Upper surface deep blackish-brown, both wings *cambyses*, with a submarginal row of grey spots, towards the apex larger, dying away analwards; the forewing exhibits an indistinct, short grey band from the middle of the costal margin, the hindwing a similar one in the middle. Beneath dark brown, the apex paler, the proximal margin grey; hindwing reddish-brown, the costal margin and 2 indistinct transverse bands darker brown. Bolivia.

M. crispus Plötz (174 f) is above deep purple-brown with a violet shine, with a darkened margin *crispus*, and 3 scarcely visible darker transverse bands similar to the *Pellicia*-species; between the distal band and the margin the ground-colour appears lighter. The under surface is also very dark, without any marking, the inner-marginal area of the forewing brownish, the proximal half of the hindwing lighter, more violettish-grey, with slightly darker veins. Venezuela.

16. Genus: **Nisoniades** Hbn.

Antennal club moderately thick, the pointed end uniformly bent; the 3rd palpal joint shortly porrect. Costal fold absent; shape of wings rather narrow, the cell of the forewing narrow, too. Veins scarcely deviating from *Pellicia*; hindwing rounded off. Posterior tibiae fringed with 2 pair of spurs.

N. bromius Stoll (= *fissimacula* Mab.) (174 f). Above dark brown, at the cell-end with a thick, *bromius*, black spot with two white pupils; before the apex there are 3 small subapical dots, 2 more between the median and lower radial veins. Beneath much lighter olive-brown, at the anal part of the hindwing more bluish-grey with the spots as above. From Surinam. — The larva, according to STOLL, living on *Solanum spinosum*, is green with a black head and an interrupted black dorsal line and changes into a brownish pupa on the upper surface of the leaf being somewhat drawn together by few threads.

N. pelarge G. & S. (174 f, g) is perhaps of the same species, above with somewhat more distinct *pelarge*, bands; beneath the hindwing is much more extensively blue or lilac-grey, towards the costal margin with 3 darker bands. Nicaragua.

17. Genus: **Cyclosaemia** Mab.

Scarcely to be separated from *Nisoniades*. The forewing is comparatively a little broader, the hindwing still rounder, the terminal joint of the palpi longer. Quite a number of mostly rather similar forms.

- herennius*. **C. herennius** Cr. (174 g). Above deep blackish-brown, in the basal half almost black, at the cell-end with a large, black spot twice pupilled white, and behind it besides 2 black bands. Hindwing the same, though without the cell-spot. Beneath the forewing is lighter brown, at the proximal margin light brownish; the hindwing is bluish-grey with 3 black transverse bands, the proximal one of which bifurcates in the shape of a Y near the costal margin. South America.
- caecus*. **C. caecus** Plötz (174 g) is somewhat similar, discernible particularly by the non-pupilled discal spot on the forewing. The colour is a lighter, duller brown, the bands are narrower. Beneath the hindwing is lighter lilac-grey, the bands pale brownish, the proximal one not forked. Patria unknown.
- morvus*. **C. morvus** Plötz (174 g) is very much larger, it has only a singly pupilled cell-spot, only one curved band behind it, in which there are 3 white subapical dots below the costal margin; hindwing at the distal margin somewhat lighter with small darker spots in the spaces between the veins. Beneath the proximal third of the hindwing is bluish, at the proximal margin almost entirely white. Brazil.
- monophthalma*. **C. monophthalma** Plötz (= *trigonilla* Schs.) (174 g) is smaller, above similar to *morvus*, but much lighter brown; the singly pupilled cell-spot is situate in a yellowish ring; the subapical spots are absent. Beneath the hindwing is monotonously light brown with 2 fine brown transverse bands, and in front of a marginal line with a row of dark triangular spots. Brazil.
- phidyle*. **C. phidyle** G. & S. (174 g) like *caecus*, has a non-pupilled black cell-spot, but it is much larger; the brown wings are lighter in the disc, 3 subapical dots in one line are encircled by black. The species is easily recognized by the light reddish-yellow apical half of the forewing beneath, in which the cell-spot is entirely absent. It seems hitherto only to be known from Panama.
- myris*. **C. myris** Mab. is just as large as *phidyle*; the apex of the forewing is prolonged. Above reddish-brown, without apical dots, with an indistinct blackish postdiscal band, which is angled on the upper radial vein and runs obliquely to the proximal margin; in the large black cell-spot there is a white dot, from where a brown shade extends to the proximal margin. The hindwing shows traces of 2 darker postmedian nebulous bands. Beneath monotonously yellowish-brown, the cell-spot indicated by reddish-brown, the bands are more distinct than above. It is perhaps no *Cyclosaemia*. Described according to 1 ♀ from Sa. Catharina.
- anastomosis*. **C. anastomosis** Mab. (174 h) is a more common species, above brown with 2 darker transverse bands and the cell-spot encircled by yellowish, with 2 white dots there in. Beneath lighter, the bands narrower, on the hindwing spot-shaped; the proximal margin of the hindwing is bluish-grey. Widely distributed from Mexico to Brazil.
- binoculus*. **C. binoculus** Mschlr. (= *earina* Hew.) (174 h) differs by more spot-shaped transverse bands, the proximal one being only indicated on the forewing, the margin darkened. Beneath the bluish-grey colour is absent at the proximal margin of the hindwing, instead of which there is a large black spot at the anal angle. Pará.
- gratiosa*. **C. gratiosa** Mab. resembles *binoculus*. Forewing above yellowish brown with a broad, brown marginal band and a curved postdiscal band; the cell-spot as in the two preceding encircled by yellow with 2 white dots, the basal area darker brown. Hindwing with 3 bent bands. Beneath light brown, the bands more distinct, the forewing at the proximal margin light ash-grey. Hindwing at the costal and distal margins light grey, from the middle to the proximal angle bluish-white; the bands on the brown ground distinctly defined, on the white ground dying away except the marginal band remaining dark. Panama (Chiriquí).
- jacobus*. **C. jacobus** Plötz (174 h) differs by the cell-spot above exhibiting 3 white dots and by 3 subapical hyaline dots. Beneath the hindwing is quite light blue with an irregular black border. From Rio.
- paullinus*. **C. paullinus** Cr. (174 h) is above quite similar to *gratiosa*, but it has a white subapical dot; beneath the whitish parts are coloured ochreous reddish-yellow. Guiana.
- metallica*. **C. metallica** Mab. is easily recognized by the metallic green head and thorax; above coppery brown, the forewing with 3 white subapical dots encircled by black; an antemarginal, a postdiscal and a discal brown band, the two distal ones spotted, the proximal one extending to the proximal margin as the continuation of the large, black, twice white-pupilled cell-spot. The hindwing shows 3 bands of brown spots. The under surface is light grey, almost white, the bands pale dirty brown. Guiana, Brazil.
- diophthalma*. **C. diophthalma** Plötz (174 h) in its colour and marking resembles rather much *monophthalma*, but the cell-spot itself is divided into 2 separate spots beneath each other, and the anteterminal macular band

bifurcates towards the costal margin like a Y, the hindwing shows at the cell-end a third transverse band reaching neither the costal margin nor the proximal margin. Beneath the hindwing is extensively whitish, towards the base and at the proximal margin dusted with blue with a dark brown marginal macular band. Patria unknown.

C. elelea Hew. is most closely allied to *jacobus* (174 h), distinguished by 2 postdiscal transverse bands, *elelea*, a third, shortened band extends from the oval, twice white-pupilled discal spot to the proximal margin; inwardly the discal spot is bordered lighter. Beneath the brown forewing is lighter at the proximal margin, at the base blue; the hindwing is entirely sky-blue, only at the apex there is a black spot and the fringes are dark brown. Expanse of wings: $1\frac{1}{2}$ inches. Cayenne.

C. lathaea Hew. (174 i) stands between *herennius* and *jacobus* (174 h). Above reddish-brown, marked *lathaea*, as *herennius*. Beneath the forewing is also a little tinted blue at the base; the hindwing is pale blue only as far as the distal transverse band; in the place of the proximal transverse band there is a row of grey spots. Described from Bolivia.

C. falisca Hew. is most closely allied to *paullinus* (174 h), distinguished by 3 small subapical dots *falisca*, and a fourth farther below; an anteterminal, dark macular band is situate between the postdiscal band and marginal band. Beneath the forewing shows an ochreous-yellow spot near the apex. Hindwing yellow with some costal-marginal spots, a brown, indistinct, postdiscal transverse band and a brown margin, in front of which is a row of indistinct spots, and at the anal angle a black spot. Cayenne.

C. parus Mab. is very closely allied to *falisca*, distinguished by the absence of all the transverse bands, *parus*, only the margin is darkened by a violet lustre, with a white subapical dot. The black discal spot shows only one white pupil. Hindwing with a broader dark margin. Beneath the forewing is dull black, at the proximal angle with 2 yellow spots. Hindwing blackish with 3 yellow bands: a narrow one at the margin, before it a broader one proximally dentate, and the discal band extending from the proximal margin only to the middle. From Porto Cabello.

C. albata Mab. (174 i) deviates very much from the other species by the wings showing an almost *albata*, white discal area. The basal and marginal areas are yellowish-brown, the latter towards the distal margin darkened; at the cell-end there are, as in *diophthalma*, 2 separate, white-pupilled spots. The hindwing shows at the margin 3 black transverse bands. Colombia, Bolivia, Peru.

18. Genus: **Anastrus** Hbn.

The antennae have a long, slender, gradually thickened club terminating equably bent into the thin point. The short, obtuse terminal joint of the palpi is perfect. Forewing with a costal fold, the apex somewhat produced, the distal margin convex; the cell long and narrow. The anal angle of the hindwing somewhat produced. Posterior tibiae with 2 pair of spurs and a long hair-tuft at the proximal end. The genus is very closely allied to the following genus and so far contains 6 species.

A. obscurus Hbn. (174 i) is above deep blackish-brown, at the costal margin, the distal margin of *obscurus*, both wings and a discal band of the hindwing with a violet reflection; the ♀ is lighter brown with faintly visible darker bands and a discal spot of the forewing. Under surface much lighter and more reddish brown, with 2 narrow transverse bands removed rather far towards the margin. Widely distributed in South America.

A. neaeris Mschlr. (= *obscurus* Btlr. nec Hbn.) (174 i) is above very similar, the costal margin not *neaeris*, so extensively reflecting violet, this colour being more confined to a subapical costal-marginal spot; easily discernible by the whitish greyish-blue anal part of the hindwing beneath. Widely distributed from Mexico to Colombia, Venezuela.

A. petius Mschlr. (174 i) is likewise similar, above deep purple-black, the forewing exhibits towards *petius*, the proximal angle near the margin, the hindwing along the whole distal margin bluish-grey dusting; here also a spot in the disc is coloured the same. Beneath almost uni-coloured reddish-brown. From Surinam.

A. austera Prittw. One ♀ without the patria being stated, but described by v. PRITTWITZ with a *austera*, great number of Brazilian lepidoptera from Rio de Janeiro, according to the denomination by HERRICH-SCHAEFFER, has the size and shape of *Eantis thraso* (176 b), but above the colour turns more bluish. The apex of the forewing is obtuse; the wings above without lighter spots. At the costal margin, in front of the distal margin and at the proximal margin dispersed, light bluish-grey atoms; the distal margins of both wings are without this dusting. Under surface dark cinnamon-brown. Forewing scantily, hindwing almost entirely covered with small light blue scales, nearly of the colouring of *Lycæna corydon*. Head, abdomen and antennae dark brown; beneath the whole insect is silvery grey.

A. subchalybeus Mab. is above violescent black with a bluish-violet reflection; the forewing shows *subchalybeus*, 2 broad black bands growing broader and anastomosing in the disc, and a third at the base, besides a black

marginal band which is broader on the hindwing; the discal band is angled on the hindwing. The under surface is lighter, more brownish, with the same, though fainter markings. Expanse of wings: 37 mm. Manaos.

obliqua. **A. obliqua** Plötz (174 i) is very different: above purple blackish-brown, with 3 broad, oblique transverse bands, the middle one of which extends on the forewing from the middle of the costal margin to the proximal angle, the short distal one from the distal fourth of the costal margin to the upper third of the distal margin, which is darkened. Beneath uni-coloured light reddish-brown. Brazil, Colombia.

19. Genus: **Gorgophone** *G. n. S.*

Different by the absence of the costal fold and of the hair-pencil on the posterior tibiae. Only 1 species:

meliboea. **G. meliboea** *G. & S.* (175 a) resembles rather much *Anastr. neaeris* (174 c), but it is larger, deep purple-black, with lighter lustrous violet antemarginal bands, beneath the same as *neaeris*. Described from Panama.

patens. **G. patens** Plötz (175 a) may belong hereto. Above as *Echel. varius*, but only with one distinct discal band; hindwing at the proximal margin narrowly ochreous-yellow. Beneath reddish-brown, in the disc particularly of the hindwing lighter, tinged violet, the hindwing with a broad, reddish-brown, postdiscal transverse band. Described from Rio.

20. Genus: **Echelatus** *G. n. S.*

Likewise very closely allied to *Anastrus*; distinguished by the absence of the pencil at the posterior tibiae, whereas the costal fold is mostly very well developed. The forewing is generally somewhat longer, narrower, with a less truncate apex, the hindwing comparatively smaller.

varius. **E. varius** *Mab.* (175 a, b) is a common species, distributed from Mexico through the whole of Central America to Colombia and Venezuela. Above dark brown, towards the margin darker with 2 broad, faded, darker transverse bands. Beneath lighter, reddish-brown, on the hindwing in the anal part light bluish-grey, with 3 darker transverse bands. Costal fold well developed.

eugramma. **E. eugramma** *Mab.* differs from *varius* by 3 small subapical dots and 2 more below them, all being encircled by black; the transverse bands are black and distinct. The hindwing is in the anal half of a bright blue, otherwise ferruginous with 3 dark transverse bands therein. From Panama (Chiriqui).

robigus. **E. robigus** Plötz (= *luctuosus* *G. & S.*) (175 a) is above the same as *varius*, beneath on the hindwing the anal half is not bluish-white, but of the same colour with the rest of the wing. If the genitals were not constantly different from *varius*, we might think it to be a local form, since the species is known from Western Mexico, where *varius* is absent, besides from Southern Brazil and Colombia.

sempiternus. **E. sempiternus** *Btlr. & Drc.* (175 a) has above a somewhat lighter ground-colour with more distinct transverse bands and a large, black, quadrangular cell-macula; the hindwings are also distinctly marked. Beneath scarcely different from *varius*. Separated by the costal fold being almost absent in the ♂. Common and widely distributed from Mexico to the Amazon.

polyaenus. **E. polyaenus** *Mab.* resembles *platypterus* in its shape, the forewing with a more pointed apex, brownish-red with 2 discal bands, one near the base, the other extending through the disc and bifurcating at the cell-end, sending one branch to the costa; at the margin a more deeply coloured, badly demarcated band. In the hindwing similar marking, the space between the two bands rather genuinely reddish-brown. Colombia.

platypterus. **E. platypterus** *Mab.* This imago unknown to us is compared by MABILLE with *Achlyodes lalandii* *Latr.* (Encycl. Méthod. 9, p. 761, Nr. 95 Note) which, however, is not at all stated in the Hesperid catalogue by MABILLE himself. The patria is known neither of this nor of *platyptera*; it is described to be of a shape similar to *lalandii*, blackish-brown, with 2 badly defined bands on the forewing; the first very broad, occupying the whole cell and dissolved in the basal brown; the second very broad; at the margin a broad band.

diversus. **E. diversus** *Mab.* approaches *luctuosus*; smaller with distinct, black macular bands, the wings in a certain exposure to light with a violet reflection. Beneath brown with an ochreous-yellow apical spot, also the proximal margin of the same colour; hindwing ochreous-red with 3 distinct macular bands. Colombia, Brazil.

simplicior. **E. simplicior** Plötz (= ♀ *alburnea* Plötz) (175 b) resembles *sempiternus* above by the distinct band-marking and the cell-spot, but beneath the hindwing is quite brown as in *robigus*, without the blue anal part; the transverse bands extend almost to the proximal margin. Brazil, Paraguay.

E. tolimus Plötz (175 b) is marked above as *Gorg. patens* (175 a) with but one dark median band, *tolimus*, the margin being very much darkened. Beneath likewise similar, but the anal half of the hindwing is blue. The postmedian transverse band is here very distinct. From Colombia. The species may be better inserted in *Gorgophone*.

21. Genus: **Grais** G. & S.

Is very closely allied to *Anastrus*, chiefly distinguished by its longer and narrower cell of the forewing; costal fold and hair-pencils on the posterior tibiae are absent.

G. stigmaticus Mab. (= *fumosus* Plötz) (175 b). A common, widely distributed, large species. Above *stigmaticus*, brown with 2 spotted darker transverse bands, the proximal one being shortened and provided with 2 or 3 minute, white, subapical hyaline dots. Beneath somewhat lighter, otherwise marked the same. From Mexico to Panama, to Colombia and Southern Brazil, occurring also in Jamaica.

G. choricus Schs. is just as large, dark brown, with a violet lustre, at the distal margin darker, the *choricus*, transverse bands somewhat spotted; 3 small, subapical, hyaline dots. Beneath separated by the anal part of the hindwing being scaled lilac-grey, the distal brown macular band being more distinctly prominent. From Mexico (Paso de San Juan).

22. Genus: **Mylon** G. & S.

The third joint of the horizontally porrect palpi is very short. The forewings are broad, at the apex somewhat stunted. The posterior tibiae exhibit a hair-pencil and 2 pair of spurs.

M. lassia Hew. (175 c) is above whitish, dusted grey, in the basal and marginal thirds of the fore- *lassia*, wing, and more narrowly at the margin of the hindwing densely dusted with brown and very much like *Eudamidas melander* from which it is easily separated by 4 small, hyaline, subapical spots and the long hair-pencils of the posterior tibiae. Very common and widely distributed from Mexico to Colombia and Bolivia.

M. pulcherius Fldr. (175 c) is very similar, larger, the discal area of the hindwing more uniformly *pulcherius*, dusted brown, faintly contrasting with the basal and marginal areas; the dark marginal area of the hindwing broader. Mexico to Colombia and Brazil.

M. pelopidas F. Forewing above dark ash-grey with a dark brown discal line. Hindwing ash-grey. *pelopidas*. Body dark brown, antennae black. Hindwing with darker marginal dots. Under surface ash-grey. — This very short description which fits to quite a number of species mentions as patria: „in Indiis“, which probably means the West Indies formerly constituted by great parts of tropical America.

23. Genus: **Eudamidas** G. & S.

Different from *Mylon* merely by the absence of the hair-pencil of the posterior tibiae.

E. melander Cr. (175 c) is a well-known, very common species with greyish-white wings dusted *melander*, brown in the basal and marginal areas, with torn, dark macular bands; easily discernible from the very similar *Mylon lassia* by the absence of the small hyaline spots and of the hair-pencils. From Mexico to Paraguay. — From Peru f. **obscurior** Schs. was described; above darker and browner, forewing without a discal spot, the subterminal shade darker and not dentate.

E. ozema Btlr. (175 c) is similar, smaller, paler, more thinly scaled, somewhat iridescent, the marginal *ozema*, and basal areas only slightly darkened.* Very common from Mexico to Colombia and Southern Brazil.

E. cajus Plötz (175 c) is somewhat larger, with a more bent costal margin of the forewing and *cajus*, a more pointed apex. The whitish wings are dusted more reddish-brown, the discal area of the forewing is not remarkably lighter, the dark antemarginal band is particularly on the forewing less dentate and more blurred. Beneath almost without markings except the antemarginal bands. Hitherto apparently only known from Peru and Bolivia.

24. Genus: **Xenophanes** G. & S.

Separated from the preceding genera by the shorter, more rounded wings without a costal fold; nor do the posterior tibiae exhibit a hair-pencil.

tryxus. **X. tryxus** Cr. (175 c). Above brownish-grey, dusted bluish with numerous hyaline spots arranged like a band; beneath at the proximal margin of the forewing and in the disc of the hindwing almost purely white. Everywhere very common from Mexico to Southern Brazil, generally not rising beyond altitudes of 3 to 4000 ft.

ruatanensis. **X. ruatanensis** G. & S. is probably of the same species. It is smaller and much darker, particularly on the under surface of the hindwing the white area is very narrowly confined, the hyaline spots smaller. Known only from the Island of Ruatan (Honduras).

25. Genus: **Carrhenes** G. & S.

Almost the same as the preceding, but the ♂♂ exhibit a costal fold and a brown hair-pencil on the posterior tibiae. On the forewing the upper median vein rises nearer at the lower cell-angle.

fuscescens. **C. fuscescens** Mab. (175 d) is above dark greyish-brown with a reddish shine, spotted darker in the shape of transverse bands, and with 7 minute hyaline spots, one of them in the cell, 3 subapical ones and 3 below them. Beneath somewhat lighter, of a reddish-yellow, marked as above with a black spot at the anal angle of the hindwing. Mexico to Honduras.

calidius. **C. calidius** G. & S. (175 d) is very similar, in the middle of the proximal margin of the forewing and in the disc of the hindwing brightened up by lilac whitish, whereby the macular band of the hindwing is more distinct. Beneath the hindwings are more whitish, the macular bands often almost extinct. Mexico to the Amazon.

chaeremon. **C. chaeremon** Mab. (175 d) is considerably larger, very similar, but with clearer and more distinct markings; wings in the basal and marginal areas more blackish-grey, in the disc lighter, particularly on the hindwing almost white. The ♀ is still larger, the bases of the wings darker, the rest whiter, the markings more feeble. Expanse of wings: 35 to 38 mm. Sao Paulo.

autander. **C. autander** Mab. resembles *Chiomara asychis* (178 a). Wings greyish-black with a marginal band of minute black spots being anteriorly pupilled whitish; at the apex there are 3 quadrangular hyaline spots, below them a blackish band; in the disc there are 2 black, interrupted dentate lines, between them whitish; in the submedian area a red-brown spot. The hindwing is brownish black, with an antemedian white band bordered with black, near the margin with a reddish-white macular band. Beneath the hindwing is white, at the proximal margin bluish with 3 blackish macular bands in the disc. Expanse of wings: 34 mm. Buenos Ayres.

besa. **C. besa** Mab. is dark greyish-yellow with 3 apical hyaline dots on the forewing, an oblong cell-spot with a small one at the costal margin above it and 4 behind it between the median and lower radial veins. Hindwing with a dark discal band, along the margin with small, indistinct, yellowish spots, also in the middle. The under surface is lighter, more yellow, the forewing with a bent row of 5 or 6 yellowish spots before the apex; on the hindwing beneath the light macular bands are more distinct, particularly the distal one; in the cell a round, yellowish-white spot. Expanse of wings: 28 mm. Patria unknown.

andraemon. **C. andraemon** Mab. has the size and shape of *chaeremon* (175 d). Wings dirty white, dusted light reddish-brown, the base of the forewing brown bordered by a darker colour, projecting below the cell, here with a quadrangular, light yellow spot; the discal area is almost white, at the costal margin with a brown triangle, the apex of which is situate at the cell-end; into the light brown marginal area the white discal area projects in 2 small spots between the radial veins. Hindwing brown, the costal margin as far as the middle white, behind it with 2 brown bands. Under surface white with a brown costal-marginal triangle. Colombia.

callipetes. **C. callipetes** G. & S. (175 d) resembles *fuscescens*, but it has more numerous hyaline spots; the spot at the cell-end is double, above them there is another spot at the costal margin; the discal spots are larger and extend almost to the proximal margin. The hindwing also shows 2 hyaline spots in the disc. Beneath the hindwing does not show a spot at the anal angle. From Southern Mexico to Colombia, everywhere rare.

meridensis. **C. meridensis** G. & S. (175 d) approaches *callipetes* and is easily discernible by the whitish-blue anal half of the hindwing beneath. Costa Rica, Venezuela.

canescens. **C. canescens** Fldr. (175 d, e) is another very similar species, smaller, of a paler colour, with smaller hyaline spots; on the forewing the dark spots are more distinct. Beneath the colour is still much paler, the spots very irregular. Widely distributed and common from Mexico to Colombia.

leada. **C. leada** Btlr. (175 c) is above in the disc still much paler, almost yellowish-white, so that a large, darker apical spot is very prominent, the basal area being darkened, too. Costa Rica to Paraguay.

dilucida. **C. dilucida** Mschlr. (175 c) is a species placed here as doubtful by MABILLE. Above greyish-brown, in the discal area strewn with red with 3 small apical hyaline spots and a broad discal hyaline band. The hind-

wing shows a very broad hyaline discal band and a narrow one behind it. Beneath white with greyish-black, spotted transverse bands. From Surinam.

26. Genus: **Potamanax** Wts.

This genus contains more than a dozen of rather small species with comparatively short and broad forewings, with a rather rounded apex, mostly dark-coloured, with a whitish or yellowish discal area. The antennal club is strong, bent. The 3rd palpal joint is rather long, straightly porrect. The cell of the forewing is short and narrow, the lower median vein rises almost just as distant from the base as from the upper median vein, the latter rising rather near the lower cell-angle. The posterior tibiae exhibit 2 pair of spurs, but no hair-pencil.

P. pammenes *G. & S.* (175 e) is a small species, above blackish-brown with a rather broad, white discal band which is rounded and narrowed on the forewing, not reaching the costal margin and with a faint yellow tint towards the proximal margin. The dark ground-colour is postdiscally somewhat lighter in the shape of a band. The under surface is much lighter, the hindwing as far as the base greyish-white. From Nicaragua. *pammenes*.

P. unifasciata *Fldr.* (175 e) approximates the preceding, but it is easily discernible by 5 minute, white, subapical dots and orange-yellow colouring at the proximal margin of the white discal band on the forewing. Colombia (Bogotá). *unifasciata*.

P. thoria *Hew.* differs from *pammenes* (175 e) by a considerably narrower white discal area, particularly on the forewing. Ecuador. *thoria*.

P. melicertes *G. & S.* (175 e) is likewise closely allied to the preceding and separable by the white discal area being slightly smoked in a brownish shade, reaching the costal margin on the forewing and being somewhat snapped off below the median veins, whilst on the hindwing it does not reach the proximal margin. From Panama (Chiriqui) and Costa Rica. *melicertes*.

P. flavofasciata *Hew.* (175 f) has only on the forewing a band of yellow colour shaped as in *pammenes*, the hindwing remaining quite black, except a lighter part at the costal margin at most. Ecuador, Bolivia. *flavofasciata*.

P. xantholeuce *Mab.* (175 f) has likewise a yellow discal band occurring, however, also on the hindwing. The wings are of a lighter brown, before the margin somewhat dark in the shape of a band, and also postdiscally at the costal margin and behind the cell clouded darker. Beneath the hindwing is bluish-grey in the anal half and at the base. Panama. *xantholeuce*.

P. fassli *sp. nov.* (175 f) is somewhat similar, but the yellow discal band on the forewing has the shape of an oval spot and reaches neither the costal margin nor the proximal margin. The light distal area is veined dark, while the band is not. The spot of the hindwing is of a purer white, at the costal margin very much expanded and scarcely extends beyond the median. Beneath the hindwing is almost entirely white, except a narrow brownish-grey marginal part with some small light spots in it, at the base it is somewhat bluish. Several specimens from Colombia (Rio Negro, Sosomoco) and Bolivia (Songo). *fassli*.

P. latrea *Hew.* (175 f) initiates another group of mostly somewhat larger species, in which the forewing shows behind the white, mostly darker veined discal area a second brownish, smoked band sharply intersected by the black veins, appearing in the present species between the median vein and lower radial vein and exhibiting above it towards the margin 2 smaller spots besides; the forewing exhibits an indistinct, antemarginal row of brownish dots. The white discal area is smoked brown towards the costal margin. From Nicaragua. *latrea*.

P. thestia *Hew.* (175 f) is in the ♂ similar, the band of the forewing broader, as far as the costal margin of a pure white, not reaching the proximal margin on the hindwing; on the forewing there is a yellow spot in the submedian area near the base. In the ♀ the band of the forewing is smoked grey. Ecuador. *thestia*.

P. paralus *G. & S.* (= *thestia* *Drc. nec Hew.*) (175 f, g) is almost the same, but it has a considerably narrower white band being still more shortened particularly on the hindwing. Peru. *paralus*.

P. effusa *sp. nov.* (175 g) is the most closely allied to *fassli* (175 f). The ground-colour is a much duller greyish-brown, the broad, whitish band extending from the costal margin to the proximal margin is distally not sharply defined; behind it there are yet some whitish diffuse spots, particularly distinct in the submedian area and between the radial veins. Hindwing as in *fassli*. Beneath almost entirely white. From East Colombia (Rio Negro). *effusa*.

P. confusa *sp. nov.* (175 g) is very similar, the band much narrower, quite faded and ochreous-yellow; also on the hindwing it is narrower and extends farther to the proximal margin, which is haired light greyish-blue. Beneath white, tinted ochreous, with a light blue base of the hindwing and a light brownish-grey apical part of the forewing and distal margin of the hindwing in which there are small light spots. From Panama. *confusa*.

- caliadne*. **P. caliadne** G. & S. (175 g) is likewise very closely allied to *thestia*, more variegated owing to the much broader, light brown postdiscal band and the light yellowish marginal dots; in the submedian area near the base of the forewing there is a large, white spot parted black by the fold; the broad, white discal area of the hindwing does not reach the proximal margin. Described from Costa Rica.
- violaceus*. **P. violaceus** Mab. (175 g) has an exterior somewhat similar to the preceding, but it probably scarcely belongs hereto owing to the shorter palpi and some other slight differences. Its size is very variable. The broad, white, black-veined discal band is at the proximal margin more or less yellow; at the cell-end small black discal spots may be present or absent; the marginal area on the forewing is extensively violettish-grey. From Peru and Bolivia. — As **fumida** form. nov. (175 h) I denominate specimens from the valley of the Rio Aguaca from the West Colombian Cordilleras, entirely dusted brownish-grey, except a conspicuous yellow spot on the proximal margin of the forewing and the light yellowish costal-marginal part of the hindwing. They look rather different, but are probably not a species of their own.

27. Genus: **Achlyodes** Hbn.

Distinguished from the preceding by the much shorter terminal joint of the palpi, and a less strong and less bent antennal club. On the forewing the lower median vein rises somewhat nearer at the base.

- fridericus*. **A. fridericus** Hbn. (175 h) is one of the smaller species; above black, on the forewing postdiscally irregularly blackish-brown band-shaped lighter, on the hindwing with a very indistinct lighter discal band. Beneath somewhat lighter with 2 scarcely lighter submarginal bands; on the hindwing the distal margin is greyish towards the anal angle, at the anal angle itself at least in more northern specimens distinctly spotted white; the light area crossed by a darker band. Panama to the Amazon and Brazil.
- calliginea*. **A. calliginea** Mab. (175 h) is very similar, on an average larger, and beneath always without whitish-grey on the hindwing. Mexico to Venezuela and Colombia.
- calavius*. **A. calavius** G. & S. (175 h) is an entirely monotonous blackish-brown species, beneath just a little lighter, at the proximal margin of the hindwing still lighter. Guatemala, Nicaragua, Panama.
- bubaris*. **A. bubaris** G. & S. (175 h) shows a small, apical hyaline dot and a light submarginal area on both wings. Described from Mexico.
- simplex*. **A. simplex** G. & S. (175 h, i) differs from *bubaris* by its larger size and 3 subapical dots. From Panama.
- cyrna*. **A. cyrna** Mab. (= *fasciata* G. & S.) (175 i) looks above exactly like *simplex*, but beneath the distal third of the forewing is orange or ochreous yellow in which there are 3 subapical dots. Panama.
- braco*. **A. braco** Plötz (175 i) is above deep blackish-brown with lighter antemedian, median and postmedian parts, more distinct in the ♀, in the shape of transverse bands. Beneath lighter, particularly towards the proximal margin more reddish-brown with darker macular bands in it. Panama to Brazil, Cuba.
- prudens*. **A. prudens** Plötz (175 i) is of a deep violettish-black, on the forewing postdiscally with a curved black macular band, behind it antemarginally lighter reddish-brown. Beneath lighter brownish, towards the proximal margin greyish with a darker, indistinct postdiscal band. Surinam, Cayenne.
- thiena*. **A. thiena** Plötz (175 i). Purple-brown, in the middle of the proximal margin of the forewing as far as the median black, above it with a cell-spot, and the beginnings of ante- and postmedian bands at the costal margin, before the darkened marginal part the band of the ground-colour is parted by a narrow, black, undulate line. Beneath somewhat lighter, more reddish brown, forewing indistinctly marked, hindwing with a cell-spot, a curved band behind it and a darkened margin. British Guiana; Pará.
- serapion*. **A. serapion** Plötz (175 i) is a very small species, doubtfully placed here. Above purple-brown with black transverse bands forming an angle on the median vein; on the hindwing they are somewhat finer and more indistinct. Beneath lighter, strewn darker, with indistinct markings. From Novo Friburgo.
- protius*. **A. protius** Plötz (= *pulverea* Mab.) (175 i). Above slate-coloured black with 2 curved black transverse bands and a similar antemarginal band interrupted in the middle on the forewing. Beneath lighter brownish, at the proximal angle of the forewing brightened up; here the proximal transverse band is absent. Brazil (Rio de Janeiro).
- violella*. **A. violella** Mab. is said to be a form of *fridericus*. Forewing without hyaline spots, black with deep violet macular bands, as if impressed, one at the base, one in the cell of 2 spots each, at the cell-end a broad band as far as the inner-marginal vein, behind it an undulate band of smaller spots, and before the black fringes a row of dots. Hindwing with 3 basal spots, 1 luna in the cell, behind it 3 separate macular bands. Beneath blackish, only at the base of the forewing light red-brown with the bands as above. Bolivia.

A. cyclops *Mab.* from Colombia and Guatemala has very broad forewings with a pointed apex, and *cyclops*. rounded hindwings protracted in the middle of the margin, with a slightly lobate anal part. All the wings are black, tinted reddish; at the apex lighter, traversed by dark bands. In the forewing before the apex a curved row of black dots from the costa to the middle of the wing, where it often disappears, at the costa centred white and behind exhibiting a whitish macula, and also above the dot very finely pupilled white.

A. colotes *G. & S.* (176 a). This species established according to but 2 ♀♀ entirely resembles *simplex colotes*. (175 h, i) above, but beneath it is very different: greyish-brown, on the hindwing and in the antemarginal area of the forewing lighter; the hindwing exhibits at the cell-end a band-shaped, dark spot and behind it a slightly bent, somewhat longer band, the base and margin being likewise darkened. Nicaragua and Panama.

A. oiclus *Mab.* is dark red-brown, the forewing with 2 broad, straight bands touching the proximal *oiclus*. margin in a right angle, and with 3 small subapical dots; hindwing with a rounded spot at the base, behind it a semicircular band. Beneath lighter brown, the hindwing in the anal half of the distal margin yellow into which colour a piece of the black postdiscal band extends. Panama (Chiriqui).

A. orsus *Mab.* This species is unknown to me and its appertaining to this genus is questionable. *orsus*. Above reddish-brown, with 3 small subapical dots and 2 broad, black, faded bands suffused with violet; the hindwing shows a similar cell-spot and a curved median band, the margin being darkened, too. Beneath lustrous lilac-grey, hindwing with 2 curved bands, one postdiscal and one antemarginal band, which terminate before the proximal margin. From Porto Cabello.

28. Genus: **Pachyneuria** *Mab.*

A very peculiar genus deviating by the doubly bent, very strong costal-marginal vein excelling the subcostal vein in thickness, and by the remarkably strong submedian fold. Distal margin nearly just as long as the proximal margin; on the forewing the middle radial vein is much nearer to the upper one than to the lower. Terminal joint of the palpi conical, rather long, set straight forward. Antennae with a long club and a fine, bent apex. Posterior tibiae fringed with 2 pair of spurs.

P. obscura *Mab.* (176 a) is lustrous olive-grey with thick, black veins and a dentate antemarginal *obscura*. line. Beneath dull black. Colombia, Peru, Bolivia.

29. Genus: **Praxis** *Mab.*

The only species known is a small insect with horizontally porrect palpi. Antennae with a fusiform club, bent round in the second third. Distal margin of forewing below the lower median vein with a concavity so that above it a small angle arises. Hindwing somewhat angled. Posterior tibiae with long, fluffy hair and 2 pair of short spurs.

P. quadrata *Mab.* is dark brown with a black basal stripe and a large, obliquely quadrangular spot *quadrata*. in the disc, one point of which touches the costal margin; apex likewise darkened. Hindwing with 2 shortened bands from the costal margin. Beneath reddish-brown, at the proximal margin of the forewing whitish. Described according to 1 ♂ from Massauary.

30. Genus: **Sostrata** *G. & S.*

The antennal club is longer than in the preceding genus, the 3rd palpal joint likewise longer. Forewing longer and narrower with a rounded distal margin and costal fold. Posterior tibiae with 2 pair of spurs. On the whole not dissimilar to the species of *Paches* and to some blue *Pythonides*.

S. scintillans *Mab.* (176 a) is blackish, towards the margin with a lilac reflection, strewn with numerous *scintillans*. silvery-blue, small scale-spots, and some narrow, black undulate bands, some postmedian, rather inconspicuous, small hyaline spots. Beneath lighter brown with darker, undulate transverse lines. Mexico to Brazil.

S. adamas *H.-Schäff.* (= *leucorrhoea G. & S.*) (176 a) is above the same, but beneath the anal part *adamas*. of the hindwing is bluish-white; also on the forewing the proximal margin is spotted white. From Panama to Colombia.

S. pusilla *G. & S.* (176 a) is considerably smaller, of a purer black and only towards the base *pusilla*. strewn with silvery blue; the subapical dots of the forewings are absent. Nicaragua; Panama; Amazon.

S. plumbago *Plötz* (= *chalybs Mab.*) (176 a) is brown with a broad, black transverse band strewn *plumbago*. with silvery blue. Beneath lighter brown with a yellowish base and proximal margin, the hindwing suffused with a lustrous grey, with a black macular band, in the middle double. From Peru (Chanchamayo).

31. Genus: **Milanion** Wkr.

Distinguished by the oblong shape of the wings with a comparatively short distal margin. The cell of the forewing is broad and short; costal fold absent. Antennal club long and sharp. Palpi thickly scaled with a long, black terminal joint. Posterior tibiae with a hair-tuft and 2 pair of spurs.

- hemes*. **M. hemes** Cr. (176 b) is black with small, white discal and cellular spots, and 5 white subapical dots in a curved row. The hindwing shows a very broad, white discal band extending from the costal margin to the proximal margin. In the ♀ the discal spots and the white area of the hindwing are enlarged. Guiana, Brazil.
- marciana*. **M. marciana** G. & S. (176 b) is very closely allied to *hemes*, but the white area of the hindwing is much broader and the forewing is without the white cell-spot. From Panama.
- marica*. **M. marica** G. & S. (176 b) almost looks like a *Potamanax*, the discal band of the forewing being much steeper and standing rectangularly on the proximal margin; the hindwings are longer, too, and thereby also the discal band ending towards the anal angle appears steeper. Nicaragua.
- leucaspsis*. **M. leucaspsis** Mab. is above blackish-brown with 5 subapical and 4 discal white spots. Of the latter that at the costal margin is small, in the cell there is a larger one. Hindwing with a broad, white transverse band. Beneath marked the same, but of a paler colour; on the hindwing the basal part is white, the white band broader. Abdomen above black, beneath white with a black anus whereby it differs from the closely allied, smaller *hemes* the abdomen of which is above belted white. From Cayenne and Brazil.
- clito*. **M. clito** F. (176 b) resembles *hemes*, but it has about the same shape of wings as *marica*, with a convex projection of the hindwing in the middle of the margin and a concavity below it so that a somewhat rounded anal lobe is created. The discal spots situate below the cell of the forewing are somewhat extended and the white spot of the hindwing has an oval shape and touches neither the costal nor proximal margins. Guiana, Brazil.

32. Genus: **Eantis** Bsd.

The genus contains some conspicuous representatives with a slender, bent antennal club, porrect palpi, with a broad second and rather short, conical terminal joint. The apex of the forewing is almost ensiformly pointed, the distal margin very convex, the hindwing very broad, rounded quadrangular. The posterior tibiae with a hair-pencil and 2 pair of spurs. Some species are very common; the black insects are fond of resting on umbels and other white blossoms, noticeable from afar, with their wings flatly spread, the apical part of the forewing being very much bent above the surface and hanging down.

- thraso*. **E. thraso** Hbn. (176 b) is a well-known, common species from Mexico through almost the whole of South America as far as Paraguay, also in the Antilles. Black, in the distal costal-marginal half of the forewing with an oblong-oval, brownish-grey, lighter part, in it at the costal margin itself a narrow dark spot; on both wings bluish-grey antemarginal spots, in the disc towards the proximal margin larger, brownish-grey, round spots which are more or less extinct in the darker ♀.
- ulpianus*. **E. ulpianus** Poey (= rossine Btlr.) (176 c) is somewhat similar, the bluish-grey marginal macular band appears as a straight, narrow band extending from the apex to the proximal angle and cutting off the strongly bulging distal margin. Instead of the light inner-marginal spots there is a broad, dark brown band projecting pointedly on the middle radial vein and being flawed towards the margin. Beneath very much dusted bluish-grey, particularly on the hindwing. From Brazil and Cuba.
- papinianus*. **E. papinianus** Poey (176 c) approximates *ulpianus*, the dark band of the forewing is here at the costal margin much broader, flown together with the cell-spot; the light marginal band is not prominent at all, instead of it a dark oblique line appears parting the apex and extending to the distal third of the proximal margin. Beneath only the anal half of the hindwing is dusted bluish-grey. Described from Cuba.
- pallida*. **E. pallida** Fldr. (? = mithridates F. ? = ozotes Btlr.) (176 d) is brownish-olive, with a lighter antemarginal oblique band and two indistinct, darker, undulate transverse bands and cell-spot. Beneath lighter brownish, the distal-marginal half almost whitish. Very common from Mexico to Colombia and Bolivia. Specimens flying at the latter locality seem to be constantly darker, but they are also found elsewhere.
- agylla*. **E. agylla** Mab. is somewhat larger and darker brownish-black than the preceding, in the basal third almost black, in the middle with an olive-green shine, before the apex are 3 white subapical dots, behind it a blackish-brown band expanded at the proximal margin; marginal area with a rather broad, black margin. The light area of the hindwing is reduced, with 3 dark brown bands. The under surface is light yellowish-brown, the hindwing blacker, the markings more distinct. The ♀ is larger, the apical dots more intense, behind them 2 more dots encircled by brown, in the cell a black spot. From Bolivia.

E. chlorocephala *sp. nov.* (176 d) is somewhat doubtful as to its position. Smaller than *pallida*, otherwise similar in the colour and marking, but the marginal area is not so broadly darkened, but only with a rather narrow, darker submarginal line. Three small, white subapical dots, the middle one being the smallest. Head and collar with a metallic green reflection. Under surface almost as above, but the hindwings are much darker brownish-black than the forewings. Bolivia (Rio Songo).

33. Genus: **Sebaldia** *Mab.*

Scarcely different from the preceding, but the ♂ exhibits a hair-tuft at the base of the costal margin of the hindwing above and a spot corresponding to it beneath. Only one well-known species:

S. busirus *Cr.* (= *sebaldus* *F.*) (176 e) is above deep dark brown with still darker macular markings, beneath the anal distal-marginal part of the hindwing is of a bright orange-yellow, in the ♂ with dark spots therein. From Mexico through Central America, Venezuela, Colombia, South East Brazil to Paraguay. In the Upper Amazon district the yellow of the hindwing beneath is reduced, in the Lower Amazon district and Guiana, also in Colombia, it disappears altogether: f. **obscura** *Mab.* — The larva is violettish-brown with alternately yellow and white belts, and lives on Citrus.

34. Genus: **Doberes** *G. & S.*

Separated from *Eantis* by the longer terminal joint of the palpi and much less ensiform apex of the forewing. The posterior tibiae exhibit only one pair of spurs and on the inside a hair-comb with short spiny bristles in it. Costal fold absent. Only 1 species.

D. hewitsonius *Reak.* (= *mexicanus* *Fldr.*, *ananius* *Plötz*) (176 d). Light brown with 2 chestnut-brown costal-marginal spots, the proximal one rectangular, the distal one before the apex triangular, two undulate darker bands particularly on the hindwing broadly surrounded with a lighter colour. Beneath especially the hindwings are strewn violet. Mexico.

35. Genus: **Masices** *G. & S.*

Distinguished from the preceding genus by the longer antennal club and shorter terminal joint of the palpi. The middle radial vein of the hindwing is almost absent.

M. anticus *Plötz* (176 d) is dark blackish-brown with a violet reflection, 2 black cell-spots and an oblique band of the forewing expanded towards the proximal margin, the margin darkened. Hindwing the same, but instead of the cell-spots there are 2 transverse bands. Beneath only little lighter, the cell-spots absent, and the apical half of the forewing somewhat lighter. From East Mexico. — In West Mexico, Costa Rica and Guatemala flies: f. **sobrinus** *G. & S.*, in which the apical half of the forewing beneath shows decidedly yellow colour. The ♀ is considerably larger.

36. Genus: **Antigonus** *Hbn.*

Well distinguished by the peculiar shape of the wings: the proximal margin of the forewing is very concave, the proximal angle extended to a lobe, the hindwing is extended like a tooth on the upper radial vein. The antennal club is semicircularly bent. Palpi as in *Eantis*. Posterior tibiae with hair-pencil and 2 pair of spurs. The ♂ exhibits a costal fold.

A. nearchus *Latr.* (= *ustus* *Hbn.*, *pausus* *Warr.*, *hippalus* *Fldr.*, *sataspes* *Fldr.*) (176 e) is above deep blackish-brown with darker macular bands, between them in some places with a violet reflection. The under surface is reddish-brown, in the ♀ more yellowish-brown, of the macular bands only the distal border-lines are dark, the bands themselves somewhat darker brown. Very common from Mexico to Southern Brazil.

37. Genus: **Systasea** *Edw.*

In its structure very near the preceding genus, but the tooth of the hindwing is shorter, mostly another small one below it, the distal margin below deeper concave, the apex of the forewing somewhat stunted. The slender antennal club is simply bent, the terminal joint of the palpi longer.

S. erosa *Hbn.* (= *westermanni* *Latr.*) (176 e). Dark brown, in the ♂ densely powdered with a bluish grey; the forewing exhibits 4 white subapical dots in a straight line, in the ♀ some more hyaline spots between the median and radial veins and 3 undulate, darker macular bands. Beneath marked the same, but the ground-colour in the ♂ is red, in the ♀ yellowish-brown. Mexico to Paraguay.

- funebria*. **S. funebris** *Fldr.* (176 c) is somewhat similar, more blackish-brown with 2 distinct, coherent transverse bands which are particularly on the hindwing acutely prominent; the distal one is here towards the margin bordered by a light grey stripe. Beneath lighter, red-brown, towards the margin on the forewing more yellowish-brown; in the distal transverse stripe of the forewing there are here, more distinct than above, some small hyaline spots proximally sharply bordered by dark. Mexico.
- corrosa*. **S. corrosa** *Mab.* (= *sericus* *Plötz*) (176 c) is above blackish-brown with a violet reflection; one antemedian and one postmedian jet-black transverse line; in the distal one being very much curved there are 3 white subapical hyaline spots and farther below two more; it is thickened into spots on the hindwing at the costal margin, the proximal one on the forewing projects in the middle angularly towards the base, in the cell of the hindwing angularly towards the margin. Beneath red-brown, marked as above. Mexico to Guiana.
- liborius*. **S. liborius** *Plötz* (176 c) is above not dissimilar; between the two transverse lines a third is inserted on the forewing. The small median hyaline spots are absent in the ♂, whilst in the more greyish-brown ♀ they are present. At the costa of the forewing there is another small hyaline spot at the proximal band; body and base of wing show a greenish reflection. The under surface is more blackish-brown, in the anal half of the hindwing whitish. Bahia, Chapada.
- incisa*. **S. incisa** *Mab.* (= *aserea* *Plötz*) (176 c) is likewise similar, much smaller, darker, the 2 transverse bands broader, more faded, the proximal one on the hindwing reduced to a cell-spot. The forewing shows 2 white, subapical hyaline spots. Brazil.
- pulverulenta*. **S. pulverulenta** *Fldr.* (= *taeniatu*s *Plötz*, *zampa* *Edw.*) (176 e) is brownish-grey with a white-hyaline, narrow median band distally projecting pointedly with 2 teeth on the median veins, whilst towards the costal margin it is distally, towards the proximal margin proximally bordered with a ferruginous yellow; marginal area especially towards the apex darkened. Hindwing in the disc and marginal area more extensively mixed with a ferruginous yellow, with a lighter bluish-grey transverse line in the distal area. Beneath the hindwing is almost white. From Arizona to Guatemala.
- emorsa*. **S. emorsa** *Fldr.* (176 e) is a very variable species from Mexico, light greyish-brown, on both wings towards the proximal margin dusted bluish-white, with two whitish, partly hyaline macular bands and a very large, roundish spot behind the cell. Beneath almost white, only towards the margin light yellowish-brown, at the anal angle with a black spot. — At the same place and time there fly specimens with a very broad, purely white discal area on both wings and a more darkened base and marginal area: **albimedia** *form. nov.* (176 f), without showing any real transitions, for which reason it may be a species of its own.

38. Genus: **Staphylus** *G. & S.*

It forms together with *Bolla* *Mab.* one of the most difficult Hesperid genera. Many species are externally scarcely separable, at most by slight differences in the length of the last palpal joint, the palpal covering or other minute details, above all by the shape of the male genitals. The antennal club is somewhat obtusely pointed, the thickening unilateral, so that the other side is concave. Costal fold present. The upper median vein rises a little before the cell-angle. The distal margin of the hindwing is somewhat indented below the subcostal vein. The 3rd palpal joint is rather long, straightly porrect, the two first joints long-haired. The posterior tibiae show 2 pair of spurs, no hair-pencil, but they are long-haired. We combine *Bolla* *Mab.* with it, the palpi are here somewhat shorter, the hindwings more rounded.

- mazans*. **St. mazans** *Reak.* (= *ascalaphus* *Stgr.*, *oeta* *Plötz*, *vincula* *Plötz*) (176 f) is blackish-brown as all the following are, in some places particularly the ♀ scantily strewn with somewhat lighter, yellowish scales, with 2 very indistinct, broad, faded, darker transverse bands and 2 small white subapical dots on the forewing, which may also disappear. The hindwing is in the cell and band-shaped behind it somewhat lighter spotted. Mexico to Colombia and Venezuela, also in Trinidad, everywhere very common.
- hayhursti*. **St. hayhursti** *Edw.* is very closely allied to *mazans*; the colour of the wings is decidedly lighter with a prominent dark marking, and below purely white palpi which in *mazans* are intermixed with grey hair. It may be the northern representative of *mazans* from the southern United States, occurring, however, also in Mexico.
- scoramus*. **St. scoramus** *Schs.* has the same shape of wings. Yellowish scales are interspersed into the ground-colour, the dark markings are almost entirely extinct; the scales form an antemarginal row of small, indistinct, greenish yellow spots, the same in the disc and near the base; 2 small subapical dots are present. Beneath of a duller colouring, the small subterminal spots a little more distinct, particularly on the hindwings. Palpi dark grey. Expanse of wings: 26 mm. Peru.
- anginus*. **St. anginus** *Schs.* (176 f) does not differ above from *mazans*. Beneath dark brown, the hindwing in the anal half thickly strewn with grey and with a white strigiform spot at the cell-end. Expanse of wings: 21 mm. Novo Friburgo (Southern Brazil).

St. minor Schs. has likewise the same shape as *mazans*. The colour is a duller brown, scantily strewn *minor*. with 3 indistinct darker grey transverse lines near the base, in the disc and before the margin, which are parted into spots by the veins; the small subapical dots are absent. Beneath lighter brown, especially at the costal margin and apex of the forewing, at the base, proximal margin and anal angle of the hindwing strewn yellowish. Expanse of wings: 19 mm. Peru.

St. tadus Schs. has a more uniformly undulated distal margin of the hindwing than *mazans*; the *tadus*. subapical hyaline dots are absent. Wings dark brown, scantily strewn light yellow; in the middle and before the margin minute, very indistinct, grey spots. Beneath of a duller brown with a grey cell-end streak of the hindwing, the small grey spots more distinct than above. Expanse of wings: 26 mm. Novo Friburgo.

St. aztecus Scdd. (176 f) is also like *mazans*, but the hindwings entirely margined, rounded, not *aztecus*. undulate, and below the apex not excised. The colour is lighter than in *hayhursti*; the forewing exhibits 3 subapical dots. Mexico.

St. brennus G. & S. (176 f) is above almost uni-coloured blackish-brown, scantily strewn with *brennus*. ochreous, with a but little lighter submarginal band; subapical dots absent. Palpi below clad with long, black and yellow scales. Panama.

St. giselus Mab. (= eusebius Plötz) (176 f) entirely resembles *brennus*, but it has 3 subapical dots. *giselus*. Colombia (Bogotá). — f. *subgisela* Strd. has besides 1 or 2 small discal dots. *subgisela*.

St. evippe G. & S. (176 f) approximates *giselus*, but the palpi are beneath of a purer white; the *evippe*. 2 subapical dots are more or less extinct, the first being often entirely absent, whilst in the ♀ they are better visible. Mexico to Guatemala.

St. orsines G. & S. (176 g) is similar, much larger, more monotonously black without subapical *orsines*. dots; palpi longer porrect, below whitish, the apex of the forewing is sharper, the distal margin straighter, the genitals are very different. Mexico.

St. terreus Schs. is above dark greyish-brown with darker brown bands at the base, in the middle *terreus*. between the median and the proximal margin with a cell-spot above it, and in the distal area with a fine ante-marginal line and at the distal margin large spots flown together towards the apex. Beneath dark brown with a light grey antemarginal band; anal half of hindwing grey, traversed by a brown band, at the cell-end with a grey streak. Expanse of wings: 29 mm. Venezuela.

St. holophegges Dyar (176 g) is above black with a slight bronze reflection, without any markings *holophegges*. at all; beneath brownish-black. Palpi beneath grey intermixed with white scales; ventrum whitish-grey with a black discal line. Expanse of wings: 22 mm. Mexico (Misantla), taken in July.

St. litus (176 g) is likewise black with a slight bronze tint, unmarked; head and collar scantily inter- *litus*. mixed with coppery scales. Beneath black with a greenish shine; palpi below, chest and a double line on the ventrum white; in the fringes of the apex of the forewing some white scales. Costal fold yellow. Expanse of wings: 25 mm. West Mexico (Sierra de Guerrero), taken in June.

St. alicus Schs. Dark brownish-grey with black transverse bands in the middle and behind it, similar *alicus*. basal area and marginal spots; on the hindwing the dark basal area is flown together with the discal band. Forewing beneath dark brown, at the proximal margin lighter, the distal margin tinted violet; hindwing violettish-brown with the darker brown markings of the upper surface. Expanse of wings: 24 mm. South East Brazil.

St. subapicatus Schs. Head and palpi brown intermixed with yellow hairs. Forewing dark brown *subapicatus*. with a darker, oblique discal shade and a distal one being slightly bent towards the costal margin and composed of oblong spots; similar antemarginal spots; hindwing with a cell-spot and narrower discal and distal bands flown together at the costal margin; marginal spots irregular. Beneath the forewing is dark brown, at the costal margin, distal margin in the lower half and before the apex grey, the apex itself dark brown, hindwing somewhat lighter than above. Expanse of wings: 36 mm. Songolica (Mexico).

St. cylindus G. & S. (176 g) is likewise a larger species resembling somewhat *Achlyodes simplex cylindus*. (175 h, i) and *cyclops*, distinguished by the darker distal margin of the forewing beneath, which is ochreous-yellow in *cyclops*. Mexico to Costa Rica and Colombia.

St. imbras G. & S. (176 h). The ♂ is without the subapical dots, whilst the ♀ has 3 of them. Palpi *imbras*. longer than in *brennus* (176 f) which the species resembles very much. Mexico.

St. melangon Mab. is allied to *imbras*, but it has a grey base of the wings, and in the disc of *melangon*. the hindwing 2 grey transverse bands. Patria unknown.

St. saletas G. & S. differs by the wings being decidedly tinted ferruginous-brown, the dark transverse *saletas*. bands being more distinctly pronounced. Palpi below white, not yellow. The forewing shows 2 subapical dots, the ♀ besides 3 hyaline dots in the disc. Guatemala.

- cremerus*. **St. evemerus** G. & S. (176 g) is blackish-brown with 3 indistinct, darker transverse bands than the other species, the ♂ without, the ♀ with 3 subapical dots. Palpi below ochreous-yellow intermixed with black hairs. Genital organs very different. Costa Rica.
- unifascia*. **St. unifascia** Mab. (176 g) has more blackish-grey wings, the ♂ with one, the ♀ with 2 subapical dots, with a darkened basal area. Palpi below whitish. Mexico, Honduras, Panama.
- cupreiceps*. **St. cupreiceps** Mab. (176 g). Blackish-brown with a bronze tint, at the base darker; forewing with a faded, reddish postdiscal band; hindwing with a black postmedian macular band, the margin darkened more in the shape of a band. Beneath with a more yellowish tone and more distinct bands. Palpi, head and collar orange-coppery. Mexico to Bolivia and East Brazil.
- aurocapilla*. **St. aurocapilla** Stgr. (= *vulgata* Mschr.) (176 h) is most similar, smaller, palpi below dull yellowish-white, the genital apparatus quite different. The ♂ without, the ♀ with 3 subapical dots. From Mexico to Argentina.
- flavipalpis*. **St. flavipalpis** Plötz (176 h) has somewhat longer extended forewings of a dark blackish-brown colour with the usual, faded, broad, dark transverse bands and 3 subapical dots, the middle dot being removed somewhat proximally. Beneath somewhat lighter brown. Face and palpi below ochreous-yellow. Copiapo (Chile).
- ceos*. **St. ceos** Edw. differs from *aurocapilla* by the longer palpi being below purely white. Forewing of the ♂ with 2, of the ♀ with 3 subapical hyaline dots. Arizona, Mexico.
- ascalon*. **St. ascalon** Stgr. is closely allied to *mazans* (176 f), but larger. Particularly different by the hindwing beneath being dark only in the costal-marginal part, but in the proximal area light whitish-grey, especially at the anal angle. At the costa of the forewing 3 very minute dots below each other, a larger hyaline spot at the cell-end and behind it another fine one recognizable with the lens. Described according to 1 ♂ from Novo Friburgo in South Brazil.
- epicaste*. **St. epicaste** Mab. is above blackish-brown; on the forewing extend 2 almost straight transverse bands, one in the disc, the second postdiscally, touching neither the costal margin nor proximal margin; in the median band there are 2 hyaline dots at the costal margin; margin narrowly darkened; on the hindwing both bands are angled. Beneath more reddish-brown with extinct bands. Palpi below white. Expanse of wings: 22 mm. Brazil.
- cupreus*. **St. cupreus** Mab. Wings black, above indistinctly undulate, with 3 very small white apical dots, thorax and vertex with a coppery lustre. Beneath the wings are black, at the costal margin paler, hindwings blacker. Brazil.
- phylo*. **St. phylo** Mab. Blackish-brown; forewing with a light, ochreous antemarginal band and a quadrangular cell-spot; 3 minute subapical hyaline dots. The hindwing exhibits a similar, undulate band parallel to the distal margin and 2 in the disc. Beneath the distal margin is broadly lighter. Palpi below white, apex blackish-brown. Expanse of wings: 27 mm. Brazil.
- hilarina*. **St. hilarina** Mab. is the size of *Zopyrion satyrina* Fldr. (177 h). Reddish blackish-brown, margin somewhat convex. On the forewing before the distal margin a narrow, spotted, lighter, reddish band, on the hindwing it is broader though more extinct. Beneath the same, at the distal margin lighter; hindwing in the anal half whitish. Described from Pará.
- tyro*. **St. tyro** Mab. is as large as *mazans* (176 f); above black with traces of a reddish antemarginal line, in the disc of the hindwing strewn reddish. The under surface is lighter, at the distal margin of the forewing somewhat lighter; the hindwing shows a reddish-grey antemarginal line and two similar cell-dots. Palpi yellowish, at the apex black. Brazil, Venezuela.
- tetra*. **St. tetra** Mab. entirely resembles the following *pullata*, but it is more of a slate-colour, with 3 subapical dots and a narrower marginal band. Fringes broader black. Forewing at the apex more pointed. From Cayenne.
- pullata*. **St. pullata** Mab. The broad wings are brownish-black, hindwing quadrilaterally rounded. On all the wings there is an indistinct marginal band tinted ochreous, parallel to the distal margin, the hindwing with a similar cell-dot; on the forewing 2 quite minute subapical hyaline dots. Beneath coloured the same, the marginal band fused with the lighter distal margin, the light cell-dot of the hindwing more distinct. Brazil.
- zorilla*. **St. zorilla** Plötz (176 h) is unknown to me in nature; it is said to be very closely allied to *giselus* (176 f), but it has 2 distinctly separated subapical hyaline dots; it is much smaller with a whitish costal fold of the ♂. Panama.
- cordovanus*. **St. cordovanus** Plötz (= *tucumanus* Plötz ex errore) (176 h) is a very small species with a very minute hyaline dot far away from the apex. Hindwing towards the proximal margin somewhat lighter brown. From Cordova (Argentina).
- chlorocephala*. **St. chlorocephala** Plötz (176 h) is a small species: blackish-brown with 2 black macular bands, a golden green head and collar, and easily recognizable by the hindwing being beneath in the anal half of a bluish whitish-grey colour, traversed by 2 undulate brown transverse lines. Brazil.

39. Genus: **Diaeus** *G. n. S.*

Very closely allied to *Systasea* (p. 903) and distinguished by the longer and more porrect 3rd palpal joint. Costal fold absent. Posterior tibiae with 2 pair of spurs and a hair-pencil. On the hindwing the upper median vein rises much nearer at the cell-end.

D. lacaena *Hew.* (176 i) is a small, pretty species easily recognizable and in no way mistakable *lacaena*, by the white discal area, the red-brown basal area and the blackish-brown apical area with black dentate lines. Mexico to Costa Rica and Panama, and reported as doubtful from Brazil. — f. **lacaenina** *Mab.* (*Stgr.* i. l.) (176 h) *lacaenina*, from Colombia (Rio Negro) is somewhat larger and darker.

D. variegata *Plötz* (176 i) is similarly marked, but much darker, monotonously greyish-brown with *variegata*, an olive tint in the ground-colour, without the red-brown apical spot. Beneath the colour is more whitish. From Brazil (Rio de Janeiro).

40. Genus: **Onenses** *G. n. S.*

Well distinguished by the forewing being long-dentate on the median veins; the anal angle extended like a lobe. Cell of forewing long and broad, costal fold absent. Hindwing likewise with 2 teeth on the upper median and upper radial. Antennal club long turned round. Palpi long porrect, the horizontal terminal joint hidden. Posterior tibiae with 2 pair of spurs and a hair-pencil. Only one species:

O. hyalophora *Fldr.* (176 i) is unmistakable for its large vitreous areas. From Mexico to Panama, *hyalophora*, reported also from Texas.

41. Genus: **Timochares** *G. n. S.*

Separated from the preceding genus by the entirely margined wings with a somewhat stunted apex of the forewing, with a very long costal fold. The horizontal palpal terminal joint is longer porrect.

T. trifasciatus *Hew.* (= hemula *H.-Schöff.*) (177 a) is pale brownish, the hindwing lighter yellowish *trifasciatus*, with 3 oblique, undulately dentate transverse lines. The ground-colour is variable, and dark (= **obscurior** *obscurior*, *form. nov.*) (176 i) and light forms fly together at the same places. From Mexico through the whole of South America to Argentina.

T. ruptifasciatus *Plötz* (177 a) is similar, but the transverse lines are broken up into macular bands. *ruptifasciatus*, Mexico.

42. Genus: **Ebrietas** *G. n. S.*

In the veins corresponding with the preceding genus, but the shape of the wings is much broader, the proximal margin is somewhat concave; the costal-marginal vein terminates before the cell-end, in *Timochares* a little behind it. The 3rd palpal joint is somewhat longer.

E. osyris *Stgr.* (177 a) is a well-known species, easily recognizable by the orange-yellow anal part of *osyris*, the hindwing beneath which is traversed by brown undulate lines; the apex of the forewing is likewise somewhat orange beneath. Above deep blackish-brown with black macular bands and cell-spots. Mexico to the Amazon.

E. infanda *Btlr.* (= perfidus *Mschlr.*, patens *Prittw.*, bodia *Plötz*) (177 a) is above very similar, *infanda*, but the hindwing beneath is quite brown, only somewhat lighter than above. The forewing is below the apex somewhat more deeply excised. Colombia, Peru.

E. undulatus *H.-Schöff.* (= anacreon *Stgr.*, tortricinus *Plötz*) (177 b) is smaller than the preceding, with *undulatus*, an intense violet tint, the macular bands deep velvety black, also beneath much darker, more blackish violettish-brown. Mexico to South Brazil. — In Guiana and Bolivia flies a very characteristic form: **evanidus** *Mab.* (177 b). *evanidus*. The blackish base is distally bordered by a straight ashy-grey band; the black median band is complete and forms in its centre a more or less angular spot, whereas the two distal bands are almost or entirely absent, the distal one being mostly indicated only by spots at the proximal margin, the proximal one at the costal margin.

E. livius *Mab.* (*Stgr.* i. l.) agrees with *undulatus* (177 b) in the size and colour; the marginal band *livius*, is narrow, spotted, the inner-marginal spot small; the postmedian band is double at the apex, thin, united with the 3rd in the cell. In the submedian area there is a straight band near the base, separated from the black base only by a scarcely lighter band. Hindwing with 3 rather broad black bands, the marginal one more spotted

than the others. Forewing beneath blackish, marginal area lighter, ferruginous-reddish, especially at the proximal margin. Hindwing in the posterior half light ferruginous-brown, the black bands hardly visible. Bolivia.

- lachesis*. **E. lachesis** Schs. looks like *osyris* (177 a) and is above separated by a small hyaline spot in the upper angle of the black cell-spot and a subapical hyaline spot. Beneath the yellow of the hindwing extends in 2 antemarginal rows of spots to the costal margin, and the proximal angle of the forewing also shows 2 yellow spots. Mexico (Tabasco).
- eclyptica*. **E. eclyptica** Btlr. (177 b) is extremely similar to the preceding, the proximal half of the forewing is much more monotonous in the colouring, darker, without the violettish-grey dusting. The posterior tibiae are without the hair-pencil which is present in the two preceding. Mexico to the Amazon.
- claudia*. **E. claudia** Plötz (176 i) is above very similar to *undulatus*, easily discernible by the hindwing beneath being coloured bluish-grey in the larger anal half. Venezuela. — **E. triseriata** Plötz (176 i) is presumably only a form of it with a still more extensive and more violettish whitish anal part of the hindwing beneath, so that there are 3 transverse bands in it; the forewing is also somewhat whitish at the apex and proximal angle. Venezuela.
- chacana*. **E. chacana** Plötz (177 b) from Panama is very closely allied to *claudia*, but much smaller. The upper surface shows much more faded band-marking, the hindwing beneath is in the anal half of the distal margin only narrowly bluish-grey, so that only one transverse band is in it.
- eremita*. **E. eremita** Plötz (177 b) is larger, above dusted lavender-grey, with distinct, coherent macular bands, in the cell there is only one shortened spot. The hindwing beneath is almost quite whitish bluish-grey, only the costal-marginal part is narrowly greyish-brown. South America.
- impressa*. **E. impressa** Mab. (177 c) is blackish, without any violet tints. Forewing at the base and apex lighter, in the discal area darker. Hindwing almost uni-coloured with 2 indistinct darker transverse bands. Beneath lighter brown. Palpi below grey. From Panama to Bolivia.

43. Genus: **Camptopleura** Mab.

The palpal apex is obtuser than in the preceding genus. The forewing shows a costal fold in the end of which the costal margin forms an obtuse angle; the broad hindwing is regularly rounded, otherwise all agrees with *Ebrietas*.

- theramenes*. **C. theramenes** Mab. (= *auxo* Mschlr.) (177 c) is dark brown, with deep violettish-black bands and watered in the same colour. The under surface is lighter with 2 dentate darker bands near the distal margin. The proximal margin is somewhat lighter. Mexico to South Brazil.
- ebenus*. **C. ebenus** Mab. in its size and colouring resembles *Brachycorine arcas* (Drury), but it is still blacker, forewing scantily strewn with small grey scales behind and below the cell. Beneath unmarked, only at the margin somewhat lighter. By the angled costal margin it belongs here. From Bolivia.
- iphicrates*. **C. iphicrates** Mab. has very broad wings; blackish-brown, strewn with a greyish blue, the undulate lines reddish black. Hindwing more reddish ochreous-brown, broadly margined dark, with 2 blackish-brown marginal bands. On the under surface all the lines are light reddish-brown, in the disc almost whitish, unmarked, with a darkened apex of the forewing; hindwing reddish-brown with a narrowly darkened distal margin. Very closely allied to *thrasybulus*, but constantly differing. From Cayenne and Brazil.
- termon*. **C. termon** Hpffr. (= *strigulosa* Stgr. i. l.) is likewise very closely allied to *thrasybutus* (177 c), but differing by the marking and colouring. Above more ochreous-grey, the costal and distal margins red-brown with 3 red-brown, spotted undulate lines, at the border greyish-blue with a sagittally spotted marginal band strewn with blue. Hindwing still lighter greyish-ochreous, distal margin and 2 undulate bands dark brown. Beneath the forewing is whitish-ochreous, the costal margin of the forewing, 2 confluent marginal bands, hindwing with 2 costal-marginal spots and apex darker. Length of forewings: 19 mm. Peru (Chanchamayo).
- tisias*. **C. tisias** G. & S. (177 c) looks very much like *C. thrasybulus*; the markings are more regularly linear, not so faded, the ground-colour is of a more uniform tint. Costa Rica; Panama to the Amazon.
- cataphanes*. **C. cataphanes** Mab. is smaller than *theramenes* (177 c) and most closely allied to *termon*; the violettish bluish-black markings are finer, more distinct, towards the base they disappear more under the lavender-grey dusting which covers the costal-marginal part and basal part as well as the body. Beneath blackish, the proximal angle of the forewing whitish in the ♀, at the costal margin there is a very distinct, black macular band; hindwing in the ♂ in the anal half light red-brown, in the ♀ as far as the middle of the cell whitish with 2 black bands and 2 cell-spots. Fringes black. Sa. Catharina.

44. Genus: **Cyclogypha** Hbn.

Very closely allied to the preceding genus and distinguished by a stronger antennal club, longer terminal joint of the palpus, and a more pointed apex of the forewing. The costal margin of the hindwing is strongly angled behind the proximal third, and shows a long hair-pencil at the rise of the costal.

C. thrasybulus *F.* (177 c) is above violettish-black with velvety-black dentate lines, beneath more *thrasybulus*, reddish-brown with duller markings, and in the ♂ with a lighter, lilac-grey apex and a lighter proximal margin of the forewing. Very common from Mexico to Southern Brazil.

C. caeruleonigra *Mab.* is very similar, somewhat smaller, the dentate lines more coherent. Beneath *caeruleo-nigra*, black, at the costal margin and apex reddish-brown, the base of the costal margin and the proximal half of the cell as far as the proximal margin of a pure bluish-white; distal margin of hindwing reddish-brown, more or less dusted light blue. Guiana.

45. Genus: **Haemactis** *Mab.*

Antennae short, slender with a small, bent club; terminal joint of palpus almost as long as the second, bent forward. Forewing elongate, produced on the lower radial vein, below the apex concave, like the hindwing. The bare posterior tibiae exhibit only one pair of spurs. Only one species:

H. sanguinalis *Dbl. & Hew.* (177 d) is a small, black and red species resembling certain *Erycinidae sanguinalis*, and not to be mistaken for any other species. Ecuador and Bolivia.

46. Genus: **Diphoridas** *G. u. S.*

Allied to the preceding genera. Terminal joint of palpus still longer, the margin of the forewing more convex, below the apex and above the proximal margin somewhat concave, costal margin before the apex likewise slightly concave. Costal fold absent. Posterior tibiae with 2 pair of spurs and a hair-pencil.

D. phalaenoides *Hbn.* (177 c) is a common, small species with similar characters of the marking as *phalaenoides*, in *Cycloggypha*, but the transverse lines are finer, more numerous and particularly prominent as a bent ante-median transverse line and towards the distal margin near the proximal angle; apical half of the costal margin on the hindwing much darker. Beneath of a duller brown, more monotonous, in the anal half of the hindwing occasionally somewhat lighter lilac-grey. Mexico to Paraguay.

D. palpalis *Latr.* (= *aura* *Plötz*, dichrous *Mab.*) (177 d) is very similar, somewhat larger, hindwing *palpalis*, more brownish, beneath in the anal half whitish. Panama to Brazil.

47. Genus: **Gorgythion** *G. u. S.*

Very similar to the preceding genera, the palpi not quite so long, the shape of the wings broader, at the distal margin less concave, the apex somewhat stunted. Otherwise the same as in *Diphoridas*.

G. pyralina *Mschlr.* (177 d) is light violettish-brown with black macular bands particularly prominent *pyralina*, in the anal half of the forewing in the shape of spots, above them in a row of spots 3 or 4 spots are strewn with bluish-white; 2 minute subapical hyaline dots. Beneath duller greyish-brown. Common from Mexico to Southern Brazil. — f. **marginata** *Schs.* (177 d) presumably belongs hereto; it differs by the broad blackish-brown margin of the hindwing. Described according to 2 Peruvian specimens.

G. begga *Prittw.* (= *alcandra* *Mab.*) (177 d) is above scarcely separable from the preceding, but *begga*, the hindwing above is blacker towards the apex; the chief mark, however, is the hindwing beneath being whitish in the anal half. Mostly common from Panama to Paraguay.

G. beggina *Mab.* (177 d) is above much lighter, light yellowish-violet, whereby the macular bands *beggina*, are much more conspicuous than in the other species; the markings are otherwise almost the same. The hindwing is beneath in the anal half still purer and more extensively white with more feebly prominent markings. Bolivia.

G. beggoides *Schs.* is another very closely allied species. Above greyish-brown, with similar macular *beggoides*, markings as the others, but more confluent; the postcellular row of spots consists of large, elongate spots between the veins; the marginal spots are confluent towards the apex; subapical spots entirely absent; on the light brown hindwing the dark markings are nearly all broadly flown together. Beneath also the forewing shows whitish at the apex and proximal angle, the hindwing a broad white proximal margin and anal angle, white spots in the cell and at the cell-end, and whitish diffuse patches before and on the margin. Expanse of wings: 15 mm. An insular form from Trinidad.

48. Genus: **Anisochoria** *Mab.*

Distinguished by very long, beak-shaped palpi; antennal club strong, curved bow-like and finely pointed. Costal margin of forewing strongly convex, the apex appearing somewhat stunted. Costal fold absent. Border of hindwing regularly rounded. Posterior tibiae with 2 pair of spurs.

A. polysticta *Mab.* (= *lemur* *Mschlr.*) (177 d, e). Above brownish-black, with an oblique row of *polysticta*, 6 very small white hyaline spots from the middle of the costal margin to the proximal angle, 3 small apical spots and 2 or 3 below them. Beneath somewhat lighter brown, in the distal part of the forewing still lighter, in the apex somewhat reddish. Hindwing lilac-grey, watered blackish; with 3 faded brownish transverse bands and ferruginous spots below the costal margin. Common from Mexico to Guiana and Peru. Southern specimens are mostly much darker, the small discal hyaline spots almost disappearing, beneath on the hindwing appear larger chestnut spots.

- pedalioidina*. **A. pedalioidina** *Btl.* Upper surface jet-black, the forewing towards the apex and margin lighter with an irregular antemarginal stripe; near the apex 5 hyaline spots, in the disc 2. The body is also jet-black. Beneath the wings are lighter, with irregular grey bands and dark brown shades. Forewing with an auburn apical spot. Hindwing with 2 large auburn costal spots and an auburn central dot. Length of wings: 1.9 inch; in the colouring it resembles a *Pedaliodes* (t. 35). The exact patria is not known.
- sublimbata*. **A. sublimbata** *Mab.* has only 3 subapical hyaline dots and a light antemarginal band of both wings, which may be divided into spots. Beneath the hindwing is olive at the base and margin. Colombia.
- minorella*. **A. minorella** *Mab.* resembles the preceding and varies in the size. Above blackish or greyish-brown with 3 subapical dots from which a darker stripe runs down, marked by lighter dots, which are occasionally transparent; at the cell-end 3 small hyaline spots. On the hindwing a dark brown postmedian transverse band on both sides bordered with a somewhat lighter yellowish. The dirty grey fringes are speckled black. Forewing beneath greyish-black, in the marginal area lighter yellowish, at the cell-end a black streak, the apical dots pronounced by black angular streaks. The hindwing shows in the disc a large blackish spot appearing to be strangulated in the middle; its anterior half is square with a black appendage towards the proximal margin, which is bordered with white. Marginal area light grey, towards the costal margin light ochreous. Bolivia.
- bibiana*. **A. bibiana** *Plötz* (177 e) is above light greyish-brown with 3 small subapical spots and a fourth above the upper median vein; at the cell-end 2 small light spots; disc of hindwing traversed by a darker arcuate stripe. Beneath lighter yellowish-brown, watered somewhat darker, marked as above. Hindwing still lighter and more yellowish, at the base a darker spot; from the costal margin as far as into the cell a large, brown, triangular spot, on the apex of which there are 2 black dots below the cell. In the marginal area 2 darker brown stripes. Fringes speckled black. This species described from Colombia is probably identical with one of the allied species.
- superior*. **A. superior** *Mab.* is a larger species, above black with lighter margins, 3 apical dots and a lighter grey marginal stripe, towards the proximal angle on both sides bordered by triangular black dots. Beneath a two-pointed white spot is distally attached to the middle subapical dot; in the middle of the marginal area there is a lighter moon-spot. Hindwing ashy-grey, watered black, at the costal angle with a triangular brown spot which may also be bipartite; it occupies the whole cell and is situate with the apex towards the base; at the lower radial vein and towards the proximal margin it is bordered with white. Bolivia.
- subpicta*. **A. subpicta** *Schs.* is described as dark brown with a darker distal margin and lighter subterminal spots towards the apex; 3 hyaline subapical dots. Beneath the forewing is dark brown with a light brownish area at the apex and proximal angle, in the former dark grey spots; the middle of the distal margin is tinted olive. Hindwing isabel-coloured mixed with olive and watered dark; a light discal line terminates in the cell with a silvery spot, below it a black spot. Expanse of wings. 33 mm. Castro, Paraná.
- oligosticta*. **A. oligosticta** *Mab.* is larger than *polysticta* and of a deeper black, the forewing towards the margin more auburn with 3 white subapical dots; postdiscally only 3 small punctiform spots, the two upper ones double. Hindwing unmarked with reddish fringes. Beneath at the proximal angle more auburn, the hindwing with a large, purple costal-marginal spot, at the distal margin and proximal margin grey, darker reticulate in the shape of bands. Expanse of wings: 41 mm. Colombia.
- albida*. **A. albida** *Mab.* (177 e) above almost resembles a *Theagenes*. Forewing very thinly scaled in the disc, ochreous-brownish, towards the margin darkened with 2 or 3 minute subapical punctiform spots. Hindwing in the disc whitish, at the margins blackish-brown. Beneath coloured and marked the same, though of a much duller colour. As its patria only South America is mentioned.

49. Genus: **Theagenes** *G. u. S.*

Chiefly distinguished from the preceding genus by a still more convex costal margin of the forewing exhibiting a slight concavity before the apex. The ♂ has a costal fold. Hindwing in some species rather strongly dentate, in *diurna* even extended into long points. More than half a dozen species distributed over Central and South America.

- aegides*. **Th. aegides** *H.-Schäff.* (177 e) is above greyish-brownish, in some places mixed with bluish-grey, with numerous darker transverse lines and 2 apical dots. Disc of hindwing white. Beneath the forewing is for the greatest part yellowish-or orange-brown, the white hindwing especially towards the margin brownish and watered bluish. From Mexico through the whole of Central America to Colombia.
- albiplaga*. **Th. albiplaga** *Fldr.* (177 e) is somewhat larger, stronger, more densely scaled, more profusely mixed with bluish-grey, with but one subapical dot; the white spot of the hindwing is smaller, rounder, the base and proximal margin broader, darker. Beneath the hindwing is more intensely and more irregularly strewn, especially the costal margin is darker, too. Central America to Venezuela.

Th. lactifera *Btlr. & Drc.* (= *bipuncta* *Plötz*) (177 f). This well-known, common species is distinguished by greyish-brown forewings with a darkened base, two darker dentate transverse lines and 2 or 3 small white subapical spots; hindwing in the disc white, more or less smoky. Beneath on the forewing towards the margin yellowish lighter parts are predominant, on the hindwing more reddish-brown tints. Mexico to Colombia, rather variable. — f. **noctua** *Fldr.* (177 f) is lighter, the forewing in the disc spotted light, the white area of the hindwing much more extensive. As *noctua* is the older form, it ought to be the name of the species.

Th. stator *G. & S.* (177 f) is much darker than the preceding species, marked more irregularly, with very dark hindwings. Beneath on the lighter brown ground on the hindwing towards the costal margin intermixed with small red spots. Mexico to Colombia.

Th. haematospila *Fldr.* (177 f) is very similar, more intensely marked and easily discernible by much more prominent scarlet spots beneath also at the apex of the forewing. Venezuela, Colombia, Bolivia.

Th. diurna *Btlr.* (177 f). Unmistakable by the hindwing being extended on the median veins into 2 long pointed dents. The total tint is more brownish, above otherwise marked similarly as *stator*. Beneath the anal half of the hindwing is whitish, the costal part brown and spotted orange-yellow. Brazil.

50. Genus: **Miltomiges** *Mab.*

This genus established for the only species is distinguished by long antennae with a long, turned down point; palpi long porrect. On the forewing the upper radial vein rises below the upper cell-angle, the middle radial vein nearer at the lower. Hindwing rounded, before the anal angle slightly concave. The posterior tibiae are provided with fringes on the outside and exhibit 2 pair of spurs.

M. cinnamomea *Fldr.* (= *haematites* *Mab.*, *depuncta* *Plötz*) (178 b) looks above like a *Cobalus* and is uni-coloured deep blackish-brown. The under surface is yellowish-red, strewn with cinnamon-brown, in the interior of the forewing darker brown, towards the proximal angle light grey, towards the apex more yellowish with distinct dark veins. Hindwing with a broad, dentate, dark brown transverse band and dark anal stripe. Colombia and Brazil.

51. Genus: **Scantilla** *G. u. S.*

This genus likewise based on but one species is very closely allied to *Staphylus* p. 904 to 6, from which it differs by the absent costal fold, a stouter, shorter and more obtuse antennal club and a longer 3rd palpal joint being turned forward and downward.

S. opites *G. & S.* (177 g) is coloured and marked as the species of *Staphylus*, dark brown with 2 indistinct, faded transverse bands; no subapical dots. The under surface is strewn with dark ochreous, the palpi are below white. From Guatemala.

52. Genus: **Paramimus** *Hbn.*

Distinguished by long forewings with a short distal margin without a costal fold. The antennae exhibit a long, uniformly bent club; palpi thickly scaled white, from which the long black terminal joint projects. The posterior tibiae are not thickened and exhibit a hair-tuft and 2 pair of spurs.

P. stigma *Fldr.* (177 h) has blackish-brown wings with 2 large, white, transparent spots, in an oblique light with a silvery lustre, behind the cell of the forewing, below it a red spot. The hindwing shows a white median band not reaching the costal margin. Beneath paler, the hindwing as far as the base white, at the anal angle spotted white. Panama to Colombia.

P. scurra *Hbn.* (177 h) is very similar; whereas in *stigma* the proximal white spot is situated above the red one, it is longer here, crescentiform and passes the red one outwardly. Beneath the anal angle is not spotted white. Brazil. — In f. **leucodesma** *Er.* (177 h) from Guiana the red inner-marginal spot is entirely absent.

P. herberti *G. & S.* is likewise similar, the lower white hyaline spot of the forewing, however, is very irregular, not square and extends into the cell. Described from Matto Grosso.

P. monostigma *G. & S.* is likewise allied, the forewing, however, is dark brown, and only the red spot is present, the two hyaline spots being entirely absent. Santa Martha.

P. empolaeus *Dbl. & Hew.* (177 g) is a somewhat larger species with 2 reddish-yellow spots in the middle of the costal margin and at the proximal angle of the forewing, and a white spot between them. The hindwing shows a more rounded creamy-white discal spot. From Brazil.

alaricus. **P. alaricus** Plötz (178 a) is likewise larger, without red spots, with three small subapical spots situate in a triangle, an oblong quadrangular spot in the cell, a small one above it and a somewhat larger one below it. From Bahia.

53. Genus: **Charidia** Mab.

Distinguished from the preceding merely by the thickened posterior tibiae and a shorter palpal terminal joint. Only one sexually dimorphous species.

lucaria. **Ch. lucaria** Hew. (177 g). This pretty, little species is well characterized by the figure. Guiana, Colombia, Bolivia.

54. Genus: **Atarnes** G. u. S.

Likewise similar to a *Paramimus*. The antennal club is longer with an obtuse apex; the 3rd palpal joint is short. The ♂ is without a costal fold. The posterior tibiae show 2 pair of spurs, but no hair-pencil. Only 2 very similar species:

sallei. **A. sallei** Fldr. (177 g) from Mexico to Costa Rica is a common, unmistakable species, black with a white median band forming on the lower radial vein an almost rectangular angle, and an orange-yellow spot therein at the proximal margin below the cell; in the marginal area the veins and folds are striped white.

servatius. **A. servatius** Plötz (177 g) is extremely similar, larger, darker, the veins of the marginal area very much finer, the white median band projects distally on the upper median vein and does not reach the proximal margin on the hindwing. From Pará.

55. Genus: **Zopyrion** S. u. G.

Very closely allied to the following genus *Timochreon* and distinguished by its more slender structure, longer though rounder wings. Antennal club is more abruptly flaved, the 3rd palpal joint longer; costal fold present in the ♂.

sandace. **Z. sandace** G. & S. (177 h). Upper surface monotonously greyish-brown with single small light dots. Fringes light yellowish-white, speckled dark. Beneath almost whitish, hindwing still lighter, watered brownish with 2 more distinctly prominent transverse lines which are more or less interrupted, and with an antemarginal row of crescents. Mexico to Guatemala.

evenor. **Z. evenor** G. & S. (178 b) is above very similar, but beneath more ochreous-yellow on the forewing with 2 indistinct, dark, antemarginal macular bands; hindwing likewise more brownish, the transverse markings much less coherent, the proximal one only consisting of 3 small spots. From Matto Grosso to Argentina (Salta).

satyrina. **Z. satyrina** Fldr. (177 h) is beneath quite similar to *evenor* in the colour, but the hindwing shows before the whitish distal margin high black moon-spots, in front of them the white marginal colour is separated from the brownish ground-colour by a darker shaded lunular line; the centre is crossed by an almost straight line from the costal angle to the proximal angle. Colombia.

56. Genus: **Timochreon** G. u. S.

Structure of the body rather robust. Antennal club only feebly thickened and gradually bent; 3rd palpal joint rather short. Apex of forewing pointed, costal fold absent. The posterior tibiae with 2 spurs and in the ♂ with a long hair-pencil.

satyrus. **T. satyrus** Fldr. (177 i) is above dark brown with a row of black spots before the distal margin of the hindwing and 2 indistinct lines before it. Beneath entirely resembling an *Euptychia*: greyish-brownish, distally somewhat more bluish, with 2 brownish postmedian transverse bands bordered darker, and before the black marginal line of the hindwing a series of black eye-spots, of which only the second from above is dull brownish. From Panama to South Brazil (Para, Matto Grosso).

doria. **T. doria** Plötz (178 b) is another species still more resembling *Euptychia*: above duller brown, the eye-spots of the hindwing more distinctly light-ringed, the second from above composed of 2 small, narrow spots. Beneath the disc of the forewing is light ferruginous-yellow; the marginal area light reddish-violet, proximal bordered by a whitish line. Eye-spots of hindwings ringed light yellow. From Mexico.

57. Genus: **Pholisora** Scdd.

Antennal club almost rectangularly flaved with an obtuse apex. Terminal joint of palpus slender projecting. Costal fold present; apex of forewing very round. Posterior tibiae with 2 pair of spurs.

catullus. **Ph. catullus** F. (177 h) is on both sides black with a faint marginal row and a somewhat more intense submarginal row of white dots; the latter is entirely absent on the hindwing. Beneath the dots are almost extinct.

The green larva with a black head lives on *Chenopodium*, *Amaranthus* and Labiates such as *Monarda*; it spins a leaf together with few threads in a cymbiform shape and feeds only at night. Common in the whole temperate North America.

Ph. mejicanus *Reak.* (177 h) is similar, the submarginal row of spots, however, is very much curved, and at the cell-end there is a minute white dot. In the ♀ the small spots are somewhat larger. Beneath there are mostly only 3 or 4 subapical dots; the colour is particularly on the hindwing lustrous slate-coloured black with darker veins. Palpi beneath white. Distributed from the south-western part of North America to Mexico.

Ph. smodora *Dyar* (177 i) is much larger with broader, rounder wings, with a somewhat browner tint; only the curved, submarginal row of spots and a tiny cellular dot are present. Beneath more brown, without markings, only on the hindwing there are towards the anal angle some small white scale-spots. The whole body is beneath white. West Mexico (Guerrero).

Ph. clytius *G. & S.* is smaller than *mejicanus*, the wings without any spots, the hindwing in the middle of the distal margin more produced. The different genitals prove the insect to be a separate species. From Mexico.

Ph. alpheus *Edw.* (177 i). Wings above blackish-brown, mixed with a somewhat lighter colour; on the forewing there are 3 subapical dots, a discal dot and between the median veins a whitish submarginal streak. Hindwings darker. The under surface is deep dark brown, on the hindwing scantily strewn with white irregularly marked. Palpi beneath whitish. From New Mexico and Arizona to Mexico.

Ph. libya *Seddr.* (177 i) is easily discernible from the other species by white fringes, and towards the apex especially in the ♀ a lighter, grey apex of the forewing. Hindwing beneath light grey mixed with a darker shade, with white discal spots and minute white marginal spots. Nevada to Arizona and California.

58. Genus: **Chiomara** *G. & S.*

Palpal terminal joint porrect or somewhat pendent; antennal club comparatively obtuse. Distal margin of forewing convex. Posterior tibiae with a rather dense fur, a hair-pencil and 2 pair of spurs.

Ch. mithrax *Mschlr.* (= *noctula* *Plötz*) (177 i). This well-known species is of a deep blackish-brown with a slaty-black, broad discal area, proximally bordered by a row of velvety black dots; a similar row of spots is situate farther distally. Beneath lighter brown, with a darkened basal part on all the wings. Mexico, Guatemala, Colombia to Brazil, Cuba.

Ch. punctum *Mab.* (= *basigutta* *Plötz*, *marthona* *Schs.*) (177 i) is very similar, mostly smaller, distinguished by a lighter bluish-grey, prominent postdiscal band and a very prominent black spot in the proximal third of the proximal margin. Widely distributed in South America.

Ch. silvia *Mab.* Size and exterior of *punctum*. Forewing blackish mixed with ashy-grey; near the base a broad, lilac-grey band with a thick, black dot in the submedian space; the following black band is pointedly broken in the cell, then follows a broad greyish-lilac band traversed by 2 black stripes; the black marginal area is crossed by a greyish-red dentate line. The red-brown hindwing shows 3 darker undulate lines. Beneath the forewing is proximally black, in the marginal third light red-brown with a lilac apical spot. Hindwing black, distal margin red-brown, with a black cellular spot and 2 black median bands, the proximal one of which is bordered with yellowish at the anal angle. Described from Bolivia.

Ch. gesta *H.-Schäff.* (= *blanda* *Plötz*, *invisus* *Btlr. & Drc.*) (178 a) is a smaller, variable, darker species, blackish-brown with indistinct darker transverse bands and a dull bluish-grey postdiscal band. Occasionally there are on the hindwing beneath whitish diffuse spots towards the anal part. From Mexico to South Brazil, in Cuba and Jamaica. — f. **gorgona** *Plötz* (178 a) is a lighter brown form from Guatemala with reduced black spots and bands. — f. **bigutta** *Prittiv.* (177 i, 178 a) with a somewhat different band-marking, distinctly speckled fringes of the hindwing, and beneath towards the anal angle with lighter whitish hindwings; it may be better regarded as a distinct species; described from Colombia.

Ch. asychis *Cr.* (= *dilucida* *Plötz*) (178 a) is a very different, extremely common species and very variable. Above greyish-brown, towards the base bluish-grey with a broad hyaline band through both wings; the uppermost spot of the band on the hindwing is bipartite; here there is in the cell another narrow, crescentiform spot, and there are lighter antemarginal macular bands. Widely distributed from Mexico to Argentina, and in the Antilles; specimens from St. Vincent are darker with more distinct spots on the wings beneath.

Ch. onorbo *Möschlr.* (178 a) very much recalls *asychis* which it also resembles a great deal in its size and shape of the wings. But beneath *onorbo* shows the basal area of the hindwing bluish-grey and sharply defined against the white discal band from which it is separated by a dark line, just like the dark marginal area. Above particularly the speckled marking of the distal half of the forewing deviates from *asychis*. Described from Surinam.

59. Genus: **Gindanes** *G. u. S.*

In the structure and exterior similar to the species of *Pythonides* of the *lugubris*-group and chiefly only distinguished by the peculiar shape of the wings. The apex of the forewing is cut off and the distal margin straightly extends down to the end of the lower median vein, where it is deeply indented and runs obliquely to the proximal angle; hindwing below the apex almost laciniformly produced. The posterior tibiae exhibit beside a hair-pencil 2 pair of spurs. Antennal apex somewhat longer and palpal terminal joint shorter.

brebisson. **G. brebisson** *Latr.* (= *brebissonii* *Ky.*, *phagaesia* *Hew.*) (178 c) is above light brown with a deep brown velvety spot in the middle of the forewing and smaller ones behind it, at the proximal angle of the forewing and at the apex of the hindwing the distal margin of which, being situate below it, is dusted bluish-white. The forewing exhibits besides at the exterior edge of the discal spot one large and several small hyaline spots. Beneath the hindwing is light blue, at the costal margin and apex spotted somewhat blackish-brown. From Colombia and Brazil.

panaetius. **G. panaetius** *G. & S.* (178 c) is probably only the northern form of the preceding and merely distinguished by the ochreous-yellow, not blue under-surface of the hindwing, only the anal part being somewhat dusted bluish-white. From Nicaragua and Panama.

brontinus. **G. brontinus** *G. & S.* (178 c) is of a much darker brownish-grey, the hyaline spots are much more reduced, and the dark discal spot is narrowed into a streak; instead of them there is a broad, dark antemarginal band. Under surface dark brownish-grey. Apparently only in Nicaragua.

extensa. **G. extensa** *Mab.* It is doubtful to me, whether this species being described as *Pterygospidea* belongs hereto. The wings are described to be yellowish-grey, forewing at the proximal angle deeply excised. Margin brown, proximally dentate. 3 subapical hyaline dots in a brown band, between the upper median vein and the middle radial vein a bipartite hyaline spot and below it a similar one in the submedian space; at the lower cell-angle there is another hyaline dot in a brown spot. Hindwing below the apex very much gnawed out, at the middle radial vein with a long booth with 3 faint, brown, small bands. Wings beneath light blue, the darkest at the base of the hindwing with a black border as far as the tooth. Expanse of wings: 27 mm. Hunyabamba.

60. Genus: **Heliopetes** *Billb.*

It contains a number of rather homogeneous insects offering great difficulties as to the synonymy. All of them are above more or less purely white, mostly with a black apex of the forewing. The medium-strong antennal club is bent, the palpi are porrect, the 2nd joint covered with hairy scales, the terminal joint rather slender, conical. Costal fold present; posterior tibiae beside two pair of spurs with a hair-pencil.

domicella. **H. domicella** *Erichs.* (= *willi* *Plötz*, *aconyta* *Plötz*, *adepta* *Plötz*) (178 c) is the darkest species with a broadly blackened basal and distal part of the wings, so that only a broad white discal band is prominent and the species almost looks like a *Hesperia*. Beneath similar, but duller, more olive-grey, particularly the basal part of the hindwing is light and only defined towards the white discal band by an olive-grey band pointedly bending inward in the cell towards the base. From Arizona and Mexico through almost the whole of South America (Colombia, Guiana, Brazil to Argentina).

arsalte. **H. arsalte** *L.* (178 c, d) is almost entirely white, only towards the apex along the ends of the veins on the forewing there appear black rays; fringes speckled dark; in the ♀ the apex of the wing is somewhat more extensively smoked blackish, with a white, oblique subapical band. Beneath the veins are finely darker, on the hindwing the lower median vein is somewhat darker. Widely distributed from Mexico to Paraguay and in Jamaica, everywhere very common.

petrus. **H. petrus** *Hbn.* (= *niveus* *Hbn.*, *laginia* *Hew.*, *bianca* *Plötz*, *janice* *Ehrm.*) (178 d) differs by a much broader and blacker apex of the forewing with a smoked subapical band in it; the margin of the hindwing is likewise broader black. From the following *alana* it differs by the absence of the dark spots in the middle of the hindwing beneath. From Nicaragua through Colombia, Guiana to the Amazon.

alana. **H. alana** *Reak.* (= *adusta* *Plötz*) (178 d) resembles *petrus* above. Beneath on the ochreous-brown hindwing behind the cell and before the margin between the median and subcostal veins more or less distinct brownish spots. From Mexico to Brazil and Paraguay, everywhere common. — As f. **ligania** (178 e) *Plötz* figures a large, strong form with a very broadly blackened apex of the forewing without a light subapical band and beneath only one spot between the median veins of the hindwing, no patria being stated. — f. **marginalis** *Plötz* (178 d) from Peru is probably a form of it with a broadly blackened margin of the hindwing.

nivella. **H. nivella** *Mab.* (= *nivea* *Scddr.* nec *niveus* *Hbn.*, *orbiger* *Mab.*, *eulalia* *Plötz*) (178 d) has above a narrowly blackened distal margin growing wider in the apex of the wing with traces of subapical spots, one

of which projects above the upper radial vein to the margin; on the hindwing there are before the fine black marginal line small dark spots on the ends of the veins. Beneath the hindwing shows a rather broad black marginal band which is interrupted by white below the upper radial vein; near the base there are yet some dark diffuse spots. Mexico to Colombia and Brazil. — **maimon** Plötz (178 e) is probably a small, above entirely white form of it from Guiana.

H. macaira Reak. (= *oceanus* Edw., *locutia* Hew.) (178 e) is smaller, above the same, beneath the hindwing is smoked brownish except the anal part, the marginal band is not interrupted and distally extending in a coppery brown, the basal spots are larger. Arizona to Panama. — f. **jason** Ehrm. is a pale, thinly scaled form from Venezuela with beneath extinct basal markings, of a slender structure.

H. cnemus G. & S. (178 e) is above much more intensely marked with broad blackish-brown marginal bands; in the broad apex of the forewing there are 4 or 5 small, narrow, white subapical spots. Beneath almost like *nivella*, but the apical part of the forewing is more broadly marked black, whereas the marginal band of the hindwing is feebler. Only from Mexico.

H. laviana Hew. (= *leca* Btlr.) (178 e) is mostly rather large with a faintly stunted, broadly blackened apex of the wing, with subapical, apical and marginal white spots. Beneath in the apex of the forewing 2 larger, olive-brown spots. Hindwing more or less extensively dusted olive yellowish-grey, with a broad, dark, basal transverse band which in the cell returns to the base in an acute angle, and a broadly darkened marginal part proximally bordered by an almost straight, darker, inside white line extending from the costal angle to the anal angle. The development of the marking, however, is very variable. Mexico to Argentina, everywhere very common. — f. **ericetorum** Bsd. (178 f) is a very light form from California.

H. sublinea Schs. is unknown to me, but it apparently approximates *laviana* very much; distinguished by a black cell-end streak and white fringes speckled with black, as well as more distinctly black veins in the apical half also beneath. Hindwing of a purer white with a broad olive-grey marginal part, a dark apical spot and a darker marginal band below the lower radial vein; the broad, proximal olive-grey band extends from the costal margin to the lower median vein. Expanse of wings: 33 mm. Described from Mexico (Orizaba).

H. purgia Schs. must be likewise similar to *laviana* (178 e); above marked just like it, but below the lower radial vein there appears a larger, white marginal spot. Fringes dark grey. On the hindwing the veins are partly black, beside a black marginal line and black marginal lunae there is a subterminal line interrupted between the radial veins; base, and proximal margin of the hindwing dusted black. Fringes of hindwings white speckled with black. Beneath marked light reddish-grey, forewing with a black cell-end streak; hindwing yellowish-white with black veins, a broader and darker subterminal band; the proximal band as in *laviana*, the inner-marginal area remains broadly white, unmarked. Expanse of wings: 30 mm. Castro (Paraná).

H. pastor Fldr. (= *omrina* Btlr.) (178 f). I consider to be a distinct species; smaller than *laviana*, without traces of a stunted apex of the wing; owing to the more distinctly marked veins the dark marginal area looks striped. Marginal part of the hindwing more intensely marked. Beneath of a purer white, markings in the marginal part likewise more radiately arranged and with a decidedly yellowish-green tint: basal band feebler, in the middle interrupted. Guiana to Brazil. — In Bolivia there occurs a still much more intensely marked form which I denominate **intensa** form. nov. (178 f). Above particularly on the hindwing in the costal half there appears a postdiscal band angularly projecting distally and being also present beneath; the subbasal band is deep olive-brown and complete. — f. **pampina** Plötz (178 f) from Buenos Ayres, in contrast with it, is much lighter, above much more extensively white, and beneath on the hindwing only the basal band is rudimentarily noticed.

H. leucola Hew. (178 f). I dare not decide whether this is a distinct species or only an intensely marked form of *petrus* (178 d) from which it is not discernible above, whilst beneath the hindwing is of a more intense yellow colour with prominently black veins and internerval stripes, without any dark antemarginal spots. From Minas Geraes.

H. concinnata Mab. seems to be allied to *laviana* (178 e); distal margin of wings more intensely marked black with small, white submarginal and very small marginal spots which are absent between the median veins. On the hindwing beneath the upper part of the basal band is absent. Described from Rio Grande do Sul.

H. figara Btlr. Wings above white, forewing at the base, costal margin, apex and distal margin brown; an apical, white oblique line is parted into 5 dots by the veins crossing it. Hindwing at the proximal and distal margins brown, veins (except the base of the costa) black, fringes white speckled with brown. Body brown, head and prothorax spotted white. Wings beneath white, veins in the distal half black; apex between the veins white. Otherwise as above, but lighter. Body white. 1.6 inch. Exact patria not stated.

61. Genus: **Thanaos** Bsd.

Rather closely allied to the preceding genus; the basal palpal joints are clad with long hair, the conical terminal joint is bent forward. Costal fold very strongly developed. Hindwing in the basal quarter of its costal

margin somewhat angular, the fringed posterior tibiae exhibit 2 pair of spurs. Numerous species of a very dark colouring in contrast with the preceding genus, the principal range of which is situate in North America.

- brizo.* **Th. brizo** *Bsd. & Lec.* (178 f). Above lilac-grey with darker macular bands, the postdiscal band very regularly formed of small ring-spots, appearing also beneath as minute light yellow spots. Hindwing with a row of yellowish submarginal dots being more distinct beneath. Atlantic States, Colorado, Arizona. The larva lives on oaks, Galactia and Baptisia.
- icelus.* **Th. icelus** *Lintn.* (178 g) is much smaller, the postdiscal area much lighter than the rest of the wing; the yellowish dots above and beneath do not form any regular rows, but are more dispersed. The range is the same. The larva lives on foliage-trees.
- somnus.* **Th. somnus** *Lintn.* (178 g) is somewhat larger than *icelus* and a very dark species so that only the submarginal row of light dots is more distinct. From Florida.‡
- lucilius.* **Th. lucilius** *Lintn.* (178 g) is a smaller, very common species, blackish-brown with darker macular bands and minute light submarginal spots; discernible from the very closely allied *pacuvius* (178 h) by its lighter, dark-marked hindwing with a submarginal band of light spots, in which near the apex 2 spots are far removed towards the base. The likewise very closely allied *zarucco* has much more intense purple-grey dusting on the wings and more regular macular bands on the forewing. Atlantic States. — f. *lilius* *Dyar* is very similar, larger, as large as *zarucco*, more mixed with brown, particularly a brown spot at the cell-end is very prominent, being interrupted by the straight, dark cell-end line. The markings are more blurred and not so much contrasting as in *zarucco*. A geographical race from British Columbia, Washington, California. Flies in May, June, and again in August.
- persius.* **Th. persius** *Seddr.* (178 g) is much more monotonous and mostly darker than *lucilius*, but very variable in this respect. Apex of forewing a little more pointed than usually with 3 distinctly prominent, small subapical spots. The hindwing scarcely shows traces of the light submarginal dots. Atlantic States and Rocky Mountains. Larva on willows.
- ausonius.* **Th. ausonius** *Lintn.* is the smallest of all the *Thanaos*-species; by the absence of the white subapical spots it approximates *brizo*, otherwise it is more closely allied to *zarucco*. The submarginal band composed of small, oblong, black spots is twice very much bent. The transverse vein is conspicuously marked brown. Instead of the discal band being coherent in the other species there are here 3 small, oblong, blackish-brown diffuse spots. The species was established according to a single ♂ from Center (Colorado) that was taken on May 12th 1871.
- afranius.* **Th. afranius** *Lintn.* (178 g) is a very small species with a blackish-brown, grey-marbled forewing showing 4 small, oblique subapical dots and one behind the cell. Hindwing dark blackish-brown with a double row of small submarginal dots being above very indistinct, beneath more prominent. Colorado, Arizona.
- zarucco.* **Th. zarucco** *Luc.* (= *martialis* *Seddr.*) (178 g) very much resembles *lucilius*, but it is much more dusted with a purple or lilac-grey, and thereby lighter, and the macular bands are more regularly arranged. The submarginal spots on the hindwing are more irregular and more blurred. Atlantic States, Colorado, also in Cuba. The larva lives on Indigofera and Amaranthus.
- juvenalis.* **Th. juvenalis** *F.* (= *juvenis* *Hbn.*, *costalis* *Dbl. & Hew.*, *ennius* *Seddr.*, *concolor* *H.-Schöff.*) (178 g). A much larger species, light brown, marbled by black macular bands and with a complete, postdiscal row of small hyaline spots bordered by small black sagittiform spots; also at the cell-end there are two. Atlantic States and Rocky Mountains as far as Missouri and New Mexico. The larva lives very polyphagous on oaks and Papilionaceae.
- petronius.* **Th. petronius** *Lintn.* (178 g) is similar, especially in the basal half darker, more contrasting; the band of hyaline spots does not extend so far to the proximal margin. The hindwings are also much darker. Florida.
- horatius.* **Th. horatius** *Seddr.* (= *virgilius* *Seddr.*) (178 h). Marked as *juvenalis* and with the same band of hyaline spots, but only half its size, and of a very much lighter ground-colour. From the southern Atlantic States.
- terentius.* **Th. terentius** *Seddr.* (= *ovidius* *Seddr.*). Of this species we find in the literature accessible to us only a very detailed description of the ♂ genital armature, and for this reason we cannot make any particular statements as to its exterior. It originates from Florida.
- propertius.* **Th. propertius** *Lintn.* (178 h) is likewise somewhat smaller than *juvenalis*, very much like it, darker, greyer, more monotonous, the small postdiscal hyaline spots very small. Owing to the distal margin running somewhat more obliquely, the course of the band is more oblique, too. Hindwings darker. Pacific States.

Th. naevius *Lintn.* (178 h) is smaller, with narrower and more pointed wings than *petronius* which the species approximates; the postdiscal hyaline band is likewise shortened and also contains only 2 discal spots below the subapical band. Behind the middle of the costal margin lighter spots. Only known from Florida. *naevius.*

Th. pacuvius *Lintn.* (178 h) is much smaller, very contrastingly marked on a grey ground, the small hyaline spots of the postdiscal band, being formed as in the preceding species, are very small. Hindwing almost entirely black, its fringes in the anal half purely white. Colorado, Arizona and Mexico. *pacuvius.*

Th. tatus *Edw.* is established according to a single ♂. It is discernible from the other species with white fringes of the hindwings by the purely brown colour of the marginal area of the forewing without whitish-grey scaling; the usual, oblong, black marginal spots exhibit distally bluish-white bordering, so that a very conspicuous, white-dentate line is produced. From Arizona. *tatus.*

Th. parkeri *Weeks* is said to be most closely allied to *tatus*. Above dark brown, slightly dusted with grey, with a postdiscal band irregularly strewn with grey, extending from the costal margin to the lower median vein; 4 small, white, hyaline subapical dots. Hindwings dark brown with traces of lighter submarginal diffuse spots. Beneath dull brown, the submarginal diffuse spots of the hindwing more distinct. From Venezuela (Suapure). *parkeri.*

Th. clitus *Edw.* (178 h) is much larger and darker than *pacuvius*, often behind the middle of the costal margin with a brighter spot. Hindwing almost monotonously black with broad white fringes as far as the apex. Arizona and New Mexico. *clitus.*

Th. funeralis *Seddr.* (= *australis* *Mab.*) (178 h). This species being widely distributed as far as South America is extraordinarily similar to *clitus*, on an average smaller, greyer, darker, with somewhat narrower forewings. The following species are neither easily discernible, chiefly by the difference of the genitals. In *funeralis* the tegumen exhibits on the under surface 2 short, downwards posteriorly curved hooks; the valves are very asymmetrical, the right one has undulate edges and exhibits on its distal edge 2 upturned, obtuse appendages. From California, Texas and Arizona through Mexico to Guatemala; Colombia. *funeralis.*

Th. tristis *Bsd.* is externally scarcely discernible from *funeralis*, mostly somewhat larger. The forewings are somewhat less pointed. On the under surface of the tegumen are 2 long hooks being downwards anteriorly curved, the right valve shows at its distal edge a very bristly, boss-shaped appendage. California to Mexico. *tristis.*

Th. maestus *G. & S.* from Arizona and Mexico (Puebla) is only separable by the different genitals. The tegumen is similar as in *tristis*, but the right valve appears as a distally turned, ensiform hook. *maestus.*

Th. albomarginatus *G. & S.* (178 h) is recognizable by its large size and by the white fringes of the hindwing being particularly broad at the anal angle, beneath also by the white border before the fringes. Common from Mexico to Colombia. *albomarginatus.*

Th. diogenes *Plötz* (178 i) is the most similar to *petronius* (178 g), but somewhat smaller, with narrower wings and a more oblique distal margin, of a somewhat darker colouring, the postdiscal hyaline spots are minute, below the subapical ones there is only one small hyaline dot. Described from Cuba. *diogenes.*

Th. heteropterus *Plötz* (178 i) is not dissimilar to *brizo*, but of a purer bluish-grey, and it has 3 conspicuous, white, subapical hyaline dots. Hindwing darker brown without the yellowish submarginal dots, instead of them with a darker submarginal band. From Brazil (Chapada). *heteropterus.*

Th. austerus *Schs.* is unknown to me. Above dark brown, strewn with dark grey, little prominent scales, a discal band, a spot at the cell-end, bent round it the postdiscal band; distal margin broad dark grey, in it a dark subterminal line; marginal line brown, base of fringes grey; the grey markings are partly bordered by darker brown fine lines. The dark brown hindwing is lighter at the distal margin. Expanse of wings: 36 mm. Peru. *austerus.*

Th. mülleri *sp. nov.* (178 i) is most similar to *brizo*, also in the shape of the wings and the size. The blackish-brown ground-colour is very much strewn with lighter or darker whitish-grey or bluish-grey scales; in and behind the middle there are 3 fine, black, lunar transverse lines and in the middle of the cell a spot; before the brownish-grey fringes there is a blackish marginal line. Hyaline dots entirely absent. Hindwing monotonously blackish-brown with snow-white fringes being blackened at the apex. Beneath on the hindwing fine, white anteterminal and thicker white terminal dots. According to 1 ♂ from Mexico (Esperanza) in the Coll. DRAUDT. *mülleri.*

Th. lacustra *Wright* (178 i) is apparently allied to *mülleri*, but of a much more monotonous brownish-grey, not dusted so blue, and it has quite brownish-grey, not white fringes on the hindwings. Also beneath the submarginal and marginal dots on the hindwing are extinct and yellowish-grey. From California. — **pernigra** *Wright*, likewise from California, seems to be almost the same, but it is reported to have 3 small white subapical dots and to be smaller. *lacustra.* *pernigra.*

62. Genus: *Melanthes* *Mab.*

Antennal club shorter and more pointed than in *Thanaos*, terminal joint of the palp more slender. Distal and proximal margins broadly rounded. Posterior tibiae almost bare with 2 pair of long spurs. Costal fold present. 3 large forms from the West Indies.

brunnea. **M. brunnea** H.-Schüff. is extremely allied to the following, it is smaller with smaller hyaline spots.
jamaicensis. Described from Cuba. — f. **jamaicensis** Mschlr. (178 i) is probably only a local form from Jamaica. Large, monotonously blackish-brown above and beneath with 3 minute subapical dots and 2 more near the margin below them.

zephodes. **M. zephodes** Hbn. (178 i) has nothing to do with *Ephyriades otreus* Cr. as was erroneously considered hitherto. Very similar to the preceding, somewhat smaller, and with narrower wings, blackish-brown with 5 minute, white subapical dots and 2 more proximally placed dots below them, and another one in the upper cell-angle. Beneath somewhat lighter with traces of darker transverse bands across the hindwing. The ♀ has much larger hyaline spots and 2 faded dark transverse bands before and in the middle, between which the ground is partly dusted bluish-grey. Cuba, Bahamas.

63. Genus: **Brachycoryne** Mab.

Antennal club with an obtuser end, shaft short, not curled. Costal fold very strongly fringed with long hair-scales, inside bare. The middle and posterior tibiae exhibit long slender hair-pencils, the posterior tibiae 2 pair of short spurs, the anterior tibiae with end-spurs. Only one species:

arcas. **B. arcas** Drury (= flyas Cr., velasquez Luc.) (178 i). Large, monotonously dark blackish-brown, above without any marking. Beneath somewhat lighter, at the proximal margin of the forewing yellowish-grey with traces of a darker postdiscal band. Hindwing with 2 antemarginal, faded, lighter, dentate bands. Panama (Chiriqui), Hayti, St. Thomas, Cuba.

64. Genus: **Hesperia** F.

This genus being distributed across the whole world except Australia has been dealt with more at large in the palearctic part. Briefly worded, the antennal club is rather obtuse, the palpi are erect, the second joint clad with hair-scales, the terminal joint slender, obliquely upturned. Forewing with or without a costal fold, posterior tibiae with 2 pair of spurs with or without hair-pencils. The homogeneousness of the American species is still very uncertain; there are probably half a dozen species at most.

a) With a costal fold and hair-pencil (*Scelothrix* Rmb.).

syrichtus. **H. syrichtus** F. (= orcus Cr., oileus Ww., tartarus Hbn.) (178 k) is extremely variable as most of the other species. Above brownish-grey verging into black, particularly towards the base very much haired whitish-grey with white macular bands covering more or less the whole surface of the wings. Beneath the hindwing is white with 2 irregular light grey or brownish dentate bands which are finely bordered with black, and with high marginal bows. Most widely distributed from Mexico to Paraguay, everywhere common.

centaureae. **H. centaureae** Rmb. (= wyandot Edw., ruralis Bsd.). This species figured in the palearctic part (Vol. I t. 86 a) occurs also in the northern Atlantic States. The white spots are much smaller than in *syrichtus*, the white hairing more scanty, beneath on the hindwing the bands are darker, more coherent.

philetas. **H. philetas** Edw. resembles *montivaga* (178 k) above, but it has smaller spots. The hindwing beneath is quite different white with a yellowish tint, basal and discal areas more whitish, without a discal band, scantily streaked brown; 3 small streak-spots at the costal margin are more distinct; behind the middle are 3 rows of most minute spots, the most proximal row only composed of small brown dots; in the smoky brownish marginal area minute, white moon-spots. Described according to a specimen from West Texas.

scriptura. **H. scriptura** Bsd. (178 k) is smaller than *centaureae*, the hindwing quite unspotted except a double white discal spot; fringes more purely white. On the forewing the submarginal macular band seems to be more pointedly broken below the apex. California, Arizona, Montana.

bocchoris. **H. bocchoris** Hew. The description of this Bolivian species was not accessible to us.

fulvovittatus. **H. fulvovittatus** Btlr. resembles above *americanus* (179 b) except the more strongly smoked discal band of the hindwing. Beneath the hindwing is white with 4 orange transverse bands, an indistinct one at the base, a very irregular, oblique one behind the basal third, a curved, dentate one through the middle, being here and there bordered with brown and being separated from a narrow marginal band only by a row of small, white moon-spots; proximal margin broad white. From Chile.

b) With a costal fold, but without a hair-pencil (*Pyrgus* Hbn.).

H. montivaga Reak. (= *tessellata* Seddr., *communis* Grt., *adjutrix* Plötz, *albescens* Plötz, *varus* Plötz) *montivaga*. (178 k) differs from the very similar *syrichtus* by a darker, less grey-haired base of the wings, and the marginal row of spots almost disappears. Distributed from Arizona and Florida to Nicaragua, everywhere common. f. **crisia** H.-Schüff. (178 k) is probably to be taken as a smaller insular form from Cuba with smaller spots, *crisia*. which are less coherent. — f. **occidentalis** from Arizona and Texas is reported to be smaller and whiter. *occidentalis*. It was asserted of late that *montivaga* is synonymous to *syrichtus*, in which case the species would have to be denominated *tessellata*.

H. caespitalis Bsd. (= *ricara* Edw., *petreius* Edw.) (178 k) looks very much like *centaureae*, on the *caespitalis*. hindwing the postdiscal band of white spots is broader and more coherent. Beneath the hindwing has a decidedly ferruginous-brownish tint with large white spots. California, Oregon, and Nevada.

H. xanthus Edw. (179 a) is extremely similar to *caespitalis*, the white macular bands still broader, *xanthus*. especially on the hindwing. Under surface much paler, almost as in *montivaga*. Hitherto only known from Colorado.

H. americanus Blch. (179 b) is a larger, stronger species from Chile; the white discal band of the *americanus*. hindwing is especially broad, fringes scarcely speckled. Beneath the hindwing is very differently marked, the bands are very narrow, very dentate, the proximal one defined on the lower median vein, the costal-marginal part almost straight and not dentate. — In f. **bellatrix** Plötz (178 b) from Argentina the bands of the hindwing *bellatrix*. beneath are broader, more coherent.

c) Without a costal fold and without a hair-pencil (*Battus* Scop.).

H. notata Blch. (= *insolatrix* Plötz, *lycurgus* Plötz) (179 a) is extremely similar to *syrichtus* and *notata*. *montivaga*, but the band of the hindwing is generally narrower, less curved. Very common from Mexico to Argentina. — f. **valdivianus** Phil. (179 b) is probably also only a form of it from Chile with a faded, smoky *valdivianus*. brownish band of the hindwing without the white discal spot. Beneath the surface is of a more yellowish tint, the transverse bands show a reddish-brown colour. — f. **veturius** Plötz (179 a) is presumably a form with much *veturius*. smaller white spots.

H. trisignatus Mab. (= *valdiviana* Reed) (179 a) is presumably no form of *notata*, but a distinct *trisignatus*. species. Above very dark owing to the great reduction of the white spots; on the hindwing a large, rounded, white discal spot is very conspicuous, besides there is only an antemarginal row of spots. Beneath very much dusted brownish, in the ♀ much more intensely transversely watered dark, with two interrupted, greyish-black nebulous bands in and behind the middle. Argentina and Chile.

H. emma Stgr. (179 a, b) is a rather large, broad-winged species, above black with 2 rows of white *emma*. spots in the middle and anteterminally; on the hindwing there is a large, square postmedian spot and a faded row of whitish dots before the distal margin. Fringes above and beneath white speckled with black. Beneath the forewing is blackish, at the costal margin and in the apical part light yellowish-white. Hindwing beneath pale yellow with 2 rows of larger black markings in the middle and in the distal part, and a number of small black strigiform spots at the costal margin and some small, dispersed dots. From Cocapata (La Paz in Bolivia).

H. cuzcona sp. nov. (179 a) may be a smaller form of *emma*. Shape of wings much narrower; above *cuzcona*. the white spots are a little more prominent, the wings towards the base more intensely haired whitish-grey, the fringes very broadly speckled white and black, the spot of the hindwing oblong quadrangular. Beneath almost purely white, forewing in the disc faintly dusted blackish; the transverse bands on the hindwing very narrow, composed of irregular, small, jet-black spots with single brownish grains of dust between them; fringes of hindwings beneath purely white, unspotted with thick black dots before them on the ends of the veins. From Peru (Cuzco).

H. archia Dyar is allied to *emma* (179 a, b). Above brown with yellowish-white fringes speckled with *archia*. brown, base and marginal area scaled yellowish; forewing with a quadrangular cell-spot and some more spots, like in *emma*. Hindwing with a yellowish strigiform spot at the cell-end and light dusting behind it and an antemarginal row of minute light spots. Forewing beneath as in *cuzcona*, hindwing light ochreous, strewn dark, with 2 rows of blackish, rounded quadrangular spots, as in *emma*. Peru.

65. Genus: **Celotes** G. n. S

Resembles the preceding genus, the antennal club is more slender. Costal fold present: the terminal joint of the palp is perfect, almost somewhat pendent. The posterior tibiae beside 2 pair of spurs exhibit a strong hair-pencil. Only one species:

C. nesus Edw. (= *notabilis* Streck., *radiatus* Plötz) (179 a) is distinguished from all the American *nesus*. species by the alternately light and dark radiary rays, and an unmistakable species. Texas to Mexico.

Subfamily: **Pamphilinae** Wts.

Group A.

Antennae with a bent, gradually tapering club. Terminal joint of the palp moderately long, correct. ♂ forewing in the American species without a stigma.

66. Genus: **Butleria** Ky.

This genus which was formerly combined with the following by the name of *Butleria* now only contains yet some species from South Chile of a characteristic exterior. Antennal club rather obtuse, palpi shorter, beneath hairy. Forewing at the base convex with an obtuse apex. Posterior tibiae with one or two pair of spurs.

bisexguttata. **B. bisexguttata** Phil. (179 c) is above blackish-brown with 6 minute orange spots which are in the ♀ partly larger and increased by two; the ♀ besides exhibits behind the cell of the hindwing a larger, roundish orange spot. Beneath the forewing is blackish, at the costal margin and apex red-brown as the hindwing, the latter with a broader, blackish discal shade and an undulate marginal band. It flies in dense forests in South Chile.

aperta. **B. aperta** Plötz (179 c) is allied to the preceding. Above dark blackish-brown with 3 small yellow discal spots arranged in a triangle, and 3 small subapical dots. Hindwing unmarked. Beneath the costal half of the forewing, the costal margin and the distal-marginal third of the hindwing are red-brown, on the hindwing 2 undulate, dark submarginal lines. Patria not stated.

valdivianus. **B. valdivianus** Phil. (= *exornatus* Fldr.) (179 c) is above much more intensely spotted yellow, especially in the submedian space, and the hindwing shows a submarginal row of yellow dots; fringes yellow. Beneath the forewing is yellow, spotted black, the hindwing more brownish-red with 3 transverse rows of silvery white spots partly bordered with black. Chile.

flavomaculata. **B. flavomaculata** Blch. (= *vicina* Reed., ? *paniscoides* Reed.) is a not quite certain species, it seems to be smaller than the preceding, but otherwise very much like it, easily discernible by yellow instead of silvery white spots beneath. Probably also *paniscoides* Blch. belongs hereto, the description of which is too insufficient as to allow its identification. Chile.

facetus. **B. facetus** Plötz (179 b) is allied to *flavomaculata*. Above black with numerous small yellow punctiform spots and a larger one at the cell-end. Hindwing with a light discal diffuse spot; fringes yellow speckled with black. Beneath the black, yellow-spotted forewing exhibits a reddish-yellow costal margin and distal margin. Hindwing reddish yellowish-brown with a large trisected, Isabel-coloured spot in the inner-marginal area, 2 small ones in the basal area and one at the costal margin above them. From Argentina and Chile.

polyspilus. **B. polyspilus** Fldr. (179 b, c) is again difficult to identify. It is somewhat larger, blacker, the discal spot of the hindwing larger, fringes of a purer yellow. Hindwing beneath lighter reddish-yellow, without any black markings, so that the white spots are situate directly on the reddish ground. This species, according to ELWES, flies more on open grass-plots in Argentina and Chile.

paniscoides. **B. paniscoides** Blch. (= *cauquenensis* Reed.) is a doubtful species which, as was mentioned above, probably is synonymous with *flavomaculata*, or perhaps also belongs to *facetus*, both of which exhibit yellow instead of silvery white spots on the hindwing beneath. Stated from Chile.

fruticolens. **B. fruticolens** Btlr. (= *tripunctatus* Mab.) (179 c) is a somewhat larger, most variable species. Above black, on the forewing with 4 to 9, on the hindwing with 2 to 4 small orange spots. Beneath the forewing is blackish, at the costal margin and apex reddish-yellow with the spots of the upper surface; hindwing orange, in the disc lighter yellow, at the proximal margin blackish, between the two colours a whitish ray. The forms denominated by BUTLER: *tractipennis*, *quadrinotatus* and *pulcher* only differ by the number of the small yellow spots. Chile, rising up to 4000 ft., and varying according to ELWES more in the maritime districts than in the mountains.

philippii. **B. philippii** Btlr. is very closely allied to *fruticolens*, differing only by a silvery stripe on the hindwing beneath. Apparently rare and hitherto only found in the Province of Valdivia.

ritus. **B. ritus** Plötz (179 c) is likewise closely allied, considerably larger with much larger yellow spots and two silvery stripes on the hindwing beneath with 3 silvery spots between. Hindwing much darker, only at the costal margin slightly yellow. From Chile.

sotoi. **B. sotoi** Reed. is likewise a very rare species very closely allied to the preceding. It differs by the bases of all the wings being strewn with yellowish, and a silvery white spot on the hindwing beneath. From South Chile, flying in dense forests.

67. Genus: **Dalla** Mab.

Antennal club with a longer point than in the preceding genera, palpi somewhat longer, especially the terminal joint slender. Forewing at the base not so convex. Posterior tibiae fringed with 2 pair of spurs. Numerous species mostly marked black and reddish-yellow.

D. cypselus *Fldr.* (179 c, d) is above blackish-brown with 4 yellowish-white discal spots on the forewing and 3 small subapical dots; of the former a small one is in the cell-end, 2 larger, separated ones below it and the 4th outside of them somewhat below the apical dots. Hindwing with an oval, somewhat reniform, orange discal spot, and towards the anal angle with orange fringes. Beneath more chestnut-coloured, the submedian spots of the forewing broadly united, towards the proximal margin of a deeper yellow; at the anal angle of the hindwing only a minute yellow diffuse spot. Colombia. *cypselus.*

D. frater *Mab.* (= *mesoxantha* *Plötz*) (179 d) is very similar, mostly larger, the uppermost submedian spot broadly flown together with the cellular spot which is larger here; beneath at the anal angle of the hindwing a larger orange spot. Venezuela, Colombia. *frater.*

D. virius *Mab.* is larger than *cypselus* (179 c, d), the spots on the forewing are of a deeper yellow, the cellular spot is larger, touching the quadrangular spot below it. The orange spot of the hindwing is somewhat indented at the proximal margin, the fringes are dark brown. Beneath the discal spots of the forewing form an angled band as far as the costal margin. Zamora (Ecuador). *viri.*

D. gelus *Mab.* (*vicina* *Mab.* i. l.) (179 d) is somewhat smaller than *cypselus* and *viri*. The spots on the forewing are the same, but somewhat larger and whiter, the two lower discal spots almost touch each other, the cellular spot is much smaller, placed near to the costal margin. The spot on the hindwing is likewise lighter yellow, larger, rounder. The hindwing beneath exhibits at the costal margin 2 additional yellow spots near the base and behind the discal spot, a third is situate at the anal angle. From Bolivia. *gelus.*

D. genes *Mab.* is larger than *cypselus* (179 c, d). Forewing jet-black with 3 subapical dots, the median one being minute, and 3 discal spots; that in the cell small, more remote from the others, light yellow; the spot in the submedian space is entirely absent. The spot on the hindwing is large, oval, orange, on the veins prolonged; fringes ferruginous. Beneath ferruginous, at the proximal margin of the forewing blackish. Hindwing reddish-brown, the discal spot blurred, only little lighter than the ground, bordered by 2 broken lines of a dull brown; proximal margin blackish; at the ends of the veins one black dot each. Zamora (Ecuador). *genes.*

D. ticias *Mab.* (179 d) is allied to the following species, but on the hindwing it resembles more *cypselus* by the oval spot. Discal spots in an oblique line, the two lower ones united, above them a streak in the cell, which may also be absent. Hindwing with an orange discal spot. Forewing beneath at the apex and at the costal margin red-brown, otherwise blackish; the discal spots are flown together into a very large one; hindwing reddish-brown, the spot not distinctly defined, traversed by 2 or 3 red-brown lines. Bolivia. *ticias.*

D. caenides *Hew.* (179 d) is very similar, the spot of the hindwing longer, the fringes more red-brown, beneath the discal spot of the hindwing is more sharply defined, not traversed by lines. Venezuela, Colombia. *caenides.*

D. connexa *sp. nov.* (179 e) is allied to *caenides*; on the forewing the triangular cell-spot forms a large quadrangle with the triangular spot below it, being diagonally parted by the median; at the distal upper angle another small triangular spot is connected with the apex, subapically there are 3 minute spots, all of them orange like the very large, oval, towards the base pointed spot on the hindwing; fringes at the anal angle orange. Beneath the apex of the forewing is reddish-grey, the discal spot very large, extended to the costal margin and proximal margin. Hindwing reddish brownish-grey, at the proximal margin blackish, in the disc strewn with yellow. Bogotá. *connexa.*

D. monospila *Mab.* Forewing blackish-brown, 3 united subapical dots, the 3 orange discal spots combined to one inclusive of a cellular streak, only separated by the veins, the distal one somewhat lighter. Hindwing black with a large ferruginous orange discal spot, equally broad and long, distally dentate. Fringes red-brown. Beneath like the preceding, the discal spot clear, the proximal margin blackish. Bolivia, Colombia. *monospila.*

D. cypria *Mab.* (179 d) is larger, forewing scarcely different; the spot of the hindwing very long, removed near to the costal margin. Fringes of hindwings whitish and thereby easily discernible. Hindwing beneath monotonously red-brown, discal spot little prominent, at the anal angle a small, yellow spot. Bolivia. *cypria.*

D. cupavia *Mab.* is very closely allied to the following *evages* (*scylla*), ground-colour above blacker, spots whiter, the cell-spot absent; on the hindwing the discal spot is smaller, quite round, the fringes dark ferruginous, at the proximal angle lighter; the hindwing beneath is more monotonous. Bolivia. *cupavia.*

D. evages *Hew.* (= *scylla* *Mab.*) (179 e) is above blackish-brown with 3 subapical dots, the middle one being the smallest; in the discal area 3 yellowish hyaline spots arranged in a line, above them in the cell another small one. The spot of the hindwing is distally somewhat dentate, as in *cupavia*, too, towards the proximal margin extended into a point. Fringes of hindwings yellowish-white. The forewing beneath is black, at the apex and costal margin reddish; the lower 2 discal spots are broadly flown together white; hindwing reddish-yellow, at the proximal margin light yellow, also at the costal and distal margins some dull, lighter patches. Bolivia. *evages.*

D. charybdis *sp. n.* (179 e) looks above almost like *scylla*, the spots are whiter, the fringes of the hindwings dark. Beneath all the red-brown and yellow tints are absent, the ground-colour is also on the forewings blackish-brown, the spots creamy-white, as above, but in addition there is one anal and one costal spot each near the base on the hindwing. Bolivia. *charybdis.*

- geon*. **D. geon** Mab. is allied to the two preceding, but well discernible by the hindwing beneath. Above chocolate with similar spots, but the cellular spot is triangular, united with the middle discal spot. Hindwing blackish-brown with a large, oval spot being produced somewhat proximally, fringes orange. Forewing beneath yellow, tinted blackish between the discal and apical spots as far as the proximal angle; hindwing yellow, towards the margin tinted reddish, the discal spot semicircularly surrounded by 6 ferruginous spots, that at the proximal margin being the largest. Ecuador (Loja).
- oxaites*. **D. oxaites** Hew. (= *syrisca* Mab.) (179 e, f) is somewhat smaller, the cell-spot is flown together with the discal spot below it to a large triangular spot, distally there is another one, the 3rd is absent; the black fringes are distally whitish. On the brown under surface of the forewing the spots are larger, the discal spots form a band; hindwing dark reddish-brown, beside the large white discal spot there is an oblong one at the base of the costal margin, a large one at the costal angle, at the base of the cell a small one which may also be absent, and along the distal margin 6 whitish spots of which that at the anal angle is the largest. Proximal margin bluish-grey. Bolivia.
- octomaculata*. **D. octomaculata** G. & S. (179 e) also belongs into this group. Above similar to *eryonas*, somewhat larger and with broader wings, with larger yellowish-white spots. Beneath the hindwing is without the costal-marginal and costal-angular spots, beside the discal spot there are only 2 at the anal angle. From Costa Rica.
- eryonas*. **D. eryonas** Hew. (= *dolabella* Plötz, *troetschi* Stgr., *heteropterus* Plötz, *fimbriola* Stgr. i. l.) (179 e) is very much like *oxaites*, but it only has 2 subapical dots, the 2 discal spots are better separated, on the hindwing the discal spot is more yellow, more oblong, extending farther to the proximal and costal margins. Beneath on the hindwing the whitish spots are much more extensive. From Panama through Colombia to Brazil.
- hesperioides*. **D. hesperioides** Fldr. (179 f) is a much larger species, on the body and at the bases of the wings orange or ochreous-yellow with similar spots on the forewings as in *oxaites*. The orange spot on the hindwings extends to the base and to the proximal margin; fringes broadly orange. Beneath reddish-yellow, behind the middle of the forewing black except the orange apex. Hindwing reddish-brown with torn yellow spots which are partly finely bordered with black. Colombia.
- polycrates*. **D. polycrates** Fldr. (179 f) is of the same size, above without any reddish-yellow, body and bases of wings somewhat haired olive-greenish. Spots of forewings white hyaline, the 2 middle ones not triangularly flown together, but only separated by the median. Hindwing with a small, round, orange discal spot. Beneath the hindwing is almost monotonously yellowish-brown with traces of a darker discal band. Colombia, Peru.
- superior*. **D. superior** sp. nov. (179 f) is still a little larger than *polycrates*. On the forewing the two discal spots are broadly flown together, the lower one triangular, all slightly yellowish. On the hindwing there is beside the bipartite orange postdiscal spot another basal one. Beneath the forewing shows a broad, yellow discal band, the hindwing is dark red-brown with 3 slightly darker transverse bands which are on both sides bordered by undulate, fine, dark lines, one being situate basally, one in the middle with a long dentiform projection below the costal margin, the third being antemarginal, the margin itself being narrowly darkened. Colombia: Monte Tolima; (FASSEL).
- caicus*. **D. caicus** Hew. (179 f) looks above almost like a large *eryonas*, but above the middle of the proximal margin of the forewing it has one more white discal spot; the spot of the hindwing is white, large, rounded. Beneath the hindwing is yellow, veined brown with the large, quadripartite discal spot and one more white spot bordered with brown each at the costal angle and anal angle. Venezuela.
- inca*. **D. inca** sp. nov. (179 g) is very closely allied to *caicus* and above scarcely different, but the white spot of the hindwing is not so round, but the cellular part more oblong; fringes of hindwings distinctly speckled light and dark. Beneath all the yellow and brown tints are absent. The apex of the forewing is lighter, grey, the hindwing white, scantily dusted with grey, otherwise marked as *caicus* except the longer light cell-spot. On the whole larger. From South Peru (Madre de Dios), taken by FASSEL.
- ligilla*. **D. ligilla** Plötz (179 g) is similar; above the 4 discal spots are fused into a single one, the spot of the hindwing is decidedly yellow, also the fringes which are speckled a little darker. Beneath on the hindwing the brown colour is more predominant; at the base of the cell there is another long, light yellowish wedge-shaped spot. Patria not stated.
- dimidiata*. **D. dimidiata** Fldr. (179 g). Forewing spotted as in *oxaites*, hindwing with a large, white discal spot extending to the costal margin, the proximal margin very much haired bluish-grey. Beneath unmistakable, owing to the hindwing being white in the basal half and distally deep red-brown with blackish spots. Venezuela, Colombia, Bolivia. In f. **xantholeuca** Plötz (179 g) from Venezuela the basal part of the hindwing beneath is purely yellow.
- jelskyi*. **D. jelskyi** Ersch. (179 h) is very different. Above almost as *oxaites* (179 e, f). Beneath the hindwing is yellowish with dark brown veins except the transverse vein, so that in the middle a long stripe of the ground-colour extends from the base to the margin. From Peru and Bolivia.
- lalage*. **D. lalage** G. & S. (179 h). Above blackish-brown with a large discal spot and a subapical spot of orange colour, the spot of the hindwing large, orange, like the fringes. Beneath almost entirely light yellow, only the forewing exhibits a blackish antemarginal band being forked towards the costal margin. From Mexico.

D. lethaea Schs. is above coloured and marked almost as *lalage* (179 h). Beneath the wings are deeper yellow, the cell of the forewing is black almost to the end, towards the base also below the cell; behind it there is a broad black band not reaching the costal margin, being distally bent above the upper radial vein and reaching the proximal angle beneath. The base of the proximal margin of the hindwing is scaled black. Costa Rica (Poas). *lethaea.*

D. lysis Schs. resembles somewhat the following *faula* (179 h); the forewing exhibits in the cell a yellow triangular spot, below it behind the middle between the median veins a small spot and above it farther distally yet a dot; distally below the costal margin a short oblique streak. The hindwing shows the large discal spot of *faula*. Beneath the forewing is blackish-brown with a yellowish-brown costal margin, the distal margin narrowly, the apex somewhat more broadly yellow, the yellow discal spot enlarged. Hindwing yellowish-white, veined brown except the transverse vein and base of the middle radial vein remaining coloured like the ground. Fringes brown. Costa Rica (Turrialba). *lysis.*

D. faula G. & S. (179 h) is very much like *lalage*, the spots somewhat lighter yellow, the discal spot somewhat differently shaped; the hindwing shows a long, narrow discal stripe which is parted at the lower margin by the median. Beneath likewise light yellow, the blackish marking somewhat more extended the hindwing dusted with brownish-grey except the cell. From Mexico. *faula.*

D. arpia Schs. (179 h) likewise belongs hereto, but the subapical spots are entirely absent and the discal spot extends from the subcostal vein to the submedian fold. Beneath almost as *lalage*, but the base of the forewing is black and above the cell connected with the distal-marginal band not being forked. Hindwing quite light yellow. Described from Rio de Janeiro, but it also occurs in Bolivia and is thus certainly widely distributed. *arpia.*

D. pruna Plötz (179 h) from S. Domingo is perhaps only an insular form of the preceding with smaller spots above. Beneath the colour is more yellowish-grey; on the forewing only the apex is yellowish, the distal margin is from the middle downwards dark brown like the proximal two thirds of the costal margin and the whole basal half. *pruna.*

D. seirocastnia sp. n. (179 i) is above deep blackish-brown with an orange, bipartite discal spot and 3 subapical dots of the forewing. Hindwing in the disc deep orange, broadly bordered with blackish-brown with orange fringes. Beneath the forewing the costal margin, apex and narrowly the distal margin are strewn with red-brown. The hindwing is densely dusted with red-brown, but in the disc the yellow ground-colour is scarcely visible; proximal margin black, strewn with yellow. From Colombia (Monte Tolima). *seirocastnia.*

D. privata sp. nov. (179 i) resembles the preceding on the forewing above, but the discal spots are smaller; the hindwing is entirely blackish-brown without an orange discal area. Fringes red-brown, only at the anal angle of the hindwing somewhat more orange, parted by a dark discal line. Beneath the hindwing is quite red-brown, but very scantily strewn with yellow. Bolivia (Cuesta of Cillutincara). Type in the Coll. FASSL. *privata.*

D. agathocles Fldr. (9 i). Here begins a small group of species with several yellow spots of the hindwing. *agathocles* is above blackish, the small spots of the forewing are yellowish-white, insignificant. The hindwing exhibits a large basal spot and behind it 3 distal-marginal spots, the two upper ones of which are situate close together. Beneath the forewing is reddish-yellow in the basal and inner-marginal half, apically blackish. The hindwing is red-grey with 2 slightly conspicuous yellowish transverse bands. Colombia. *agathocles.*

D. pulchra G. & S. (179 i) is similar, somewhat smaller; on the more chocolate ground the forewing exhibits one more light yellow spot in the submedian space, which is situate farther towards the base. The hindwing only shows 3 deep orange spots, 1 towards the base, 2 distally; the fringes of the hindwing are also deep orange. From Costa Rica. *pulchra.*

D. saleca Mab. (179 i) likewise very much like *agathocles*. The spots of the forewing are more reddish-yellow, the cellular spot very much nearer to the spot below it. The fringes of the hindwing are dark red-brown. Beneath the whole basal half, the costa and apex are blackish red-brown, only the discal macular band is reddish-yellow. The hindwing is likewise red-brown, the bands not very conspicuous. Colombia, Peru. — From the Cuesta of Cillutina (FASSL) a form is before us: **albescens** sp. nov. (179 k) with larger, entirely white spots. *saleca.* *albescens.*

D. bubobon Dyar. Above bronze-black, spotted yellow: 1 obliquely quadrangular spot in the cell, 2 faded ones below it, 2 more between and above the median veins, the lower one larger, below it another small, dark yellow spot; hindwing with yellow discal spot and 4 behind it, fringes speckled light. Beneath the spots are larger, more numerous, particularly on the hindwing, where also 3 round spots are situate at the costal margin. Expanse of wings: 36 n. Mexico (Guerrero). *bubobon.*

D. grovius Mab. is larger than *bubobon*, the forewing with 3 subapical dots, a cellular spot and behind it and below it with 4, not 3 more spots. The spot of the hindwing is prolonged, of a brighter yellow than on the forewing, from the costal margin a pointed tooth of the ground-colour penetrates into it; at the distal margin there is only between the median veins a yellow spot. Fringes of hindwings orange. Beneath as *saleca*, but on the red-brown hindwing there are 3 distinct light yellow bands, a broad basal band, another one being connected with it extends to the anal angle, the third being extinct and situate near the fringes; on the ends of the veins there are black dots. Ecuador (Loja). *grovius.*

D. epiphaneus Fldr. (179 i) is still larger, at the bases of the wings dusted with ferruginous-brown, with large band-shaped, reddish-brown spots as far as the proximal margin. The hindwing exhibits a basal *epiphaneus.*

spot and a large quadrangular one between the radial veins, sometimes another smaller one below it. Beneath the hindwing is red-brown with deeper red-brown, torn macular bands. Venezuela.

gaujoni. **D. gaujoni** Mab. is allied to *epiphaneus*. Above black with 3 confluent subapical dots and 3 separate discal spots, the lowest punctiform, the third touching the cellular spot. Hindwing with 3 large, reddish-yellow spots, one of which is at the base of the cell. Fringes at the ends red-brown. Beneath the hindwing is red-brown with the spots as above, bordered by 4 black transverse lines, the basal spot being double owing to another one being situate above it. Ecuador (Zamora).

ochrolimbata. **D. ochrolimbata** sp. nov. (179 k). Above blackish-brown with a coppery reflection and ochreous-brown fringes. In the cell-end and below it there are 2 insignificant, small, ochreous-yellow spots and subapically 3 minute dots. Beneath the apex of the forewing, and the hindwing are chestnut, the spots of the forewing are expanded and lighter towards the proximal margin. According to 1 ♂ from Peru (Pozuzo) from the Coll. SEITZ.

quadristriga. **D. quadristriga** Mab. (179 k) initiates a group of smaller species being above unmarked blackish-brown. The fringes are somewhat lighter, the forewing is scantily strewn with yellowish scales. Beneath the forewing is jet-black in the basal two thirds, at the apex and the costal margin red-brown; at the margin there is a triangular, reddish-white spot, tripartite by the veins, beginning near the proximal angle. Hindwing red-brown with 4 rows of small black strigiform spots, forming dissimilar transverse lines costal margin and submedian space blackish. Expanse of wings: 28 mm. Described from Merida (Venezuela).

boliviensis. **D. boliviensis** Mab. is very much like *quadristriga*: above brown with a lighter reflection and a yellowish middle of the distal margin and black veins; fringes dark grey. Forewing beneath blackish, at the costa and apex greyish-white, in the submedian space a large, white triangular spot with 2 small ones above it; proximal margin ashy-grey. Hindwing dark grey, at the costal margin almost black and with 3 small brown bands in the middle of the wing, the 2 distal ones close together, near the costal angle rectangularly broken, at the costal margin united; the 3rd at the cell-end is more blackish. Bolivia.

merula. **D. merula** Mab. (179 k) is above monotonously brownish-black, between the veins with a somewhat reddish reflex and with dirty grey fringes. Beneath black, the proximal margin of the forewing, the distal half of the submedian space and a spot above it are purely white; the blackish hindwing is powdered with yellow or yellowish-grey atoms, at the proximal margin more densely so, and traversed by 3 blackish, undulate lines, 2 nearing each other at the margin, a broader, somewhat blurred one in the middle. Bolivia (Chaco). It is perhaps synonymous with *eburones* (p. 925).

morva. **D. morva** Mab. is brown with a light ferruginous reflection, veins and marginal line black, fringes red-brown. Beneath the forewing is yellowish-grey, dusted with a light grey, the middle of the margin blackish, the proximal margin in a triangular shape dirty white. Hindwing dark yellowish-grey, strewn with yellow with 3 fine blackish transverse lines which are somewhat blurred. Bolivia.

riza. **D. riza** Mab. is ferruginous-brown with a red reflection; the forewing exhibits 2 subapical dots, the upper quadrangular one being larger, a third reddish white spot is situate in the disc between the lower radial veins. The margin is narrowly blackish. Hindwing similar, between the upper radial veins and below the costal margin with 2 small lighter red-brown spots, just like the inner-marginal fold covered with long yellow hair. Forewing beneath light ferruginous, the inner-marginal part yellow, below the discal spot a yellow dot; on the ends of the veins there are black dots. Hindwing in the disc light violet ferruginous-brown at the base, between the veins with two brownish-black strigiform lines. Expanse of wings: 22 mm. Colombia.

granites. **D. granites** Mab. is allied to *riza*. Forewing with 3 subapical dots and 2 white spots in an oblique line between the median veins, the lower large, quadrangular, almost fused with a similar cell-spot; hindwing black with red-brown fringes. Forewing beneath black, at the costa and ex red-brown, the spots form a band being below light yellow, above reddish-yellow. Hindwing light red-brown with 2 small undulate stripes beginning at the blackish proximal margin and disappearing in the middle. Ecuador (Loja).

polydesma. **D. polydesma** Mab. Above brown with 3 light yellow subapical dots and a spot in the middle of the cell and 2 more behind it and below it. Hindwing with a dot in the middle of the cell and 4 greyish-yellow ones behind it in the shape of a small discal band. Forewing beneath very light reddish-yellow, distally blackish, at the apex reddish-brown. Hindwing light reddish-brown with blackish lines, composed of bent streaks, bordering on an irregular oval, beneath bordered by a dentate line; a cell-end break. Expanse of wings: 28 mm. Venezuela (Merida).

ibhara. **D. ibhara** Btlr. (= *crithote* Hew., *plancus* Hpffr.) (179 k) is above blackish-brown with a slight olive tint and somewhat lighter spots on the forewing: one in the cell, one behind it and below it, by two far distally removed spots connected with the 2 subapical ones to a curved line; in the submedian space, separated by the fold, 2 more oblong nebulous spots. Beneath light brownish-grey, the disc blackish, the spots whiter, near the proximal margin united into a large triangular spot. Hindwing strewn with yellowish-grey scales, traversed by 4 fine, undulate transverse lines. Ecuador, Peru, Bolivia, and in Brazil (Pará).

gyrans. **D. gyrans** Plötz (= *anomala* Mab.) (180 a). Above similar, but the spots only punctiform, and instead of the 2 submedian spots there is only 1 dot removed far proximally. The hindwings are unspotted or exhibit

2 or 3 insignificant discal dots. Beneath densely strewn with grey, proximal margin of forewing lighter, hindwing with dull, darker, small postmedian dots. Mexico.

D. microsticta *G. & S.* (180 a) is smaller, the number of the dots on the forewing is variable (4 to 6), hindwing without spots; beneath strewn lighter, otherwise as above, proximal margin of forewing broad whitish. The ♀ exhibits also above on the hindwing 4 or 5 dots. Mexico. *microsticta.*

D. ceracates *Hew.* (180 a) is larger, stronger than *gyrans*, the white spots larger; the hindwing exhibits above a basal spot and 3 postdiscal ones, one of which is generally isolated at the proximal margin. Beneath loam-coloured, forewing in the inner-marginal area blackish, hindwing very much strewn with greyish-yellow, the spots rather inconspicuous. Mexico. *ceracates.*

D. cyclosticta *Dyar* (180 a) is somewhat larger than *ceracates*, above the forewings are marked the same, but the white spots are much smaller, punctiform; hindwing entirely unmarked, fringes not whitish as there, but reddish-brown. Beneath the forewing is much lighter, yellowish-brown, at the proximal margin marked still lighter than above; hindwings darker than forewings, of a reddish brown, strewn somewhat lighter. Mexico (City) in August. *cyclosticta.*

D. aea *Dyar* (180 a) is much smaller, black with small white punctiform spots as in the preceding, subapically only 2 and below the cell-dot a somewhat longish spot, hindwing with 2 or 3 minute discal dots. Beneath with a slight brass lustre, the white spots more distinct, on the hindwing increased, behind the cell-spot there are 2 rows of dots, that next to the anal angle being removed towards the base. Mexico (Guerrero, Oaxaca). *aea.*

D. penaea *Dyar* (180 a) is extremely similar, above with a bronze tint, the small spots light yellowish; on the hindwing there are behind a cell-spot 3 spots in a bent row. Beneath densely strewn with yellow, the spots more numerous and whiter, on the hindwing behind the cell-spot at first a row of 5 spots, nearer to the distal margin another row of 7 spots, the latter being small and irregular. Described from Mexico (Sierra de Guerrero). *penaea.*

D. polingii *Barnes* (180 a) has been placed into the genus *Hesperia*, but according to its characters it undoubtedly belongs hereto and it also fits very well into the affinities of the preceding species. On the forewing marked exactly as *ceracates*, often besides with a small submedian spot towards the anal angle. Hindwing with a group of 2 or 3 insignificant, a little lighter, small postcellular spots. Beneath olive-brownish, on the hindwing with a reddish tint; inner-marginal area of the forewing broad whitish. Hindwing well distinguished by 3 or 4 larger, rounded, yellowish-white postdiscal spots. Arizona to Mexico. *polingii.*

D. diraspes *Hew.* Above dark brown, on both wings with a yellow discal spot. Beneath the forewings are dark brown, base, a discal band, apex and distal margin light yellow. Hindwing light yellow. Expanse of wings: 1.1 inch. From Rio de Janeiro. This species may be synonymous with *arpia* (179 h)? *diraspes.*

D. eburones *Hew.* is above uni-coloured unmarked dark blackish-brown. Beneath dark brown, strewn with whitish, forewing with a large, tripartite, white inner-angular spot and towards the apex above it 3 indistinct lighter spots. Expanse of wings: 1.05 inch. Bolivia. *eburones.*

D. hilina *Btlr.* has remained unknown to me, it is said to be allied to *cypselus* (179 c, d) and *dimidiata* (179 g). Above olive-brown, forewing with 7 yellow hyaline spots as in *cypselus*, hindwing with a large, yellow discal spot with a silky lustre, distal margin black; fringes orange, body greenish. Beneath brown, towards the margin ochreous, the spots larger than above; hindwing ochreous-yellow, the large yellow spot surrounded by 7 brown spots. Expanse of wings: 1.4 inch. From Venezuela. *hilina.*

D. brunnea *Seddr.* is above blackish-brown, only the forewing with 2 minute dots. Beneath the same, the proximal margin of the forewing lighter; behind the cell two more dots, one between the median veins and one near the apex. From Guatemala. *brunnea.*

68. Genus: **Eumesia** *Fldr.*

The short antennae do not reach to the middle of the costal margin; the porrect palpi have a slender, stunted terminal joint. Distal margin of forewing much longer than the proximal margin; the upper median vein of the forewing with a bent course rises far before the cell-end. The strongly spined posterior tibiae exhibit 2 pair of spurs. Beside the typical species of *FELDER* another one has been described as *Eumesia*, but it is doubtful whether it belongs hereto.

E. semiargentea *Fldr.* (191 h) is at once recognizable by the contrast of the uni-coloured dark brown forewing with the silvery lustrous greyish-white hindwing. On the under surface the forewing is pale ochreous, the hindwing dirty white with a darker costal margin and proximal margin. Colombia. *semiargentea.*

E. potomoni *Weeks*, described according to a ♀, is above bronze-brown, at the base and margins darker, with a black dot at the cell-end and 2 subapical hyaline dots, from which a bent, dark line proceeds extending to the submedian space; hindwing the same with 2 dark discal streaks. Beneath lighter brown, marked the same as above. Expanse of wings: 1¾ inch. Venezuela (Suapure). *potomoni.*

69. Genus: **Argopteron** *Wts.*

Discernible from the preceding by the posterior tibiae being only singly spurred, the abdomen being longer. The 2nd and 3rd palpal joints intensely scaled, porrect; in the veins no essential difference. Several species from South America.

aureipennis. **A. aureipennis** *Blech.* (= *flavimargo* *Plötz*, *tripunctatus* *Mab.*) (191 h) is very conspicuous by the purely golden under surface, only in the ♀ the disc of the forewing is dark brown, with the 2 golden discal spots, the 3rd disappearing in the golden apex. The upper surface is dark brown with 3 large yellow spots on the forewing and yellow fringes of the hindwing. Chile.

dividuum. **A. dividuum** (180 b) is above blackish-brown with a hyaline discal band, parted by the median and its lower branch, a small punctiform spot towards the margin and 3 small subapical spots; hindwing with a dark yellow postmedian band composed of one large quadrangular spot and 3 narrow small spots below it; the yellow fringes are speckled somewhat darker. Beneath the forewing is as above, the discal band vanishing in the whitish proximal margin, hindwing brown with numerous yellow spots. Mexico.

xicca. **A. xicca** *Dyar* would perhaps be better placed to *Dalla* into the *quadristriga*-group. Above uni-coloured black, inner-marginal part of hindwing with long greenish hair. Beneath dull black, base of costal margin and apex greyish-brown; hindwing greyish-brown with a black stripe on the submedian fold, expanded at the proximal angle to a spot. Peru, Vilcabamba, at an altitude of 10 000 ft., in August.

puelmae. **A. puelmae** *Calvert* (191 g) is a magnificent species allied to *aureipennis* from which it differs by the hindwing being quite golden also above. The blackish-brown forewing exhibits a large tripartite discal spot and a subapical band. Beneath golden, only the ♀ has a dark cell-end spot and a slightly smoked margin of the forewing. In January in North Chile.

metius. **A. metius** *Mab.* It is doubtful whether this species and the next one having been described as *Cyclopides* belong hereto. Above blackish-brown with yellowish hyaline spots: 3 small subapical ones, 3 small ones at the cell-end, an oblique row of 3 quadrangular ones between the lower median and middle radial vein. Fringes yellowish-white. Beneath the costal margin of the forewing is reddish-brown, the apex lilac, the hindwing reddish-lilac with a violettish-brown costal margin, in it an oval yellowish spot, another one below it extending from the upper radial vein to the proximal margin. Fringes speckled dark. Expanse of wings: 21 mm. Porto Cabello.

celeus. **A. celeus** *Mab.* is described as yellowish-brown, at the base of the forewing striped yellow with 3 yellow sagittiform spots in the cell and 7 reddish-yellow postdiscal spots, the 3 upper ones as apical streaks, the 4 others below them as far as the proximal margin. Hindwing margined with 3 longish, reddish-yellow spots, the middle spot being double. Fringes yellowish-white. Beneath light brown, tinted yellow, with yellow veins and the spots as above. Hindwing with light yellow veins, also the folds with yellow strigiform spots between the upper median vein and the costal margin. Expanse of wings: 25 mm. Villa Bella.

70. Genus: **Pamphila** *F.*

This species being chiefly distributed in Europe and Asia sends a European representative to North America. It has been dealt with in the palearctic part (Vol. I, p. 344). Posterior tibiae only with end-spurs, the short antennae do not reach to the middle of the costal margin.

mandan. **P. palaemon** *Pall.* (= *paniscus* *F.*, *brontes* *Schiff.*, *mandan* *Edw.*, *mesapano* *Scddr.*, *skada* *Edw.*) (Vol. I, t. 87 c) is figured in the palearctic part and occurs in the whole northern United States in a very much orange-spotted form which we may call: f. **mandan** (180 b).

floridae. **P. floridae** *Mab.* Above olive-grey with small yellowish-white spots on the forewing, 3 subapical ones, 2 in the cell and 2 behind it in an oblique line; fringes ashy-grey. The ♀ has only one cellular spot; beneath more purely ashy-grey, disk and proximal margin of forewing blackish. Proximal margin of hindwing lead-coloured grey, the spots less distinct. Florida.

dardaris. **P. dardaris** *G. & S.* (180 b) is above blackish-brown, in the middle of the wing with a large, bipartite, white spot, a dot behind it and 2 subapical dots. Hindwing with 2 small spots. Beneath browner with much more numerous spots being somewhat yellowish on the hindwing. Inner-marginal part of forewing broadly white. Mexico.

daridacus. **P. daridacus** *G. & S.* has more spots on the forewing. The hindwing is beneath greyer, the white spots less prominent, in the disc strewn with single, small, black spots. Described from Brazil.

calaon. **P. calaon** *Hew.* may belong hereto. Upper surface reddish-brown, forewing with yellow hyaline spots; one in the cell, 2 between the median veins, a double spot near the proximal margin and 3 small subapical spots. Hindwing with a spot near the proximal margin and 3 small subapical spots. Hindwing with a spot near the costal margin, a longish cell-spot and a short macular band behind it; fringes reddish. Beneath similar, but the base and the apex of the forewing are reddish-yellow; hindwing red-brown, the spots whitish, bordered with black; at the costal margin there are 2 spots and near the distal margin a light yellow band. Expanse of wings: $1\frac{1}{4}$ inch. From Ecuador.

P. quinquemacula *Skinner* is above blackish-brown with 3 white subapical dots and 2 postdiscal spots. Beneath as above, hindwing with 2 large, white spots near the costal margin and 8 small white postdiscal dots. Expanse of wings: 21 mm. New Mexico. *quinque-macula.*

Group B.

The antennae of this group are of a very different shape, but never flared; the club is either not curved or only slightly. Palpal terminal joint either long and slender, bent across the vertex, or very short. The cell of the forewing is always shorter than $\frac{2}{3}$ of the costal margin; the middle radial rises nearer at the lower than at the upper, and at its base it is mostly bent somewhat downward. Hindwing at the anal angle often somewhat prolonged, but never extended like a tooth or even into a tail. The ♂ never shows a costal fold, but very often a scent-scale stripe or several mostly below the median. The doubly spurred posterior tibiae do not bear a hair-tuft. Characteristic is the way the wings are kept: while at rest and in the sun the forewings are upwardly tucked over, the hindwings expanded horizontally, the latter also upwardly tucked over only when entirely at rest. This group comprises the lepidoptera being by far the most difficult to determine, often exhibiting a most remarkable homogeneity in their exterior.

71. Genus: **Apaustus** *Hbn.*

Antennae very short with a moderately strong, straight club, palpal terminal joint long and slender. Distinguished by the very long, slender abdomen projecting far beyond the hindwing. No scent-scales.

A. menes *Cr.* (180 b). Blackish-brown with 3 yellowish subapical dots and a narrow yellow base of the costal margin. Beneath the same, though lighter, at the apex of the forewing veined yellow, also the hindwing. Abdomen beneath whitish. Panama to Colombia. Guiana, Amazon, Brazil. *menes.*

72. Genus: **Oarisma** *Seddr.*

The antennae have only the length of $\frac{1}{3}$ of the costal margin, but the obtuse club itself is very long. The 2nd palpal joint is long-haired, the 3rd long and slender. Forewing at the apex a little stunted; abdomen also here very long.

O. powesheik *Pack.* (180 b) is lustrous dark yellowish-brown, fringes and costal margin of hindwing dark brown. Forewing beneath reddish-yellow, at the proximal margin blackish-brown, hindwing greyish-yellow, proximal margin broadly yellow, fringes at the anal angle white. North America to Mexico. — Specimens from these southern habitats exhibit the hindwing in the distal-marginal half more or less reddish-yellow: f. **isidorus** *Plötz* (180 b). *powesheik.*
isidorus.

O. garita *Reak.* (= *hylax* *Edw.*) (180 c) is smaller, with shorter wings of a darker colour. Colorado, Mexico. *garita.*

O. edwardsii *Barnes.* The description of this species was unfortunately not accessible to us. *edwardsii.*

73. Genus: **Adopaeoides** *G. u. S.*

Distinguished from the preceding genera by the shorter antennal club.

A. simplex *G. & S.* (= *prittwitzi* *Plötz*) (180 c) is above reddish-yellow with a blackish margin, a blackish margin of the hindwing and a darkened base and proximal margin. Beneath plainly yellow with a black proximal margin of the forewing. Mexico. *simplex.*

A. bistrata *G. & S.* (180 c) resembles *O. powesheik*, but beneath on the hindwing it shows 2 white longitudinal stripes, the fringes are not white. Above the forewing exhibits a dark cell-end streak. Described from Mexico. *bistrata.*

A. boeta *Hew.* (= *bilineata* *Dogn.*). We were unfortunately not able to find the description of this species. *boeta.*

74. Genus: **Ancyloxypha** *Fldr.*

Antennae as in *Oarisma*. Palpi long, the 2nd joint loosely haired, the 3rd slender, somewhat upturned. The slender abdomen projects somewhat beyond the anal angle.

A. numitor *F.* (= *puer* *Hbn.*, *marginatus* *Harr.*) (180 c). The ♂ is above on the forewings dark brown, on the hindwings being bordered with black it is reddish-yellow; in the ♀ also the forewing is reddish-yellow with a broad black distal margin. Beneath yellow with a black disc and proximal margin. Atlantic States. *numitor.*

A. longleyi *French* is more strongly built than *numitor*, the costal margin of the forewing is straighter, the apex more pointed, the terminal joint of the palp somewhat longer. Above monotonously dark brown with a slight blue reflection; hindwing yellow, margined with brown. Beneath almost as *numitor*, but a little darker, hindwings uni-coloured yellow. From Chicago. *longleyi.*

- arene.* **A. arene** *Edw.* (= *tucumanus* *Plötz*, *leporina* *Plötz*) (180 c) is above plainly reddish-yellow with a blackish distal margin at apex of the forewing as well as costal margin of the hindwing, and a thin black cell-end streak. Beneath plainly yellow, proximal margin of forewing black. Arizona, Mexico to Venezuela and Peru. — *f. euphrasia* *Plötz* (180 d) is marked by the ♀ forewing being suffused with dark brown; from Mexico.
- nanus.* **A. nanus** *Plötz* (180 d) is a smaller species from Cuba, closely allied to the preceding. Above the forewing is dusted with brown except the cell remaining yellow; beneath with somewhat darker veins.
- xanthina.* **A. xanthina** *Mab.* Forewing black with a yellow apical spot and 2 similar longitudinal bands, one along the costal margin to the cell-end, the other widening distally and divided into 4 spots. Hindwing black with a yellow, longish, triangular spot occupying the whole margin, fringes reddish-yellow. Forewing beneath yellow with a black band disappearing at the proximal margin. Hindwing yellow, between the veins shaded brownish, whereby they are more prominent. Expanse of wings: 20 mm. Valera.
- melanoneura.* **A. melanoneura** *Fldr.* (180 d) is easily recognizable by the black veins above. Beneath the hindwing is brownish with 2 white longitudinal stripes. Colombia.

75. Genus: **Copaeodes** *Speyer*.

- Antennae short as in the preceding with a straight, strong club with stunted apex. Palpi as in *Adopaea* (Vol. I, p. 346). The distal margin of the forewing is a little excised in the lower half. The abdomen projects beyond the anal angle. The ♂ exhibits a fine scent-scale stripe extending from the base of the median along the median to the upper median vein, below which it extends to its first third.
- singularis.* **C. singularis** *H.-Schäff.* (= *aurantiaca* *Hew.*, *waco* *Edw.*, *minima* *Edw.*, *candida* *Wright*, *macra* *Plötz*) (180 d) is above and beneath uni-coloured light reddish-yellow, the scent-stripe fine black. Beneath the hindwings are scarcely noticeably veined darker. Texas, Arizona, California and from Mexico to Panama, also in Cuba.
- wrightii.* **C. wrightii** *Edw.* (180 d) is extremely similar, somewhat larger, more robust, with broader wings, at once discernible by the smoked fringes; the scent-scale stripe is a little steeper. California.
- myrtis.* **C. myrtis** *Edw.* (180 d) in contrast with it is smaller, with narrower wings, towards the distal margins smoky, more broadly at the apex. Costal margin of hindwing broad dark, distal margin narrowly bordered with dark. Beneath the base of the forewing is black. Arizona.
- eunus.* **C. eunus** *Edw.* (180 e) is as large as *wrightii*, with a narrow black marginal line; the veins towards the latter somewhat darkened, the margin very feebly and narrowly smoked. On the hindwing beneath the ground between the broadly lighter veins is strewn with a greenish grey. California.

76. Genus: **Chaerephon** *G. u. S.*

- Antennae as long as half the costal margin, club short, at the apex pointed somewhat like a hook. The terminal joint of the palp is shorter than in the preceding and half erect. Apex of forewing pointed, in the ♀ more obtuse. Middle and posterior tibiae spiny, the latter with double spurs. In the ♂ of *citrus* a narrow scent scale stripe which is absent in *rhesus* extends from the rise of the upper median vein obliquely to the inner-marginal vein.
- citrus.* **Ch. citrus** *Mab.* (180 e). Dull greyish-brown, reddish-yellow, with greenish scales at an oblique exposure to light, particularly on the costal margin and in the basal half of the forewing, with some blurred, reddish-yellow, subapical and postdiscal small spots, also on the hindwing. Fringes greyish-white. Beneath greyish-yellow, strewn with blackish, except a postdiscal band of spots, and with small, black internodal spots. Scent-stripe black. The ♀ is duller in its colour with more distinct yellow spots above. Mexico, Honduras, Guatemala.
- rhesus.* **Ch. rhesus** *Edw.* (= *subreticulata* *Plötz*, *axius* *Plötz*) (180 e) is much larger, blackish-brown, of a more greenish tint with larger and more distinct spots. Also beneath more blackish-brown with an olive tint and white spots; the forewing exhibits a large, white inner-marginal spot, the hindwing one more basal band of spots being broken in an acute angle. Colorado, Arizona to Mexico.

77. Genus: **Hylephila** *Bill.*

- Scarcely distinguished from the preceding genus; palpi and antennae the same. On the somewhat longer forewing the lower median vein rises much nearer at the base, in the ♀ somewhat farther than at the cell-end. Distal margin of hindwing somewhat concave before the anal angle. The scent-scale stripe extends as in *Chaerephon* and is distally bordered by a series of erect scales.
- phylaeus.* **H. phylaeus** *Drury* (= *augias* *Hbn.*, *hala* *Bltr.*, *ancora* *Plötz*, *bucephalus* *Steph.*) (180 e). The ♂ is above reddish-yellow, with black wedge-shaped streaks before the distal margin, a long black spot behind the cell

of the forewing, a broad black stigma, and dark costal margin of the hindwing. The ♂ is dark brown with a band of yellowish-red spots. The under surface is light yellow, in the ♀ dark olive-grey on the hindwing. Very widely distributed and mostly common in the eastern and southern States of North America, from Mexico to Argentina and in all the West Indian Islands. — The light green pupa with darker green dorsal and lateral stripes lives on herbs and changes into a light green pupa.

H. andina *Stgr.* might be a dark local form of *phylaeus*. It differs by much broader blackish-brown distal margins of all the wings, not being dentate on the hindwings. The costal-marginal part of the hindwing is also much broader dark, also the veins and the inner-marginal part, so that almost two thirds of the surface of the wings are dark. The under surface is much more intensely spotted dark, especially on the hindwing, which mostly are of an ochreous-brown ground-colour. From C'ocapata (Bolivia).

H. peruana *sp. nov.* (180 f) is somewhat smaller than *phylaeus* and is very closely allied to *fasciolata*, on the ♂ forewing scarcely different, the black longitudinal spot at most behind the upper cell-end being somewhat larger and thicker; the hindwing exhibits below the cell yet 2 small black longitudinal spots. The ♀ is much lighter yellow. The under surface is quite different: dull ochreous-yellowish, in the ♀ almost without any reddish tint, the markings from above repeated in distinct, small, jet-black, wedge-shaped spots which are smaller than above and all well separated by light veins. From Cuzco (Peru).

H. fassli *sp. nov.* (180 f). There only exists one ♀ for which reason its position is not certain. Thrice as large as *peruana*, above light yellow as the ♀ of *peruana* with an ochreous-reddish tint, marked as there, but the black markings particularly of the distal margins are much broader; especially on the hindwing proximally not dentately, but straightly defined; on the middle radial vein the yellow colour projects pointedly towards the margin, whilst from the cell it is followed in an acute angle by a black discal angular spot; fringes ochreous, towards the apex feebly speckled. The under surface is most peculiarly and differently marked. On the forewing similar as above, but duller, the small subapical spots whitish, the anal angle lighter. Hindwing likewise as above, but much lighter, the margins strewn with a violettish grey, the subcostal within the cell distinctly whitish-yellow, below it whitish hairing; behind the inner-marginal fold there is a blackish longitudinal spot, the anal half of the wing more sand-coloured yellow. 1 ♀ from Cuzco (Peru), taken by FASSL.

H. isonira *Dyar* (180 f) is very closely allied to *phylaeus*; in the ♂ the black margins are broader, almost forming a proximally dentate band. The ♀ is only slightly darker than the ♂, the markings not so much flown together. Beneath light yellowish, hindwings tinted grey with a lighter discal band, bordered by a dark red, sharply broken, the lower segment straighter than in *phylaeus*, not spotted black. From Peru, rising to altitudes of 14 000 ft., in July and October.

H. fasciolata *Blch.* (= *emma* *Plötz*) (180 f) is somewhat smaller and stouter than *phylaeus*, of a deeper reddish-yellow, above somewhat more intensely marked black; also the ♀ is marked and coloured almost like the ♂, instead of the scent-stripe there are 3 small black spots. The principal difference consists in the very much black-spotted under surface. From Chile.

H. fulva *Blch.* (= *grynea* *Plötz*, *hujana* *Plötz*, *antaretica* *Mab.*) (180 f) is larger, especially the ♀ is much more intensely marked black; beneath the ♀ is much strewn with brownish-grey, with a white postdiscal macular band and cellular spot, the ♂ is light yellow with small black punctiform spots and a black proximal margin of the forewing. Chile.

78. Genus: **Erynnis** *Schrk.*

The antennae are somewhat longer than in *Hylephila*, but still shorter than half the costal margin; the club is longer, the hook-shaped apex better developed. The scent-scale stripe of the ♂ is broader and extends to the rise of the lower median vein. Otherwise not different from the preceding genus.

E. comma *L.* (= *virgula* *Retzius*) has been dealt with in the palearctic part (p. 348, t. 88 d) and occurs in a number of forms in America. — f. **manitoba** *Scddr.* (180 f, g) is a slender form above lighter yellowish-brown, with slightly darkened margins above. Beneath on the hindwing the whitish marginal band is quite coherent and sharply angled, the ground-colour dark brown or with a greenish tint. To the north as far as Canada, to the south as far as Colorado and North California. — f. **viridis** *Edw.* (180 g) is on the hindwing beneath distinctly green, the marginal band being often interrupted. — f. **juba** *Scddr.* has above somewhat broader darkened margins of the wings; beneath the apex of the forewing is more darkened, the spots of the hindwings are less coherent. — f. **nevada** *Scddr.* (180 g) is smaller, above the ♂ is of a deeper yellowish-red, the margins are less darkened; beneath the spots of the hindwing are very small on a greyish-green ground. — f. **idaho** *Edw.* (180 g) is a very light form in which the marginal darkening is reduced almost to a marginal line; the hindwing is beneath light yellowish-grey, the small light spots are little prominent. — f. **colorado** *Scddr.* (180 g) on the contrary is very much more darkened, also the basal area. Hindwing beneath dark greenish-grey with angular, torn, light spots. — f. **columbia** *Scddr.* (180 h) is above almost just the same as beneath, but quite light sand-coloured yellow, almost unmarked, still lighter than *idaho*. — f. **oregonia** *Edw.* (180 h) resembles *manitoba* above, but the ♀ is much lighter and more similar to the ♂, beneath light yellowish-grey as *idaho*, with a very

- assiniboia*, light apex of the forewing and black basal markings. — f. **assiniboia** *Lyman*. are the eastern specimens from
laurentina, Regina with a very light yellowish-green under surface. — f. **laurentina** *Lyman*. the dark brown form is called,
manitoboides, in case the above mentioned name of f. *manitoba* is to refer to the yellowish-green *assiniboia*. — f. **manitoboides**
Fletcher. is smaller than *manitoba*, of a bright tan-colour, with a very broad dark brown margin. Ontario.
- sassacus*, **E. sassacus** *Harr.* (180 h) is hardly discernible above from the forms of *manitoba*; the ♀ is larger, the
marginal shading darker and more extensive. Beneath the wings are light yellowish-red, the spots above scarcely
lighter, the basal area of the forewing spotted black. From New England to Georgia, to the west as far as
dacotae, Colorado. — The remarkably stout, green larva lives on herbs. — f. **dacotae** *Skinn.* has the dark markings almost
extinct, the ground-colour is paler. The ♀ on the contrary is quite dark with small light spots. South Dakota,
Iowa.
- harpalus*, **E. harpalus** *Edw.* is very closely allied to *sassacus*. Forewing in the disc and at the costal margin
reddish-yellow, light brown at the base and distal margin, hindwing the same. Beneath pale reddish-yellow,
forewing at the proximal margin yellowish, at the apex ochreous, at the base black. Hindwing ochreous-yellow
in the disc an indistinct, lighter, narrow, bent band and a cellular spot. The ♀ is lighter, the brown colour con-
fined, with a light submarginal band. Beneath the light band of the hindwing is more distinct. From Nevada.
- pawnee*, **E. pawnee** *Dodge* (180 h, i). Large, yellowish-red with a moderately broad smoky margin and white
fringes. The ♀ is darker, only basally and at the costal margin ferruginous-yellow with whitish spots. Beneath
montana, very dull reddish-yellow, in the ♀ more olive on the hindwings with a little lighter spots. Montana. — f. **mon-**
tana *Skinner* is above and beneath darker, broadly bordered with blackish brown, hindwing beneath with a
postdiscal row of yellow spots. Colorado.
- ottoe*, **E. ottoe** *Edw.* (180 i) is a very large, very light reddish-yellow species with very narrowly smoked
margins and also in the female scarcely darkened wings. The under surface is quite monotonously light reddish-
yellow or Isabel-coloured without any marking, only with a black-marked basal area of the forewing. From
amanda, Kansas and Nebraska. — f. **amanda** *Plötz* (180 i) is a form with a broad black distal margin from an unknown
habitat.
- lasus*, **E. lasus** *Edw.* above entirely resembles *ottoe*. Beneath the apex and costal margin of the forewing,
and the hindwings are light yellow with a green tint, the base of the cell and the proximal margin are black,
the cell otherwise reddish-yellow, an oblique discal row and 3 subapical spots are white. Costal margin of
hindwing speckled with brown, subcostal and median veins of a clear white; a postdiscal, rectangularly flawed
band of white spots is distally partly bordered with black. From South Arizona.
- cabelus*, **E. cabelus** *Edw.* is likewise very similar; the forewings are somewhat more broadly bordered with
brown, with 2 or 3 very small subapical dots. The hindwing is beneath reddish golden yellow with some minute
lighter spots, one in the lower cell-end, 2 or 3 postdiscally; a small one may also be yet near the distal margin.
Nevada.
- napa*, **E. napa** *Edw.* (= *dacotah* *Edw.*). We unfortunately had no access to the description of this species.
metea, **E. metea** *Scddr.* (= *riddingsii* *Reak.*) (180 i). Here also the ♂ is similarly marked as the ♀-forms,
of a dull greyish-brown with a reddish-yellow postdiscal band, subapical dots on the forewing and small diffuse
spots on the hindwings. The under surface is darker brown than above, the light macular markings ivory-
coloured; the hindwing exhibits near the base another bent band of white spots. From the Atlantic States.
- uncas*, **E. uncas** *Edw.* (180 k) is a larger species with long wings, the ♂ reddish-yellow with a long black
stigma, smoky margins and an especially broad dark apex of the forewing with 4 whitish spots therein. The
♀ is particularly large, dark brown with whitish spots being more reddish-yellow towards the proximal margin
and on the hindwing. Beneath the hindwing is greenish-grey with bright pearl-coloured spots which are proxi-
mally and distally bordered by a darker olive and spotted so. Pennsylvania to Montana and Colorado.
- attalus*, **E. attalus** *Edw.* (= *seminole* *Scddr.*, *slossonae* *Skinner*) (180 k). Similar as *metea*, but larger, darker,
the macular markings more distinct with a long, wedge-shaped, reddish-yellow cellular spot; the ♀ is larger
and darker. Beneath the hindwing is dull brownish-grey, the light spots are lighter grey. From the southern
Atlantic States to Florida and Texas.
- yuma*, **E. yuma** *Edw.* Above uni-coloured ochreous-yellow, without spots, with a long, narrow, almost
straight stigma; only the costal margin of the hindwing is darkened. Beneath still lighter yellow, base of fore-
wing blackish. Described according to 1 ♂ from Arizona. Expanse of wings: 1,3 inch.
- carus*, **E. carus** *Edw.* very much resembles *Chaereph. rhesus* (180 e) above, but it is easily discernible by the
♂ stigma, less purely white fringes and a different under surface which is brown with the costal margin of the
forewing and the proximal margin of both wings being dusted yellowish-white, as well as a narrow, similar
distal margin; of the same colour are the veins; all the spots above are more distinct and larger. From West
Texas.
- licinus*, **E. licinus** *Edw.* Above blackish-brown with a large, reddish-yellow discal spot, some postdiscal and
3 subapical small spots, hindwing with a large, reddish-yellow, triangular discal spot. Beneath brown, at the
costal margin of the forewing and disc of hindwing tinted reddish-yellow, the spots of above being whitish
here. Hindwing with a rectangularly bent line of white spots behind the cell, and 2 cellular dots. From Texas.

E. morrisonii *Edw.* (180 k) is easily recognized by the scent-scale stripe being far prolonged towards the apex by black spots; also in the ♀ this band-shaped, dark marking is very conspicuous. Beneath light reddish-yellow, marked ferruginous-brown with a black base of the forewing. Hindwing of a deep ferruginous-brown with a silvery white cellular stripe and a white, postdiscal macular band. Colorado, Arizona and Mexico. *morrisonii*.

79. Genus: **Atalopedes** *Scddr.*

Like *Erynnis*, but the terminal joint of the palp obtuse and hidden. Veins as in *Hylephila*.

A. campestris *Bsd.* (= *huron* *Edw.*, *kedema* *Btlr.*) (180 k, l) is well distinguished by the very broad stigma and a broad, blackish-brown margin. The dark ♀ shows postdiscal light spots. Beneath much lighter, the spots only feebly traceable. Atlantic States, Arizona, California, Mexico, Guatemala, Costa Rica, Colombia. *campestris*.

A. flaveola *Mab.* resembles the preceding, but it is smaller. Light reddish-yellow, on the forewing with a broad blackish-brown distal and costal margin; 3 subapical, small streak-shaped spots, 2 postcellular, small spots separated afar, below them a long, notched out spot and 2 more below it, the three lower ones touching the large, oval, black scent-spot. Hindwing with a broad dark margin, the disc reddish-yellow, darkened by grey, bordering on 3 lighter yellow spots. Beneath yellow, marked as above, hindwing greyish-yellow, at the proximal margin yellow with 5 lighter postdiscal spots. The ♀ is lighter, in the disc more brownish. Expanse of wings: 26 to 27 mm. Porto Cabello. *flaveola*.

A. mesogramma *Latr.* (= *canaxa* *Hew.*) (180 l) is an uncommonly large, deviating species. Above in the ♂ reddish-yellow, in the ♀ more spotted whitish. Easily recognizable by the hindwing beneath being marked with a broad white band and a small cellular spot before it; in the ♂ it is slightly tinted yellow. Brazil, Cuba. *mesogramma*.

80. Genus: **Thymelicus** *Hbn.*

Likewise very closely allied to the genus *Hylephila* and not different in the veins. Palpal terminal joint very short, scarcely visible, bent forward. The ♂ scent-scale stripe consists of 2 rows of dull black scales, the distal one being linear, the proximal ones somewhat bent, between them scales of a somewhat leaden lustre.

Th. vibex *Hbn.* (= *praeceps* *Scddr.*, *lumida* *Mschlr.*, *golenia* *Mschlr.*, *stigma* *Skinner*, *combinata* *Plötz*, *zenckei* *Plötz*) (181 a). Above reddish-yellow, towards the margin broadly darkened, with wedge-shaped, black internerval spots on the forewing; the broad stigma rests on a black spot which is towards the apex continued beyond it. Beneath lighter yellow, base of forewing black, hindwing with minute spots. Central America, Mexico, Colombia. *vibex*.

Th. sulfurina *Mab.* (= *catilina* *Plötz*) (181 a) is similar, of a light sulphur-colour, the long, black oblique stripe of the forewing coherently extending in the shape of a band to the apex. Hindwing darker with but few yellow spots. Beneath the hindwing is strewn with a greenish-grey. Brazil, Cayenne. *sulfurina*.

Th. phormio *Mab.* is as large as *vibex*. Forewing yellow, at the apex and distal margin black with a black oblique band as far as the inner-marginal vein at the base; costal margin yellow. Hindwing red-brown, in the disc yellow. Forewing beneath as in *vibex*, but more yellow, distal margin almost quite yellow. Hindwing yellow with a series of 5 black dots and before it 3 or 4. Brazil. *phormio*.

Th. brettus *Bsd. & Lec.* (= *wingina* *Scddr.*, *unna* *Plötz*, *margarita* *Plötz*) (181 a) is similar to *vibex*, but much lighter, the marginal darkening almost absent, only the wedge-shaped spots before the margin being present; hindwing quite reddish-yellow with a black distal margin, very much like *H. phylaeus*. Beneath discernible by darker and larger spots. The ♀ is quite dark brown with very small reddish-yellow spots on the forewing. Atlantic States. Larva on herbs. — f. **brettoides** *Edw.* (= *clara* *Plötz*) (180 k) is very much lighter with a very narrowly darkened distal margin, especially the ♀ has much larger, yellowish-red spots. Beneath greyer with only very small punctiform spots. California. *brettus*, *brettoides*.

Th. mystic *Scddr.* (181 b) above very much resembles *E. morrisonii* by the long extent of the black oblique spot; also the ♀ is similar. Beneath reddish-yellow at the costa and basal area of the forewing; the rest and the hindwing ferruginous-brown with light spots, inner-marginal part light brown. Atlantic States. *mystic*.

Th. erynnioides *Dyar* is above yellowish-red, at the base blackish and with a broad black distal margin with 3 small, reddish-yellow subapical dots therein; the stigma is broad, somewhat bent, above bordered with a deep black, beneath spotted black; hindwing reddish-yellow, narrowly bordered with black. Beneath the hindwing is reddish-yellow, at the proximal margin lighter with a straight row of white spots through the middle, one below the cell, one in the cell-end and one above it, the lower and upper spot being proximally bordered with black. In the ♀ the hindwing beneath is more greenish-yellow, only at the proximal margin reddish-yellow, the white spots small, but all around bordered with black. California. *erynnioides*.

- magdalia.* **Th. magdalia** *H.-Schöff.* (181 b) is a smaller species, above bright reddish-yellow, in the inner-marginal area somewhat darkened, with narrow black borders and costal margin. The σ is darkened at the cell-end. Beneath reddish-yellow, forewing in the submedian space close to the anal angle black; the ϕ is more intensely strewn with a yellowish-green. From Cuba.
- chusca.* **Th. chusca** *Edw.* Above reddish-yellow, with narrow blackish-brown, proximally dentate distal margins, the teeth on the forewing opposite the transverse vein absent. Scent-stripe velvety black, thick, towards the base convex, here at the lower end with a black spot, distally a small dark spot. Beneath light yellow, unmarked, hindwing more ochreous. From Arizona.
- draco.* **Th. draco** *Edw.* (181 c). Blackish-brown, at the proximal margin broadly haired olive, only in the costal-marginal part and in some postdiscal and subapical small spots reddish-yellow; disc of hindwing irregularly spotted reddish-yellow. Fringes of hindwings yellowish-white. Beneath the hindwings are greyish-brown, the spots light sulphureous. Colorado.
- siris.* **Th. siris** *Edw.* is allied to *mystic* (181 b). Forewing above reddish-yellow, apex and distal margin as far as the cell and the whole hindwings dark brown; small, reddish-yellow postdiscal and subapical spots on the forewing; behind the narrow, bent stigma a dark brown spot. The hindwing exhibits in the disc an indistinct, reddish-yellow, narrow band. Beneath darker brown, the spots more distinctly yellow. The ϕ is larger, without the reddish-yellow discal colour of the σ , the spots clearly reddish-yellow, especially on the hindwings. Beneath almost cinnamon-coloured. Mount Hood.
- mardon.* **Th. mardon** *Edw.* (181 b) is above light greyish-brown, scaled yellow with a more distinctly reddish-yellow costal part of the forewing and traces of such subapical and postdiscal small spots. Beneath light grey, more or less strewn with yellowish, the spots of above repeated whitish, besides a bent macular band in the middle of the hindwing. Oregon, Washington.
- athenion.* **Th. athenion** *Hbn.* (181 c) is in the σ sex above uni-coloured blackish-brown with the broad stigma behind which there may appear very indistinct light spots which are very distinct in the ϕ . Beneath duller greyish-brown, spotted lighter on the forewing. Hindwing violetish-grey with a dark brown discal band, costal-marginal and distal-marginal spots. Mexico to Brazil.
- bahiensis.* **Th. bahiensis** *Schs.* is dull brown, cell of forewing ferruginous-brown, as well as a stripe at the base of the costa and small stripes above the cell-end, 3 small subapical spots and 2 small spots near the middle of the distal margin, as well as lighter shades behind the stigma; the disc of the hindwing is also ferruginous-brown, parted by the darker veins. Beneath the same, but of a duller colouring. Expanse of wings: 23 mm. Bahia.
- dares.* **Th. dares** *Plötz* (181 c) seems to be very similar, so that both may in certain cases be comprised as *dares*. According to the figure, only the small spots at the middle of the distal margin are absent and the under surface is lighter, more yellowish-grey, strewn with ferruginous-brownish, with a blackish inner-marginal ray being thickened towards the anal angle. From Brazil and Bolivia.

81. Genus: **Polites** *Seddr.*

Antennae and palpi as in *Hylephila*, also the veins. The σ stigma consists of a somewhat bent stripe of reverted black scent-scales, below and outside of it with a spot of similar, flatter scales.

- coras.* **P. coras** *Cr.* (= *peckins Ky.*, *wamsutta Harr.*) (181 c, d) is a smaller, squat species, blackish-brown, in the basal and larger costal-marginal half with small subapical and postdiscal spots; also on the hindwing there is a broad postdiscal band of spots, the second from above being very long, proximally and distally projecting from the row. The ϕ is without the reddish-yellow basal half. Canada to Virginia, Kansas and Iowa.
- baracoa.* **P. baracoa** *Luc.* (= *amadis H.-Schöff.*, *myus French*) (181 d) is above reddish-yellow, at the margin olive-brownish with a similar longitudinal spot behind the cell to the margin and from the proximal margin on both sides of the stigma; hindwing unmarked, fringes ochreous-yellow. In the ϕ only the costal margin is broadly reddish-yellow and 2 small postdiscal spots. Beneath of a very dull colouring with a somewhat lighter postmedian macular band. Florida and Cuba.
- sabuleti.* **P. sabuleti** *Bsd.* (= *genoa Plötz*) (181 d) looks above like a small, squat *H. phylaeus* with more darkened margins, especially the hindwings are bordered darker. Beneath lighter with still lighter spots being proximally and distally bordered by oblong black spots. California.
- chispa.* **P. chispa** *Wright* (181 d) is only half as large, above still more broadly bordered with dark, so that the wedge-shaped spots are less prominent. The under surface is purely olive-grey with a distinct, coherent, whitish postdiscal band of the hindwing without the black spots of the preceding. California.
- ignorans.* **P. ignorans** *Plötz* (181 e) is apparently allied to *chispa*, the colour is a purer golden yellow, the black margin of the hindwing very broad. Beneath the hindwing is darker, almost blackish-brown, the light postdiscal band similarly shaped as in *coras*, with a fine light anteterminal line. Venezuela.
- winslowi.* **P. winslowi** *Weeks* is doubtfully placed here. Above dark brown, towards the base reddish yellowish-brown, in the disc golden brown, stigma black. Hindwing dark brown, in the disc tan-coloured, at the proximal

margin haired golden brown. Beneath tan-coloured, basally black, at the proximal margin drab. Hindwing almost golden orange, towards the proximal margin darker, with a dark brown marginal line. Expanse of wings: 28 mm. Venezuela (Suapure).

P. lina Plötz (181 d) is a very dark species; in the ♂ scarcely lighter spots project on the forewing, *lina*. the fringes are contrasting reddish-yellow; the ♀ is more distinctly spotted reddish-yellow, the hindwing also exhibits a rufous postdiscal spot into which a black longitudinal ray extends from the cell. Hindwing beneath yellow with oblong black marginal and discal spots. Colombia.

82. Genus: **Catia** G. & S.

Antennae half as long as the costal margin, club stout and short with a pointed, slender, bent apex; palpal terminal joint stout, conical, upturned. Veins as in *Thymelicus*. The ♂ scent-scale spot consists of 4 parts: an oval velvety spot on the median between and often yet behind the rise of the median veins, on the base of the submedian a small roundish spot, between both there is a broad, grey scale-stripe, and finally another larger spot of modified scales. Middle and posterior scales strongly spined.

C. druryi Latr. (= pustula Hbn., otho Bsd., egeremet Scddr., aetna Scddr., ursa Worth) (181 e) is *druryi*. very similar to *Thymelicus athenion* (181 c), blackish-brown with a black stigma: on the forewing the costal margin, sometimes the cell, a discal spot behind the cell, and 3 subapical dots reddish-yellow; also the hindwing often exhibits extinct discal spots. Beneath reddish-yellow, in the proximal half blackish-brown with 2 or 3 postcellular spots; hindwing with a row of light yellow dots near the distal margin. Eastern States, Georgia, Mexico to Brazil. — The green larva with its brown head lives on *Sisyrinchium* and changes into a green pupa.

C. ophites Mab. is larger than *druryi*. Forewing orange, at the apex and distal margin black with *ophites*. an oblong-quadrangular inner-angular spot as far as the stigma which extends in a black oblique band to the base; from the cell-end a black stripe extends to the margin. Hindwing the same, at the costal margin darkened, as well as at the anal angle. Beneath reddish-yellow, the base of the forewing and spot of the proximal angle are black, the proximal margin itself whitish. The ♀ is similar, more broadly bordered with black, beneath redder. Brazil, Antilles.

C. pudorina Plötz (= minaya Schs.) (181 e) is closely allied. Wings dark brown, fringes grey; forewing *pudorina*. with an indistinct, very small, light spot behind the lower cell-angle, reddish-brown scales at the base of the costal margin and an olive-haired proximal margin; the hindwings are haired the same. Beneath the forewing is blackish with a grey proximal margin and a red-brown costal margin and apex; beside the small spot of the upper surface there is below it another one; hindwing reddish-brown with a dark discal shade and a light cellular spot before it; before the distal margin a lighter shade. Expanse of wings: 27 mm. Tijuca.

C. jobrea Dyar (181 e, f) is above bronze-black; two thirds of the costal margin are broadly reddish- *jobrea*. yellow, as well as 3 small subapical spots; postdiscal spots as in *pudorina*, but more distinct. Hindwing in the disc lighter, reddish-yellow, with traces of 2 or 3 small spots behind it. Beneath the forewing is reddish-yellow above the blackish proximal margin; spots as above; hindwing yellow, dusted with reddish-yellow, with a faint, light postdiscal band. In the ♀ the reddish-yellow costal margin is absent. Mexico (Guerrero). The species was recently declared to be synonymous with *otho* = *druryi* by the author himself!

C. misera Luc. (= mago H.-Schöff.) (181 e) is larger, in the ♂ much darker, the light spots scarcely *misera*. visible, the costal margin dark; the ♀ with very small yellow postdiscal spots. Beneath likewise unicoloured dark, only the proximal margin of the forewing somewhat lighter, grey, and the costal margin somewhat ferruginous-yellow. From Cuba.

C. gemma Plötz (= ravola G. & S.) (181 f). Above very bright reddish-yellow with a black apex *gemma*. and distal margin and a black, postdiscal longitudinal stripe. Behind the stigma a large, grey scent-scale area. Beneath almost uni-coloured reddish-yellow. Antilles, Dominica.

C. vesuria Plötz (181 f) is perhaps a somewhat smaller darker local form of the preceding from *vesuria*. Jamaica; the distal margin is broader black, especially the hindwing is so broadly bordered with black that only a triangular, reddish-yellow discal spot remains. Beneath the hindwing is somewhat dusted olive-greenish from which a lighter yellow postdiscal band projects.

83. Genus: **Ochlodes** Scddr.

Almost like *Hylephila*: the antennal club is somewhat longer; the ♂ scent-scale spot consists of a linear stigma, on both sides is an area of differentiated scales.

O. nemorum Bsd. (= yreka Edw.) (181 f) is above reddish-yellow with a jet-black stigma and a black *nemorum*. distal margin into which the light veins extend somewhat, and a dark postcellular spot. Beneath very much duller and lighter, in the inner-marginal part of the forewing black with a large light spot. Hindwing strewn with yellowish-grey, with an indistinct light postdiscal band. California.

- sylvanoides*. **O. sylvanoides** Bsd. (= *sonora* Scddr.) (181 f, g) is very similar, of a deeper reddish-yellow, towards the margin more reddish-brown, the black margin more blurred, proximally not forming such wedge-shaped spots. Beneath the hindwing is of a purer olive-grey, the white postdiscal band is more distinct, a roundish cellular spot near the base the same. Pacific States, Colorado, Nebraska. — f. *utahensis* Skinner is larger and lighter, beneath on the hindwing spotted greenish-white. Utah, Idaho, Colorado.
- agricola*. **O. agricola** Bsd. (= *francisca* Plötz) (181 g) is smaller, lighter reddish-yellow, the hindwing much more extensively yellow with a narrow blackish margin. Beneath reddish-yellow, forewing at the proximal margin black with a large, whitish spot. Hindwing almost unmarked. California, Nevada, Washington, also reported from Mexico.
- snowi*. **O. snowi** Edw. (181 g) is a much darker and larger species. Also the ♂ is dark brown above, behind the stigma with a series of bone-coloured spots, 3 subapical dots and 2 punctiform spots at the cell-end; proximal margin haired reddish-yellow; hindwing with 3 or 4 postdiscal spots; in the ♀ all the spots are larger. Beneath red-brown, all the spots more distinct, lighter, widened towards the proximal margin on the forewing. South Colorado to Arizona and Mexico (Puebla).
- samenta*. **O. samenta** Dyar (181 g). Bronze-black, behind the stigma with 3 yellow spots, the uppermost being quadrangular, partly transparent and with 3 subapical dots. Hindwing with a postdiscal band of 3 reddish-yellow united spots. Beneath the spots of the forewings are enlarged, the lowest wedge-shaped, reddish-yellow, the disc black. Hindwing brown, the band reddish-grey, besides with a small, straight basal band, behind which there is a dark shade. Mexico (Guerrero, Guadalajara).
- leonardus*. **O. leonardus** Harr. (181 g, h). Large, bright yellowish-red species with broad black margins and apex of forewing, in the forewing 2 subapical yellowish-red, small spots, 2 more below them towards the margin. The ♀ is quite blackish-brown without the reddish-yellow basal colour with larger, light yellowish-white spots. Beneath dark brick-coloured, in the proximal part of the forewing black with large, bright yellowish-white spots. Atlantic States.
- meskei*. **O. meskei** Edw. (= *straton* Edw.) somewhat resembles *Erynnis attalus* (180 i), it is larger, above more brightly and clearly marked. Beneath uni-coloured bright orange, only at the proximal margin and base of the forewing blackish-brown; the spots of the upper surface smaller, but somewhat lighter; at the cell-end there are 2 faint, yellow, horizontal strigiform spots. Hindwing uni-coloured except 2 or 3 yellowish dots. From Texas.
- milo*. **O. milo** Edw. (181 h) is small, fiery reddish-yellow, distal margin only narrowly darkened, towards the proximal margin in long, pointed wedge-shaped spots; especially the hindwings very narrow. Beneath monotonously dull yellowish-red, almost without any marking. Oregon.
- pratincta*. **O. pratincta** Bsd. (181 h) is above almost the same, the margin a little broader and darker. Beneath more yellowish-grey with an indistinctly lighter marking, particularly a pointedly broken postdiscal band of the hindwing. California, Washington.
- verus*. **O. verus** Edw. is allied to *agricola*. Above yellowish-red with a blackish-brown distal margin, being broad on the forewing, narrow on the hindwing; the subapical dots indistinct; at the upper end of the stigma there is a blackish-brown spot extending to the dark margin. Beneath bright reddish-yellow, forewing at the base and in the place of the stigma black, the spots of the upper surface hardly visible; hindwings entirely unmarked. The ♀ is lighter, the spots are more distinct, semi-diaphanous. Expanse of wings: 1 inch. California (Havilah).

84. Genus: **Limochores** Scddr.

Antennal club strong and long with a short, reverted apex; palpal terminal joint short, obtuse. The linear scent-organ extends from the rise of the upper median vein to the submedian. Scarcely to be separated from *Ochlodes*.

- bimacula*. **L. bimacula** Grt. & Rob. (= *acanoetus* Scddr., *illinois* Dodge) (181 h) is a large, blackish-brown species; on both sides of the long, narrow scent-scale stripe the ground is lighter reddish-yellow; collar haired ferruginous-brown. Beneath on the duller greyish-brown forewing the costal margin and cell are reddish-yellow, behind it there are 2 whitish spots. The dark grey hindwing is strewn with ferruginous-yellowish. From the Atlantic States.
- pontiac*. **L. pontiac** Edw. (= *conspicua* Edw., *orono* Scddr.) (181 h) is smaller, the reddish-yellow ground very much more extensive, occurring also in the disc of the hindwing. The ♀ exhibits on the forewing a bone-coloured, on the hindwing a reddish-yellow macular band. Beneath light reddish-brown, the spots only indistinctly lighter. Atlantic States.
- manataaqua*. **L. manataaqua** Scddr. (= *cernes* Harris) (181 i). Above olive brownish-grey, on both sides of the stigma and at the base of the costa reddish-yellow; the ♀ is blackish-brown with bands of bone-coloured spots. Beneath light grey with a postdiscal light macular band on the forewing; on the hindwing the spots are more separated, in a slightly bent row. New England and Canada to the west as far as Nebraska. — f. *lidia* Plötz (181 i) is above darker, without a reddish-yellow costal area, beneath the hindwings are more yellowish-red.
- yehl*. **L. yehl** Skinner (181 i) is bright reddish-yellow, at the distal margin and apex broad and deep black, in the latter with 2 small reddish-yellow subapical dots and a dark subcostal stripe. Beneath lighter, hindwing

monotonously light cinnamon-coloured with 4 round yellowish spots arranged in a semicircle, and a small spot near the base of the cell. From Florida.

L. dion *Edw.* looks above very much like the following *arpa*, but it is discernible by the hindwing showing on its dark reddish-yellow ground a light reddish-yellow wedge-shaped streak in the inner-marginal third, whilst in *arpa* it is equably dark. From Canada to Nebraska. *dion.*

L. arpa *Bsd. & Lec.* (181 k) resembles a very large, dark *bimacula*; the bright parts on both sides of the stigma are more olive, not so reddish yellow. Beneath the hindwing is of a purer ferruginous-yellow. Golf States. *arpa.*

L. palatka *Edw.* (= *floridensis* *Plötz*) (181 k) is very large, yellowish-brown, broadly margined with black, with a comparatively small, narrow stigma and small black strigiform spots behind the upper cell-angle. The blackish-brown ♀ has smaller, separate postdiscal spots than the following *byssus*, whereas the whole disc of the hindwing is reddish-yellow. Beneath as above, but duller, the hindwing uni-coloured greenish-brown or reddish-brown. Only in Florida, from the Indian River. *palatka.*

L. byssus *Edw.* (181 k) is very similar, the scent-scale stripe is much longer; the distal margin of the hindwing is not so sharply defined as in *palatka*, but gradually passes over into the yellowish-red, greenish reflecting discal colour. The ♀ has more coherent, larger macular bands, whereas on the contrary the hindwing only shows some minute, diffuse postdiscal spots. Beneath orange-red, base and proximal margin of forewing black. Florida. *byssus.*

L. cernes *Bsd. & Lec.* (= *ahaton* *Harr.*, *taumas* *Seddr.*, *themistocles* *Plötz*) (181 k) is smaller than *manataqua* and stouter, but it is otherwise very much like it. Above reddish-yellow, in the ♂ mostly only at the costal-marginal part, but the reddish-yellow colour may also extend farther towards the proximal margin. The ♀ is dark brown with a light yellow postdiscal band and 3 small subapical spots. Beneath the hindwing is light brownish-grey with a hardly visible, lighter macular band behind the cell. *cernes.*

L. aurinia *Plötz* (181 k) is much darker coloured, the basal part dark yellowish-brown, tinted olive-greenish, the whole distal half of the wing blackish-brown. Disc of the hindwing reddish-yellow. Beneath duller ferruginous-brownish, forewing in the basal part of the proximal margin black. Jamaica. *aurinia.*

85. Genus: **Euphyes** *Seddr.*

Antennal club thick and long with a short turned down apex. The obtuse palpal terminal joint projects a bit from the hair of the second joint. The shape of the wings is somewhat longer owing to the longer proximal margin of forewing. Stigma similarly placed as in *Limochores*, but thicker, glandular.

E. metacomet *Harr.* (= *rurea* *Edw.*) (182 k) looks above like *Th. athenion*, uni-coloured blackish-brown with the black stigma, beneath the same, though somewhat lighter. The ♀ has 2 semi-transparent, small subapical spots and 2 similar ones behind the lower cell-angle. Beneath the hindwing is light brown or purple-brown with traces of small, light postdiscal spots. United States to Canada. *metacomet.*

E. vestris *Bsd.* (= *kioyah* *Reak.*, *osceola* *Lintn.*) is regarded by DYAR as the typical form of *metacomet*; it is scarcely different, with a slight reddish reflection towards the base and proximal margin. California. *vestris.*

E. verna *Edw.* (= *pottawattomie* *Worth.*, *velutina* *Plötz*) (182 a) differs from *metacomet* by whitish, semi-transparent spots behind the stigma, subapically, and a similar longitudinal streak in the cell. Beneath lighter, more reddish, on the hindwing with a bent row of small light postdiscal spots. Atlantic States. *verna.*

E. osyka *Edw.* (182 a) looks above like *metacomet*, behind the stigma we see traces of a reddish-yellowish lighter part. Beneath quite monotonously greyish-brown. Golf States, Indiana. *osyka.*

E. menopis *Schs.* Blackish-brown with a black stigma, in the basal half olive-ochreous, at the costal margin yellow, with a yellow spot in the upper cell-end, 3 longish, yellow, small subapical spots and a yellow shade behind the stigma. Hindwing haired olive with some postdiscal, faint, ochreous-yellow patches. Beneath the forewing is black in and below the cell, distally reddish-brown, the spots lighter, at the anal angle a black nebulous spot. Hindwing yellow, at the proximal margin dark grey, basal and marginal areas reddish-brown; an antemarginal, irregular row of dark spots, also basally and in the disc, those below the cell and at the distal margin being violet, the others red-brown. Expanse of wings: 22 mm. Peru. *menopis.*

86. Genus: **Oligoria** *Seddr.*

Antennae and palpi as in the preceding. Chiefly separated by the absence of the scent-scale stripe in the ♂.

O. maculata *Edw.* (= *deleta* *H.-Schäff.*) (181 a). Above brownish-black with a very small, hyaline subapical and 2 postdiscal spots which are larger in the ♀. Beneath just as dark brown, forewing with a whitish *maculata.*

inner-angular spot, hindwing with 3 small discal spots, the uppermost being farther remote, near the costal margin. Southern Atlantic States. Perhaps also *grossula* H. Schöff. belongs to it as a synonym.

87. Genus: **Poanes** Seddr.

Antennae shorter, club thicker than in *Oligoria*. The second palpal joint very much hairily scaled, terminal joint pointed. ♂ also without a stigma.

massassoit. **P. massassoit** Seddr. (182 a) looks in the ♂ above almost like *Mastor bellus*: blackish-brown with yellow fringes. Beneath at the costal margin and distal margin bordered with reddish, with 3 light subapical and 2 or 3 postdiscal small spots, hindwing reddish-yellow bordered with reddish-brown. The ♀ has on the forewing the spots also above, and on the hindwing 3 or 4 postdiscal spots, 2 of them far towards the costal margin. Beneath the hindwings are greyer though very variable. — f. *suffusa* Laurent is beneath dusted darker grey. Atlantic States, Colorado.

88. Genus: **Poanopsis** G. & S.

Distinguished from the preceding genus by shorter, broader wings, a shorter and thicker terminal joint of the palp and a scent-scale stripe extending from the rise of the upper median vein to the submedian. Only 1 species:

puxillus. **P. puxillus** (= pupillus Plötz?) (181 a). Yellowish-brown, fringes whitish-grey; forewing with 2 subapical dots and 2 white hyaline spots in the disc between the upper median and middle radial vein and one at the cell-end; hindwings not spotted. Beneath more yellow, forewing marked the same as above, hindwing with a faint postdiscal macular stripe. Mexico.

89. Genus: **Paratrytone** G. & S.

Separated from *Atrytone* by the costal margin of the hindwing being clad with long hair, and a linear scent-scale stripe from the base of the upper median vein to the submedian.

rhaxenor. **P. rhaxenor** G. & S. (182 b). Blackish-brown with a darker stigma; forewing with a lunar spot between the median veins and a small one behind it, one above the submedian vein and 2 minute ones behind the cell-end, as well as 3 subapical dots, all of which are light yellow. The hindwing shows behind the middle in the costal half a similar band. Beneath brownish-red, forewing at the proximal margin blackish, spots as above; hindwing very peculiarly marked with 3 longish spots in the cell, behind it and near the anal angle beside the macular band. Mexico.

polyclea. **P. polyclea** G. & S. (182 b) resembles *Atrytone melane* (182 c), but it has a cellular spot and a very prominent stigma. Beneath the colour is quite different: greyish-black, the forewing in the proximal half darker, the spots as above; hindwing strewn with yellow, the transverse band from above very indistinctly visible. Mexico (Guerrero).

aphractoia. **P. aphractoia** Dyar (182 c) is above blackish-brown, in the cell-end there is an oblique quadrangular, yellowish hyaline spot, 3 small ones behind it subapically, and 3 postdiscal ones in an oblique line, the middle one being the largest; the stigma is all round encircled by black. On the hindwing there are in a straight line 4 yellow spots, alternatingly a large one and a small one. Beneath somewhat duller, the lowest spot of the forewing white and enlarged, disc black. Hindwing dusted with a dark red, the spots white, beside them 2 small ones at the costal margin and one in the cell. Mexico (Popocatepetl Park), taken at an altitude of 13 000 ft.

howardi. **P. howardi** Skinner (182 b). Above almost as *viator*, but with a dark brown diffuse spot behind the cell, almost flowing together with the dark distal margin. Scent-scale stripe present here, but of the same colour as the ground, therefore scarcely visible. Beneath doe-coloured, with a triangular, darkened base of the forewing; hindwing very light with 4 or 5 faintly darker, small discal spots. Florida.

aaroni. **P. aaroni** Skinner (182 b) is only half as large, the dark margins of the wings narrower, the dark spot behind the cell of the forewing absent. Beneath the forewing is black at the base, behind it lighter brown than above, the distal margin bordered with cinnamon-brown. Hindwing light cinnamon-coloured, unmarked. The ♀ is larger, lighter, the markings more blurred. Southern Atlantic States.

scudderi. **P. scudderi** Skinner has a much more prominent stigma, the dark borders of the wings are faint, otherwise very much like *howardi*. From Colorado.

90. Genus: **Phycanassa** Seddr.

Antennae short, palpi somewhat longer than in *Poanes*, turned forward. Veins as there. ♂ without a stigma.

viator. **P. viator** Edw. (182 b) is a large, reddish-yellow species with broad blackish-brown margins, very conspicuous by the absence of the stigma. The blackish-brown ♀ is in the disc and at the proximal margin

somewhat reddish-yellow, and on the forewing it has postdiscal, subapical bone-coloured spots and 2 smaller ones in the cell-end. Beneath paler, marked as above, on the hindwing besides with a light longitudinal ray from the base to the middle of the distal margin. Atlantic States.

P. psaumis *G. & S.* (182 c) is allied to the preceding, but the 2 spots between the median veins are *psaumis*, strongly angled. The under surface is much darker and more monotonous. Mexico (Jalisco).

P. azin *Mab.* is likewise very closely allied, but much smaller. Colombia *azin*.

91. Genus: **Atrytone** *Seddr.*

The antennae scarcely attain half the length of the costal margin, the club is short and thick with a short hook-shaped apex; terminal joint of the palp very short, quite abruptly ending in a short apex. Body strong, almost squat; middle and posterior tibiae strongly spined. The ♂ is without a pronounced scent-scale stripe, but there are often in its place modified and therefore inconspicuous scent-scales of the ground-colour.

A. delaware *Edw.* (= *logan Edw.*, *vitellius Streck. nec F.*) (182 c) is above reddish-yellow, towards *delaware*, the margin on the forewing broadly, on the hindwing narrowly darkened with a spot-like darkening behind the cell. The ♀ is larger, with a darkened basal half of the forewing. Beneath orange-red, at the base and proximal angle of the forewing blackened. Pennsylvania, Florida, Mexico to Guatemala. For this species the genus *Anatrytone* was established.

A. zabulon *Bsd. & Lec.* (= *erratica Plötz*) (182 c). This species and the following have brought *zabulon*, about an amazing muddle in the literature pertaining to them. It is above on the whole lighter; more sulphur-coloured, the bordering of the dark distal margin proximally on an average more dentate, more distinct. Beneath the base of the hindwing is less extensively darkened, in the yellow discal area there are particularly towards the proximal margin small brown spots. Southern Atlantic States as far as Mexico.

A. hobomok *Harr.* (= *zabulon Plötz*) (182 c, d) is above mostly more reddish-yellow, the black distal *hobomok*, margin proximally less irregular, more blurred. Beneath the base of the hindwing is broader and more deeply darkened, dark spots in the median space are nearly always absent. — f. **pocahontas** *Seddr.* (= *quadaquina Pocahontas*, *Seddr.*) (182 d) is a dimorphous ♀-form very much darkened above and beneath, above quite blackish-brown with minute bone-coloured spots. Atlantic States. *pocahontas*.

A. rolla *Mab.* (= *piso Plötz*) (182 d). Above almost as *hobomok*, but the inner-marginal part of *rolla*, the hindwing is much broader black. Easily separable by the quite reddish-yellow hindwing beneath with indistinct ferruginous brownish spots, the inner-marginal area being scarcely darkened, and with a small black cell-end dot. Costa Rica, Panama to Colombia.

A. perfida *Mschlr.* (182 d) is very closely allied to *rolla*, it is more slender, with more tapering wings, *perfida*, lighter yellow, the inner-marginal part of the hindwing is not so broadly darkened, the cell-end spot of the forewing is somewhat larger. Beneath the proximal margin of the forewing is broader black, the apical part fiery reddish-yellow; hindwing yellow without any markings at all, dusted somewhat reddish. Colombia.

A. vitellius *F.* (= *insularis Mab.*, *hübneri Plötz*) (182 c) is externally quite similar to *delaware*; the *vitellius*, black veins are finely prominent, and the submedian and cellular folds are towards the base striped black. Beneath the blackening is absent at the proximal angle of the forewing, the hindwing is strewn with a greyish yellow. West Indian islands, also from Guatemala and the Amazon.

A. mella *G. & S.* is very closely allied to *perfida*, but the margins of the wings are above broader *mella*, black, besides there is an interrupted, blackish-brown longitudinal stripe along the median. Mexico to Brazil and Bolivia.

A. eulogius *Plötz* (= *mellona G. & S.*) (182 c) resembles *mella*, the reddish-yellow colour of the wings *eulogius*, is very much confined by broader margins of the wings projecting dentately or wedge-shaped on the lower median vein and above it between the veins. Beneath the hindwing is reddish-yellow, strewn with cinnamon-colour, with a lighter postdiscal band and cellular spot. Mexico, Panama, Guiana.

A. gladolis *Dyar* is allied to *mella*. Above broadly yellow, veins and distal margin blackish; on the *gladolis*, median there is an irregular, black longitudinal band, projecting at the end into the cell and from there on the middle radial vein towards the margin; hindwing in the disc reddish-yellow, veined black. The ♀ is more intensely marked black, beneath at the proximal margin of the hindwing with a broad black stripe. Expanse of wings: 32 to 36 mm. British Guiana. The larva lives on sugar-cane.

A. heberia *Dyar.* Above blackish-brown, costal margin as far as the cell-end reddish-yellow; 3 sub- *heberia*, apical and 4 postdiscal reddish-yellow spots, the lowest narrow, the spot above it rectangular, the second from above wedge-shaped. Hindwing with a yellow cell-spot and 5 postmedian, wedge-shaped spots. Beneath reddish-yellow, the inner-marginal part shaded with black, and in the disc veined black. Hindwing yellow with a broad black triangular spot before the proximal margin. In the ♀ the spots are white, larger and more quadrangular.

the hindwing beneath tinted grey. Expanse of wings: 29 to 33 mm. British Guiana. The larvae were fed on sugar-cane.

myron. **A. myron** G. & S. (182 d) entirely resembles the following *helva*, but the spots are more whitish-yellow, especially in the ♀ bone-coloured, the inner-marginal spot longer, the discal spot larger. Beneath the lowest spot is much larger and dirty white. Mexico to Colombia and Bolivia.

monica. **A. monica** Plötz (182 e) is allied to *eulogius*; above there are more yellow spots, the postdiscal spots thereby almost touch the subapical ones, also at the cell-end there is a large, bipartite, reddish-yellow spot, and the submedian spot is twice as large, distally gnawed out. Beneath at the cell-end of the forewing there is more black marking, on the hindwing the light postdiscal band is dying away towards the proximal margin, the colour is not so reddish-yellow, more olive greyish yellowish. From Brazil (Blumenau).

helva. **A. helva** Mschr. (= *sethos* Mab.) (182 e) is above blackish-brown with 3 yellowish-red, postdiscal and 3 small subapical spots, as well as a lighter longitudinal streak at the cell-end; hindwing with 2 or 3 rather indistinct small spots behind the cell and yellowish fringes. Beneath dull yellowish-red, strewn with grey, the proximal half of the forewing black with the spots as above, but lighter; hindwing with traces of a lighter postdiscal macular band. The base of the costal margin of the hindwing is above densely haired black. Mexico, Nicaragua, Panama, Colombia, Guiana, and Amazon.

melane. **A. melane** Edw. (= *vitellina* H.-Schäff.) (182 e) looks like *helva*, the yellowish-red spots are larger, the disc of the hindwing behind the middle extensively reddish-yellow; in the ♀ the spots of the forewing are bone-coloured, the spots of the hindwing reddish-yellow. Beneath the hindwing is in the basal half densely strewn with cinnamon-red, the postdiscal band more distinct and broader. California, Mexico, Guatemala, Costa

zachaeus. Rica and Panama. — f. **zachaeus** Plötz is a darker form from Surinam with above quite blackish-brown hindwings.

Note: MABILLE here mentions a form „marmorosa“. The citation added (Korr.-Bl. Zool. Mineral. Ver. Regensburg), refers however to one of the *Eudamus* mentioned on p. 853, perhaps a form of *santiago* (161 a). MABILLE has certainly mixed it up.

gala. **A. gala** G. & S. (182 e). Above as *melane*, but with 2 small spots in the cell of the forewing, the band of the hindwing being longer and inwardly curved towards the proximal margin. From Mexico.

monticola. **A. monticola** G. & S. (182 f) is easily recognizable by the sharply angled creamy white macular band of the hindwing on a deep cinnamon-red ground; forewing beneath with 2 or 3 roundish, orange postdiscal spots and 3 white subapical dots, which are above yolk-coloured like the discal spots. It differs from the very similar *niveolimbus* by dark fringes being on the hindwing very slightly speckled, and a dark costal margin. Mexico, at an altitude of 8 to 10 000 ft.

niveolimbus. **A. niveolimbus** Mab. is easily discernible from *monticola* by the white costal margin and white fringes. The spots are not yolk-coloured, but more whitish hyaline. From Guatemala.

ulphila. **A. ulphila** Pl. (182 f) is very closely allied to *monticola* and perhaps the same species. The yellow spots of the forewing are much larger and more numerous; beneath the hindwing is lighter, the white band extends with its tooth farther towards the margin and there is a cell-spot, the forewing exhibits near the proximal angle a very large, yellowish spot. Mexico.

lunida. **A. lunida** Mschr. (182 f) is similarly marked. On the dark forewing the 2 central spots are whitish hyaline, the others yolk-coloured; near the apex there are below the 3 subapical spots farther towards the margin 2 more small yellow spots. Hindwing without any markings. Beneath the forewing is as above; the hindwing dark olive-grey with a faded, broad, light postmedian band. Colombia. Figured according to a ♀ of Plötz.

augustus. **A. augustus** Plötz (182 f) is above not unlike *gala* and has a large, roundish, yellow spot in the cell-end; the postdiscal band of yellowish spots extends in a very oblique direction right towards the apex; the yellow macular band of the hindwing is long, towards the proximal margin inwardly bent, the second spot from above projects towards the margin. Beneath similarly marked as *monticola*, but the white band is darker, the ground not cinnamon-red but greyish-brown. Brazil.

urqua. **A. urqua** Schs. is above olive-brown, with a fine black marginal line and grey fringes. The forewing only shows a small, roundish, white spot behind the lower cell-angle. Beneath lighter; here we see on the forewing another small, subapical spot and a grey strigiform spot near the proximal angle; on the hindwing post-discally a hardly lighter, bent band, and a dark grey nebulous stripe along the proximal margin. Expanse of wings: 27 mm. Castro, Paraná.

paranensis. **A. paranensis** Schs. Above dark brown, lighter at the cell-end and with a light subapical streak. Hindwing with a black cell-end spot. Beneath the forewing is lighter brown, the apex grey, near the proximal angle a yellowish-grey nebulous spot; scarcely visible, small, lighter postdiscal spots in an oblique line. Hindwing light grey with a velvety black cell-spot and a similar spot below the lower median vein. Inner-marginal part broad light brown, before the distal margin a dark line. Expanse of wings: 31 mm. Castro (Paraná).

brasina. **A. brasina** Schs. Above dark brown, hindwing haired olive yellow. On the forewing between the median veins a quadrangular, small hyaline spot, a smaller spot above it and 3 subcostal dots. Beneath lighter,

on the forewing the costa and apex are reddish-brown, the proximal angle spotted whitish. Hindwing light brown, strewn with reddish-brown, especially densely at the base and costal margin, with a broad dark discal shade joining a dark inner-marginal streak near the proximal angle. Expanse of wings: 26 mm. Castro (Paraná).

A. inimica *Btlr. & Drc.* (= *lupulina* Plötz) (182 f) has above on the dark brown ground scarcely visible, minute lighter spots in the cell, postdiscally and subapically. Beneath the forewing, towards the proximal angle, is broadly yellowish, the hindwing deep cinnamon-red with 2 dentate, dark discal bands and a broad marginal band. Mexico to Panama, Colombia, Venezuela.

A. chingachgook *Weeks* is above dark brown with 3 or 4 ferruginous small subapical spots and 3 larger whitish postdiscal spots. Beneath the same, at the apex and costal margin tinted somewhat ferruginous-brown, the submedian area drab, towards the base black. Hindwing ferruginous-brown; from the costal angle to the middle of the proximal margin extends a light band scaled ferruginous, a similar one nearer to the base. Venezuela (Suapure).

A. argynnis Plötz (182 g) is very doubtfully placed here. Above blackish-brown with 3 subapical dots, 2 postdiscal white, in the ♀ more yellowish spots and an ochreous-yellow submedian patch. Hindwing with an extinct, in the ♀ much clearer postdiscal band of ochreous-yellow spots, the two middle spots of which project far towards the base. Beneath the hindwing is chestnut-brown like the apex of the forewing; in the disc golden yellow with a postdiscal row of silvery white spots; the spot opposite the cell and a large anal-angular spot are removed more towards the base, the former being proximally bordered by a black cell-end spot. Brazil.

A. zela Plötz (182 g) is a very different species. Above yellowish-brown, on the forewing broadly bordered with black; the median black with a spot-like thickening at the lower cell-end, another black spot at the costal margin behind the cell and in the middle of the hindwing. Beneath almost the same, the inner-marginal part of the forewing broader black, the spot on the hindwing almost bipartite. From Montevideo.

A. arogos *Bsd.* (= *mutius* Plötz, iowa *Seddr.*) (182 g). Here follow some more species being considered by other authors to belong to the genus *Phycanassa*. Above like a small *Phyc. viator* (182 b), yellowish-brown, with very broad blackish-brown margins and a very fine black cell-end streak of the forewing. Beneath the forewing is more broadly darkened in the inner-marginal area, the greenish-yellow hindwing without the black margin. Golf States, Iowa, Nebraska.

A. carolina *Skinner* (182 g) for which the genus *Epiphes* was established, looks above a little like *monticola* (182 f), with roundish, yolk-coloured spots, and a cellular spot on a dark brown ground. Beneath the forewing is the same, though more indistinctly marked, the costal margin is brownish-yellow; the hindwing is yellow with very small blackish-brown spots. Described from North Carolina and apparently very rare.

A. streckeri *Skinn.* resembles *delaware* above, but it is darker in its colour. Beneath very much like *povesheik*; expanse $1\frac{1}{2}$ inch. Florida. The ♂ stigma is a long, narrow, black line from the median to the submedian, obliquely cutting through 2 internerval spaces; at the cell-end a distinct, black V-shaped spot.

A. taxiles *Edw.* (182 g) has above a blackish-brown distal margin only half as broad. Beneath the ♂ forewing is bright yellow, at the base black, the distal margin light brown; hindwing lighter yellow, distally bordered with a light brown, near the base and in the middle traversed by irregular, light brown margins. Colorado to Arizona.

A. ruricola *Bsd.* is yet placed here by different authors. But as this uncertain species has a broad black stigma, it will probably not belong hereto. Stated from California.

92. Genus: **Augiades** *Hbn.*

Antennal club rather long, the hook-shaped apex slender, but rather short. Posterior tibiae with long fringes and the usual 2 pair of spurs. The linear stigma extends from the rise of the upper median vein to the submedian. The genus is preponderantly palearctic and Asiatic, but it has also some representatives in the New World.

A. librita Plötz (= *hecale* G. & S.) (182 i). Above bright reddish-yellow, bordered with black, with the broad black stigma being continued into a large, subapical black spot touching the black apex on the upper radial vein; veins striped black. Beneath the hindwing is especially towards the costal margin strewn with a yellowish grey, with a lighter postdiscal band dying away towards the proximal margin. Mexico, Guatemala.

A. aligula *Schs.* is placed here with a proviso, because the scent-scale stripe is parted by the lower median vein. Above as the preceding, the transcellular black spot quadrangular and larger, touching the black margin in two places. Hindwing in the inner-marginal part haired olive. Beneath also like *hecale*, the transverse vein and both the median veins black, large black spots at the proximal angle, small subapical spots distinctly light yellow. The ♀ is brown, scantily haired yellowish-red, spotted yellow at the cell-end, postdiscally and

subapically, and below them near the margin (2 small spots); the hindwing also shows a cellular spot and a postdiscal row of yellow, oblong spots. Beneath darker than the ♂, the spots more distinct. Expanse of wings: 30 mm. Petropolis.

heras. **A. heras** *G. & S.* (182 h) is blackish-brown, the stigma inside almost lead-coloured; at the cell-end two small, reddish-yellow spots, behind them a quadrangular spot and 3 below the apex; the costal margin is densely, the basal part scantily strewn with reddish-yellow. Hindwing with a postmedian band of reddish-yellow spots. Beneath red-brown, basal half of the costal margin and submedian area blackish. Hindwing with 2 indistinct, bent bands of ochreous-yellow spots. Mexico (Guerrero).

chalcone. **A. chalcone** *Schs.* has dark brown wings haired ochreous at the base, at the costal margin and in the cell; in the cell-end there is a small, yellow spot, behind it an obtusely broken row of spots along the stigma almost to the apex; hindwing haired olive at the basal half, with a yellow cellular spot and a row of spots behind it. Beneath ochreous olive, forewing in the proximal half black, the spots darker, the lower ones larger; spots on the hindwing indistinct and smaller. In the ♀ the spots are larger and semi-transparent bone-coloured. Expanse of wings: 30 to 35 mm. Petropolis.

anita. **A. anita** *Schs.* Above brown, at the costal margin and subapically strewn with dark ochreous, with a small, yellow subapical spot; below the cell and behind the stigma dusted ochreous; proximal margin haired olive. Hindwing with a postdiscal ochreous-yellow band, behind it ochreous dusting. Beneath olive-green, forewing in the proximal-marginal half blackish, in the inner-angular part light ochreous; hindwing with a broad, white postdiscal band. Expanse of wings: 30 mm. Petropolis.

tania. **A. tania** *Schs.* Above as *anita*, but head and thorax greenish, forewing with a yellow spot at the cell-end, the ochreous dusting behind the cell only very scanty. Beneath likewise as *anita*, but with a yellow cellular spot. On the olive-green hindwing there is in the lower cell-angle a small white spot, behind it a narrow, indistinct, light postdiscal line with a white dot above the upper median vein and a larger one below the lower median vein. Expanse of wings: 29 mm. Petropolis.

turbis. **A. turbis** *Schs.* is also closely allied to the preceding; on the brown forewing only the basal half of the costal margin is narrowly ochreous-yellow and a spot-like shade behind the scent-spot; the postdiscal spots are very small, near the distal margin; in the cell-end a yellow spot, and 3 subapical dots. Hindwing basally haired olive, near the distal margin 3 very small yellow spots. Beneath ochreous-brown, marked as above, at the base of the forewing blackish, hindwing with a very small cellular spot and small spots behind it in a bent row. Expanse of wings: 28 mm. Novo Friburgo.

93. Genus: **Buzyges** *G. & S.*

Distinguished from *Atrytone* by a longer antennal club set with dentate scales. Costa of hindwing long-haired; the ♂ without the scent-scale stripe. Only one species:

idothea. **B. idothea** *G. & S.* (182 h) is a very conspicuous, easily recognizable species. Above blackish-brown with a large, yellow discal spot from near the costal margin almost to the proximal margin, the costal margin being yellow, too; 3 small subapical spots and below them 1 or 2 more. Fringes ochreous-yellow. Costa Rica.

94. Genus: **Atrytonopsis** *G. & S.*

Very closely allied to *Atrytone*, but with a distinctly prolonged apex of the forewing; hindwing at the anal angle somewhat lobate. ♂ with a narrow scent-scale stripe from the upper median vein to the submedian, extending obliquely and being somewhat sinuous and interrupted.

deva. **A. deva** *Edw.* (182 d) is a large, lustrous light blackish-brown species with an equally coloured stigma; 3 small subapical dots and 2 small spots between the median veins are bone-coloured transparent. Beneath as above, the forewing near the proximal angle and at the apex grey. Hindwing dusted grey and with a post-cellular band of small brownish-black spots; fringes of hindwings white. The ♀ has larger spots. Arizona, Mexico.

pittacus. **A. pittacus** *Edw.* (182 i) is very similar, smaller, with more numerous spots in the disc and submedian; the hindwing also exhibits a short band. Arizona, Mexico.

python. **A. python** *Edw.* (182 i) is likewise similar, the macular band of the hindwing only composed of 3 dots. The hindwing beneath is more band-like lilac-grey, more variegated. Arizona, Mexico.

hianna. **A. hianna** *Scddr.* (182 i). The ♂ looks above very much like *deva*, but it has only one small spot near the lower cell-angle beside the 3 subapical ones, the ♀ exhibiting 2. The under surface is somewhat lighter, distally greyer, on the hindwing with traces of a marginal band, otherwise as above. Atlantic Sates. — In f. *grotei* *Plötz* there appears yet a hyaline dot in the upper cell-angle, and the under surface of the hindwing is more monotonous.

A. judas Plötz (182 k) perhaps also belongs hereto. Above similar to the preceding, but distally the wings are much lighter grey, and above the 2 hyaline small discal spots there are two more below the subapical spot and farther towards the margin. Hindwing beneath very light grey with indistinct darker spots at the costal margin and below the cell. Novo Friburgo. *judas.*

95. Genus: **Choranthus** Seddr.

Very closely allied to the preceding genus and chiefly only distinguished by a somewhat different course of the scent-scale stripe not beginning from the rise of the upper median vein but more distally to it.

Ch. radians Luc. (= *magica* Plötz) (182 h). Bright reddish-yellow with a black dentate margin, a black strigiform spot at the cell-end and a broad black costal margin of the hindwing. Beneath the hindwing, except the reddish-yellow costal and proximal margins, is olive-green with yellow veins. — f. **ammonia** Plötz is a more intensely darkened form, and f. **bellus** nom. nov. (= *radians* Plötz) (182 k) is an entirely unicoloured dark olive-brown ♀ form with yellow fringes. Cuba. *radians.*
ammonia.
bellus.

Ch. insularis Mab. is closely allied, above the same, but beneath quite different, light orange, at the base of the forewing spotted black. Expanse of wings: 28 mm. St. Thomas. *insularis.*

96. Genus: **Lerodea** Seddr.

Antennal club strong, short; palpal terminal joint obtuse, bent backward. The forewings are higher because the distal margin is much longer than the proximal margin. The ♂ is without the scent-scale stripe.

L. eufala Edw. (= *florida* Mab., *dispersa* Plötz) (182 k) is above dark brown with 2 small, transparent discal dots and 3 subapical dots. Beneath the same, but somewhat paler; abdomen beneath white. Widely distributed from the Southern States through Mexico to Paraguay; Antilles. *eufala.*

L. dysaules G. & S. (182 k) differs by but one cellular spot of the forewing, and a bent, black, triangular band from the costal margin of the hindwing beneath behind the cell-end. Mexico. *dysaules.*

L. fusca Reel (= *concepcionis* Str.?) (182 k) presumably belongs hereto and looks like the preceding. Above blackish-brown, marked as *eufala*, beneath greyish-brown, in the larger ♀ more yellowish-brown. Hindwing without markings; fringes yellowish. Described from Chile. *fusca.*

L. tesera Schs. Above brown, fringes mixed with grey; forewing with the basal half of the costal margin grey; in the cell-end there are 2 very small whitish-hyaline spots above each other, 2 postdiscal ones and 3 subapical ones. Beneath the apex of the forewing is strewn with lilac, the proximal margin broad grey. Hindwing densely strewn with lilac, with a brownish spot in the middle of the costal margin, another one below the cell near the base, behind the middle a broad brownish nebulous band parted by the veins, and some indistinct antemarginal spots. Expanse of wings: 28 mm. Rio de Janeiro. *tesera.*

L. gracia Dyar. Blackish-brown with white fringes, base of forewing grey, in the cell-end a strangulated spot, 3 subapical ones and 4 postdiscal ones, the two upper ones of which are quadrangular and hyaline, the lower ones smaller and not transparent. Hindwing in the disc dusted with yellow, behind the cell in the shape of a spot. Beneath the forewing is basally black, the apex dusted with grey; hindwing strewn with grey, with a long black stripe-spot through the cell, and postdiscal traces of small white spots. Peru, in October. *gracia.*

L. orope Capr. (182 i) almost resembles a *Prenes* without a scent-stripe. Above blackish-brown, on the thorax and bases of the wings lustrous greenish, in the cell of the forewing a small, narrow, whitish stripe, behind it 2 small spots, and 2 subapical dots. Beneath light brownish-grey, in the disc of the forewing black, anally whitish, hindwing with a white cellular dot and 6 postdiscal dots. Brazil. *orope.*

L. dedecora Pl. (182 k) resembles *fusca*, above greyish-brown with 2 subapical dots and one postdiscal dot. Beneath duller greyish-brown, in the disc of the forewing black. From Venezuela. *dedecora.*

97. Genus: **Styriodes** Schs.

Antennae of $\frac{2}{3}$ the length of the costal margin; the latter somewhat convex, before the apex slightly concave, apex sharp. On the forewing the lower median vein rises from the middle of the cell, the upper one near the lower angle which sends forth the lower and middle radial veins, the latter being at the base bent upward. The ♂ scent-organ consists of a stripe below the median from the upper to below the lower median vein and a small spot above the middle of the submedian. On the hindwing the anal angle is slightly lobate. Only 1 species.

St. lyco Schs. Body and wings above blackish-brown, the scent-stripe deeper black; fringes at the ends ochreous-yellow. Beneath the wings are dark reddish-brown, the proximal margin of the forewing dark brown with a dark brown shade at the cell-end and below it. Costa Rica. *lyco.*

98. Genus: **Amblyschirtes** Scddr.

The antennae are shorter than half the length of the costal margin, club thick; palpal terminal joint projecting, erect or also short conical. ♂ with a narrow scent-scale stripe extending oblique and interrupted from the base of the upper median vein to below the submedian and in some species containing yet a short, small scent-stripe at the inner-marginal vein.

- vialis.* **A. vialis** Edw. (183 a) is a small, dark brown species with 3 small, light subapical dots. Beneath the same, towards the margin the colour is lighter. Northern United States to Florida and Texas.
- aenus.* **A. aenus** Edw. (183 a) is larger, duller, more brownish, the small spots are yellowish and also postdiscally there are 2 small spots; fringes very slightly speckled. Beneath brownish-grey, forewing marked as above, hindwing with a postdiscal zigzag-band of small white spots and one spot each at the cell-end and behind the middle of the costal margin. Texas, Arizona.
- exotertia.* **A. exotertia** H.-Schäff. (= *nanno* Edw.) (183 a). Blackish-brown, strewn with reddish-yellow, with a black stigma; beside 3 white subapical dots there are postdiscally below and behind the cell 4 spots in an oblique line, sometimes also one in the cell. Beneath as above, hindwing strewn with white; fringes white, speckled dark. Arizona to Mexico.
- tutolia.* **A. tutolia** Dyar (183 a) resembles the preceding, differing by more numerous, more oblong white spots above; also in the cell 1 or 2 whitish longitudinal patches. Beneath the anal angle of the forewing is occupied by a large whitish-yellowish spot. The hindwing is scantily strewn with yellowish and exhibits above the cellular spot another white dot near the costal margin towards the base. Fringes hardly noticeably speckled. Mexico (Guerrero).
- catahorma.* **A. catahorma** Dyar (183 a) is likewise similar, somewhat smaller, with larger white spots; between the median veins a transverse, longish spot close behind the stigma and below it another submedian one. Hindwing with a postdiscal curved row of 5 white dots; fringes not speckled, whitish-grey with a dark line before them. Beneath very light, the forewing at the costal margin and in the cell ferruginous-yellowish, the hindwing strewn more olive yellowish-grey with the spots of the upper surface. Mexico.
- folia.* **A. folia** Godm. & Salv. (183 a) is somewhat larger than *exotertia* with a large white spot at the anal angle of the forewing beneath; hindwing beneath less strewn white. Mexico.
- fluonia.* **A. fluonia** G. & S. (183 a) is allied to *aenus*, but the spots are less distinct, and the hindwing beneath is without the zigzag line of spots. Mexico.
- elissa.* **A. elissa** G. & S. (183 a) is smaller than *fluonia* with distinct white spots on all the wings beneath. Mexico (Guerrero).
- nysa.* **A. nysa** Edw. (= *similis* Streck.). Above lustrous dark brown, forewing with a cellular dot and 3 semi-diaphanous, small subapical spots. Beneath somewhat lighter, the spots as above, the cellular spot larger. Hindwing dusted with black, with small dark spots in the middle and at the costal margin, and a dark band parallel to the distal margin and single accumulations of grey scales. From Texas.
- eos.* **A. eos** Edw. Above greyish-brown with 3 white subapical dots; on the forewing the fringes are speckled light, on the hindwing almost white. Beneath brown, at the apex and distal margin of the forewing and on the hindwing dusted chalky; the spots of the forewing somewhat larger than above and increased by one. Hindwing with 3 discal and a row of postdiscal whitish punctiform spots. Texas.
- celia.* **A. celia** Skinner. Above dark smoke-coloured brown, almost black, fringes black speckled with ashy-grey. Forewing with the 3 small subapical spots forming a row from the costa. Through the middle of the wing a row of minute yellowish-white spots from the apex to the middle of the proximal margin, their number varying between 4 and 9. Hindwing without spots. Forewing beneath as above, hindwing very finely speckled with small light grey scales, in the middle of the wing a number of very small, indistinct white spots. ♀ like the ♂, but larger and above with fewer spots. As dark as *A. vialis*, *Stom. textor* etc., in the marking the most closely allied to *aenus* (183 a), but differently coloured. Texas (Blanco, Comal and Nueces Counties).
- mate.* **A. mate** Dyar from Mexico (Guerrero) was only recently described. Above black with a bronze reflection, speckled with few light scales, and light, darker speckled fringes. The under surface is somewhat more intensely speckled with white, otherwise not marked. Expanse of wings: 25 mm.

99. Genus: **Stomyles** Scddr.

Only little different from the preceding genus: the middle radial vein of the forewing is at its rise bent downward, the palpal terminal joint is longer, and the ♂ stigma is differently shaped; it consists of a scent-scale stripe below the median and parallel with it between the two median veins and another stripe above the lower median vein.

St. textor *Hbn.* (= *oneko* *Scddr.*, *waculla* *Edw.*) (183 b) is easily recognized by its peculiarly-marked under surface and not to be mistaken: greyish-brown, with somewhat lighter veins, on the forewing with one yellowish-white macular line, on the hindwing with two, being connected at the costal margin and in the middle. Southern Atlantic States. *textor.*

St. samoset *Scddr.* (= *hegon* *Scddr.*, *nemoris* *Edw.*, *alternata* *Grt. & Rob.*) (183 b). Above dark brown, the grey fringes speckled somewhat darker; in the cell of the forewing there are 2 small white dots, 3 subapically and postdiscally and at the proximal margin 3 more. Beneath light grey, forewing as above, hindwing with a white macular band, cellular spot and a larger one in the middle of the costal margin. Atlantic States. *samoset.*

St. simius *Edw.* (183 b) is somewhat larger, subapical and postdiscal spots together form a yellowish-red, subapically angular macular band. Hindwing in the disc reddish-yellow. Beneath very light, marked as the preceding, but the macular band of the hindwing is darker, the cellular spot very large, and the base of the hindwing whitish. South California, Arizona. *simius.*

St. cassus *Edw.* is allied to *exoteria* and *aenus* (183 a); forewing above brown, dusted with reddish-yellow, especially intensely in the inner-marginal area, with 3 small, ferruginous-yellow subapical dots and an oblique discal row of spots. Hindwing except the dark costal margin dark reddish-yellow, not spotted. Fringes whitish, at the veins darkened. Beneath the forewing is reddish-yellow in the discal and apical parts, at the base and proximal margin black, at the apex dusted whitish. Hindwing brown, dusted white, at the inner-marginal third reddish-yellow, spotted whitish. The ♀ is larger, darker, the spots more yellowish-white. Arizona (Mt. Graham). *cassus.*

St. tolteca *Scddr.* (183 b) resembles *exoteria*, but it has a double white cellular spot of the forewing, the oblique row of spots is more curved, the ♂ stigma different. Mexico. *tolteca.*

St. florus *G. & S.* looks very much like *Amblyscirtes fluonia* (183 a), but different by the stigma, and the under surface is darker and more monotonous. Mexico. *florus.*

St. comus *Edw.* (= *nilus* *Edw.*) (183 b). Above lustrous greyish-brown, forewing with 3 minute subapical dots, as well as 3 white spots below and behind the cell. Beneath lighter, the spots more distinct; hindwing with 9 dots, 6 in one row parallel to the distal margin, 3 near the base. Texas, Mexico. *comus.*

St. nereus *Edw.* (183 b, c) is larger than *comus*, the palpal terminal joint longer, the lower row of spots more distinct. From Arizona to Mexico. *nereus.*

St. arabus *Edw.* Above lustrous dark brown, forewing with 3 small, semi-diaphanous subapical dots, a cellular dot and 3 small postdiscal spots; fringes brown. Beneath brown, at the distal margin and apex dusted greyish-brown. Hindwing greyish-brown, in the disc brown as far as the costal margin. Described according to a ♀ taken in South Arizona in October. Expanse of wings: 1.3 inch. *arabus.*

St. fusca *Grt. & Rob.* is a small species with a somewhat protracted, pointed apex of the forewing and a rather straight distal margin. Above uni-coloured olive-blackish, in an oblique light with a slight golden reflection; fringes somewhat lighter, not spotted. Beneath strewn with golden brown, especially the hindwing strewn with a light golden colour except an olive-blackish ray before the proximal margin. Georgia, Florida. *fusca.*

St. osleri *Skinner* is similar, larger, above monotonously light brownish-black, the stigma a little more blackish. Beneath the forewing exhibits a black basal spot above bordered with reddish-yellow; hindwing on a dark brown ground strewn with white scales. Colorado (Chimney). *oslari.*

St. gallio *Mab.* Above blackish-brown, the spots from beneath merely traceable. Beneath the same, with 3 light yellow subapical dots, below them in an oblique row some more towards the middle of the proximal margin, the lowest being larger and white; costal margin with white striae; one in the middle of the cell and 2 small ones in the apex itself. Hindwing with 7 punctiform spots in a bent line, the uppermost being remote from the others, the third from above prolonged and projecting, the lowest moon-shaped; distal margin strewn with yellow, ends of veins bordered with yellow. Brazil. *gallio.*

St. pupillatus *Mab.* (183 c) is above greyish-brown, spots beneath grey or faintly whitish, fringes reddish. Beneath reddish-brown, with a postdiscal row of prolonged, small, black punctiform spots as in the *Lycaena* proximally bordered with whitish, also on the hindwing representing small eye-spots; the uppermost is the largest, the 3rd double; in the cell a greyish-black spot. Bolivia. *pupillatus.*

100. Genus: **Halotus** *G. & S.*

Different from *Amblyscirtes* by the more depressed middle radial vein of the forewing and the ♂ stigma which is double: a triangular part fills up the angle of the rise of the lower median vein, below it there is a short longitudinal stripe.

H. angellus *Plötz* (= *saxula* *Mab.*) (183 c). Blackish-brown with a darker stigma; the forewing shows 2 minute subapical dots and 2 white spots below and behind the cell. Beneath blackish-brown with the spots as above, the lower crescentiform; at the anal angle there is a dirty yellow stripe-shaped spot. Hindwing with a lighter undulate band; fringes dark yellow, spotted black. Known from Costa Rica and Panama. *angellus.*

101. Genus: **Synapte** Mab.

The only type is without the antennae. Wings broad with an obtuse apex; the characteristic mark is the course of the uppermost subapical vein very close at the costal so that they almost touch each other in the middle. Hindwings rounded; posterior tibiae slender with 2 pair of spurs. Only one species:

salenus. **S. salenus** Mab. The only ♀ known looks like *Amblyscirtes fluonia* (183 a). From Colombia.

102. Genus: **Sarega** Mab.

Antennae long, club prolonged with a long apex. Palpi unknown. On the forewing the uppermost subcostal vein is nearing the costal-marginal vein, the middle radial vein is basally bent down; on the hindwing the median veins almost rise from the same place together with the lower radial vein. Posterior tibiae slender, fringed. The large ♂ stigma extending obliquely from the base of the upper median vein to the submedian consists of 2 parts and is set with large black scales.

staurus. **S. staurus** Mab. (183 c) likewise resembles *A. fluonia*. Above blackish-brown with 2 above scarcely visible small subapical dots; beneath they are more distinct, the apex between the subcostal veins whitish; the upper half of the distal margin is lilac grey. Hindwing blackish-brown with a reddish-brown nebulous band from the costal angle to the proximal margin and nearer to the distal margin with another one composed of undulate striae. Colombia.

103. Genus: **Psoralis** Mab.

Antennae as in *Sarega*; the 2nd palpal joint hairy, the terminal joint thick, conical, porrect. On the forewing the middle radial vein is very much bent down, so that it almost rises at the lower. Veins of hindwings as in the preceding genus; between the upper radial vein and the subcostal and costal veins there are 3 transverse stripes of bossy black scent-scales. The ♂ has a scent-scale stripe extending from the rise of the lower radial vein to the submedian and being pointed at both its ends.

sabaenus. **Ps. sabaenus** Mab. Above blackish-brown, hued somewhat reddish. 3 white subapical dots on the forewing are only visible beneath. Forewing beneath lighter in the proximal part. Hindwing reddish-brown with 2 broad, black bands, one at the distal margin, one in the middle, the latter expanded towards the costal margin and base. Ventrums white. Bolivia.

104. Genus: **Calpodes** Hbn.

Antennae remarkably short; second joint of the palp rising, last joint hidden; on the very long forewing the middle radial vein is situate as in *Psoralis*. Hindwing at the anal angle somewhat lobate, before it concave. The ♂ is without the scent-scale spot.

ethlius. **C. ethlius** Cr. (= *chemnis* F., *olynthus* Bsd. & Lec.) (183 c) is a well known, very common species with oblong forewings. Brown with hyaline spots, a narrow one at the cell-end, 3 large ones behind it and 3 subapical ones. Base of wing ochreous. Hindwing with a row of 3 hyaline spots. Beneath the hindwing is violettish-grey, the spots less distinct. From the south-eastern States of North America through Mexico to Argentina and in the West Indies. — The larva, according to a water-colour painting made by SEITZ in Argentina, is green, before the pupation across the dorsum lilac-brown, watered white, the head beneath very broad, above somewhat indented, the os, a triangle above it and two punctiform spots at the sides of the frontal vesicle black. In funnel-shaped leaves of *Canna*. Pupa green, on the frons a spine-like, curved appendage; the case of the sucker projects beyond the apex of the abdomen by 1½ to 2 cm; it yields the imago in 10 to 20 days.

105. Genus: **Asbolis** Mab.

Antennae of medium length, club thick, ovoid. Palpi thick, appressed to the frons. On the forewing the upper radial vein rises on a short footstalk with the lowest subcostal vein; the middle radial vein as in the preceding genera very near to the lower ones; the median is strongly angled at the rise of the lower branch; hindwing prolonged with an oblique straight distal margin and somewhat lobate. The ♂ shows a bipartite stigma, one part extending somewhat bent between the two median veins, and from the lower one linearly to the submedian.

sandarac. **A. sandarac** H.-Schüff. (= *palaea* Hew.) (183 d) is above deep blackish-brown, on the body and bases of the wings with a faint green reflection; stigma grey. Fringes of forewings ochreous-yellowish, on the hindwing white with a yellow base. Beneath more reddish, towards the base blackish with a lighter, in the larger spot near the proximal angle of the forewing. Colombia, Cuba.

A. gagatina *Mab.* is more robust, smoky black, forewings short and squat, hindwings rounded, short. *gagatina*. Disc of the forewing with a ferruginous-red reflection, fringes light brown. Beneath ferruginous brownish-black, forewing with a row of faintly greyish spots round the cell from the costal margin to the upper median vein. Hindwing with a bent ferruginous-red patch between the upper median vein and upper radial vein. Thorax with a metallic green reflection. Ventrums brown, antennae short as in *sandarac*. Brazil.

A. halomelas *Mab.* has no stigma, and may therefore not belong hereto. Hindwing longer than in *halomelas*. *sandarac*, of a deeper black colour, distal half of forewing ferruginous-brown, veins black; 3 minute, yellowish subapical dots are only to be seen with the lens, the two lower ones being transparent. Forewing beneath from the base to the cell black, hindwing with a blacker shade in the middle. Body black, without a metallic lustre, but with a slight bottle-green reflection; the two last abdominal rings are beneath yellow. Antennae $\frac{1}{4}$ longer than in *sandarac*. Fringes black. From Pebas.

106. Genus: **Zariaspes** *G. & S.*

Antennae shorter than half the costal margin. Palpi thickly scaled. Last joint conical, short, erect. Apex of forewing pointed. Posterior tibiae with only one pair of spurs. The ♂ has no scent-scale stripe on the forewing.

Z. simplex *Fldr.* (183 d) is a very small species resembling *Ancyloxipha arene* (180 c). Above uni-*simplex*. coloured pale reddish-yellow with a very fine black marginal line. Beneath the apex of the forewing is lighter yellow, the proximal margin black almost as far as the anal angle, and the hindwing is strewn with a greenish yellow except the reddish-yellow inner-marginal part. From Mexico.

Z. mys *Hbn.* (= *dukolum* *Blake*, *epictetus* *Stgr.* nec *F.*) (183 d). Above bright yellow bordered with *mys*. black, with an oblique, black longitudinal stripe being somewhat indented below the cell-end, or entirely interrupted. The ♀ is black with a yellow oblique stripe of the forewing and a discal spot of the hindwing. Beneath yellow, forewing at the proximal margin and anal angle black. Mexico to Paraguay.

Z. mytheus *G. & S.* (183 d) is larger than *mys*. Lustrous ochreous-yellow; costa of forewing towards the apex, distal margin and proximal margin as well as a narrow discocellular line blackish-brown like the costal margin of the hindwing. Beneath ochreous-yellow with a blackish-brown basal spot. The ♀ has also the hindwings bordered with blackish brown, and on the forewing an interrupted longitudinal band from the base through the cell, and a triangular spot behind it blackish-brown. Mexico (Guerrero).

Z. portensis *Mab.* is doubtfully placed to this genus. Above reddish-yellow, forewing with a narrow *portensis*. black border, at the proximal angle widened; veins black, at the cell-end widened into a black triangle. Border of hindwing black, at the costal angle very broad, from where a tooth extends to the cell-end, at the distal margin narrow, at the anal angle prolonged into 2 points; the basal part is somewhat brownish. Beneath yellow, base of forewing blackish with a dull blackish border. Expanse of wings: 28 mm. Porto Rico.

107. Genus: **Aëlla** *Mab.*

Antennae as in the preceding genus. Terminal joint of the palp slender, long and obliquely erect. On the forewing the median is inflated in its basal third as well as the first quarter of the lower median vein. Tarsi long and slender, the stout posterior tibiae with but one pair of spurs. Only one species:

A. dryops *Mab.* Small; forewing bright yellow with a black border being expanded at the apex, and *dryops*. a black longitudinal band being narrowed in the middle, widening towards the apex in a quadrangular spot with extended angles, touching the costal margin. Hindwing yellow, unmarked, only at the base somewhat blackish. Beneath yellow, strewn with whitish. From Brazil and Venezuela.

108. Genus: **Padraona** *Mr.*

Antennal club rather long with a short apex; palpal terminal joint short, slender, erect. On the forewing the middle radial vein is curved at the base, very much nearing the lower radial. Hindwing near the anal angle somewhat indented. Posterior tibiae with 2 pair of spurs. This genus containing mostly Indo-Australian representatives has also some American species.

P. epictetus *F.* (= *ferrago* *Plötz*, *eudesmia* *Plötz*) (183 e) looks somewhat like *Zariaspes mys*. Above lustrous *epictetus*. reddish-yellow, broadly bordered with black with a broad, black longitudinal stripe of the forewing, being mostly somewhat indented behind the cell-end beneath; the costal margin remains yellow. Beneath the forewing is at the costa and apex and the whole hindwing feebly dusted with cinnamon-colour; the hindwing has mostly lighter yellow veins and a black longitudinal stripe along the inner-marginal fold. Widely distributed from Mexico through South America.

P. tryhana *Kaye* is very similar; bright golden yellow with a broad black distal margin and longitudinal *tryhana*. stripe projecting towards the margin on the lower median vein and between the upper radial veins. Hindwing more extensively yellow, beneath quite uni-coloured yellow. Expanse of wings: 34 mm. Trinidad.

- lento*. **P. lento** Mab. (183 e) is somewhat larger than *epictetus* and similarly marked reddish-yellow, but the yellow bands are narrower, the costal margin is yellow only as far as the middle of the cell, the hindwing exhibits a narrow yellow band. Beneath the forewing is red at the costal margin and apex, blackish at the proximal margin and disc, instead of the band there is an oval yellow spot. Hindwing red, with yellow veins, at the proximal margin blackish-brown; below the cell there is a yellow, oblong spot. From Pará.
- hyboma*. **P. hyboma** Plötz (183 e) looks above like the ♀ of *Zariaspes mys*: black with a yellow longitudinal stripe being above indented behind the cell on the forewing, and an oval longitudinal spot of the hindwing; fringes especially towards the anal angle broadly yellow. Beneath the hindwing is peculiarly marked, light yellow with a brown longitudinal stripe parallel to the costal margin and a longitudinal stripe along the inner-marginal fold, and a brown distal-marginal band widening towards the anal part. From Minas Geraes.
- argus*. **P. argus** sp. nov. (183 e) somewhat resembles *sartia*. Above almost the same, but the hindwing is without the yellow marginal spots and the black hair-pencil. Beneath the hindwing is very different, in the disc creamy white, base and distal margin brownish, behind the cell are 2 large black spots, between them a very small one, all of them exhibiting outside a white pupil, and behind them another small black spot, between the spots the veins are ferruginous-yellow; inner-marginal fold striped black. According to a ♂ from the Coll. FASSL, from the Songo (Bolivia).
- sartia*. **P. sartia** Schs. Above dark brown, basal half of costal margin light ochreous-brown; spots light yellow, semi-transparent, bordered with a darker yellow: 3 small subapical spots, a large quadrangular spot between the median veins, a smaller one above it, and a stripe above the submedian; base and proximal margin haired ochreous-brown. Costal margin of hindwing broad dark brown, distal margin black, at the proximal margin a black hair-pencil; disc dark ochreous-brown with some small yellow spots before the margin. Beneath the forewing is black with a broad black shade at the proximal margin; disc ochreous with a velvety black spot behind the cell and a large white spot behind it, and above the latter 2 white spots and below it likewise 2, another longer one below the lower median vein. Expanse of wings: 27 mm. Petropolis.
- calcareo*. **P. calcarea** Schs. Forewing dark brown with a broad reddish-yellow longitudinal band from the middle of the submedian towards the apex, narrowing near the middle radial and widening above it, then growing narrow again and being crossed by the dark veins; hindwing with an oblique orange spot near the distal margin between the lower median and middle radial vein. Beneath light brown, with light veins: forewing in the cell and near the proximal angle black, the reddish-yellow spots darker. In the ♀ instead of the yellow band whitish spots, only the lowest being yellow and double. Expanse of wings: ♂ 30, ♀ 33 mm. Petropolis.
- imerius*. **P. imerius** Plötz (183 e) is only doubtfully placed here like the following. Above reddish-yellow with broad black margins, a black, wedge-shaped stripe through the cell and another one half as long below it. Beneath yellow, forewing at the base, as well as one spot each behind the cell and at the proximal angle black; the apical part and the whole hindwing black, with very broad reddish-yellow veins. From Brazil.
- krexos*. **P. krexos** Plötz (183 e) is similar, larger, more robust, much more broadly bordered with black, with only one broad black longitudinal stripe of the forewing, being interrupted by yellow at the cell-end. Beneath the apex and costal-marginal part of the forewing as well as the whole hindwing are chestnut-coloured, with narrow yellow veins. Described from Pará.
- rivula*. **P. rivula** Mab. Blackish-brown, forewing with a postdiscal band of 8 equally broad, reddish-yellow spots, being angled at the upper radial vein, the 2 lowest hollowed out; in the cell a spot and below the costal margin 2 streak-shaped spots. Hindwing with a round cellular spot and a light reddish-yellow median band. Fringes brown, distally reddish-yellow. Beneath the forewing is black below the cell, at the costal margin strewn with yellow, spotted as above. Hindwing with a broad median band, base strewn with yellow, the cellular spot surrounded by brown. Expanse of wings: 23 mm. Teffé.
- levina*. **P. levina** Plötz (183 f). Above black with a reddish-yellow subcostal stripe, 2 similar subapical dots, a cellular spot and 2 postdiscal ones as well as a submedian stripe; the 3 discal spots are lighter and semi-transparent. Hindwing with a large reddish-yellow discal macular band. Beneath the apex of the forewing and the hindwing are cinnamon-coloured with yellow veins. From Brazil (Rio de Janeiro).
- flavocostata*. **P. flavocostata** Plötz (183 f) is smaller, the reddish-yellow spots flown together to an oblique band, the subcostal space darkened. Hindwing with a reddish-yellow postdiscal spot and a similarly coloured median as far as the base; fringes reddish-yellow. Beneath likewise very much like *levina*, the ground more blackish-brown, not so red, the veins broader yellow. From Rio de Janeiro.
- vicinus*. **P. vicinus** Plötz (183 f) resembles *flavocostata*, but it is larger, of a more intense reddish yellow, on the hindwing with a broad postdiscal band; fringes much broader and brighter reddish-yellow, also on the forewing. Beneath extensively yellowish-reddish, in the disc of the forewing blackish, on the hindwing with some reddish-brown vein-stripes. Colombia.
- radiata*. **P. radiata** Schs. Above dark brown with a bright yellow stripe in the basal half of the costal margin, another one below the submedian and one above it, ending in a large spot. At the rise of the lower median vein there is a small round scent-spot, behind it a quadrangular one above which there is a small one in the cell, all being pupilled light yellow; another similar spot is between the median veins, another subapical

spot; before it at the costal margin yellow scales. On the hindwing the lower half of the cell and a spot behind it bright reddish-yellow, so that only a small part remains dark brown; between the median veins near the cell there is another brown spot. Beneath the forewing is black, the costal margin, apex and distal margin light brown with darker stripes between the veins which are yellow. Hindwing violettish-brown, veins light yellow; a broad, black wedge-shaped stripe is situate near the proximal margin and widens towards the anal part. Fringes black, distally grey. Expanse of wings: 30 mm. Petropolis.

P. amyrna *Mab.* is deep brown with a reddish-yellow reflection, in a certain light with a blue reflection: forewing with 3 oblong, yellowish subapical hyaline dots, the uppermost dying away. Between the lower median and upper radial vein there are in an oblique row pale reddish-yellow spots only slightly contrasting with the ground; fringes dirty grey. Hindwing not spotted, with ashy-grey fringes. Beneath brown, forewing at the costal margin and apex more reddish, of the macular band only 2 spots are visible. Hindwing with a reddish-brown reflection, a black marginal line and 4 small yellowish postdiscal dots towards the apex. Expanse of the wings: 26 mm. Described from Porto Cabello.

P. binaria *Mab.* is deep blackish-brown, in the cell with a ferruginous brown reflection, behind it with 2 whitish dots in an oblique line, costal margin and veins deeper black. Hindwing coloured the same with ferruginous yellow fringes. Beneath dull greyish-black, the spots more distinct, below the middle lighter yellowish-white, at the costal margin and veins ashy-grey. The brown hindwing is densely strewn with greyish-violet. Expanse of wings: 32 mm. Venezuela (Merida).

P. sophistes *Dyar.* Blackish-brown with an orange band along the costal margin to the cell-end, where it turns downwards and is obliquely traversed by the radial veins; another band extends along the proximal margin as far as $\frac{2}{3}$ of its length, and is united here with another band which narrows upwards, is incised at the cell-end and terminates at the lower subcostal vein. Fringes reddish-yellow. Hindwing reddish-yellow in the disc and with a reddish-yellow band at the distal margin. Beneath the forewing is reddish-yellow at the apex, otherwise as above; hindwing entirely reddish-yellow, markings from above only faintly showing through. Expanse of wings: 24 mm. Mexico.

P. inculta *Dyar.* Black, fringes at the ends reddish-yellow. Costal margin of forewing dusted reddish-yellow with an oblique postdiscal band, traversed by the veins, bent round the cell-end and broken up into 3 subapical spots; hindwing with a reddish-yellow postdiscal band and yellow dusting at the proximal margin. Beneath dusted yellow, forewing with a large yellow discal spot and yellow costal margin, in the cell a black dot, proximal margin black, towards the base penetrating into the cell. Hindwing yellow with yellow veins and a dark marginal band. Expanse of wings: 27 mm. Mexico.

P. dara *Koll.* (= *maesoides* *Btlr.*, *omaha* *Edw.*, *mingo* *Edw.*, *californica* *Scddr.*) is an insect widely distributed in Asia and having been dealt with in the palearctic part (comp. Vol. I, p. 351, t. 89 g). Above yellowish-brown, bordered with black, with an oblique longitudinal band from the proximal margin to the apical third of the costal margin. This species also occurs in the United States. For this American form SCUDDER established the genus *Potanthus*.

109. Genus: **Pyrrhocalles** *Mab.*

Antennae as in the preceding with a long apex. Forewing broad triangular, distal margin in the middle convex. Palpi ascending, broad, flatly appressed, with a slender pointed terminal joint which is very long and erect. The ♂ is without a stigma. Only one species:

P. antiqua *H.-Schäff.* (= *utha* *Hew.*) (183 f, g). ♂ above fiery orange-brown, broadly bordered with black, with a large, black postcellular spot; ♀ much darker brown with a yellow, above forked macular band behind the middle, a black discal streak on the hindwing and a lighter red-brown spot behind it. Behind the forewing is as above, the hindwing brown with a red-brown postdiscal band. Hayti, Jamaica, Cuba.

110. Genus: **Serdis** *Mab.*

Antennae longer than in the preceding genera, but they do not quite reach to the cell-end. On the forewing the median area between the two branches is very long owing to the lower branch rising near the base, the upper near the cell-end. Posterior tibiae with long fringes. The ♂ exhibits a thick stigma of a dull black colour extending from the cell-end to the base of the submedian and being divided into 4 parts.

S. flagrans *Mab.* (183 g) is above bright reddish-yellow, with a black border, which between the veins penetrates into the surface like a wedge; inner-marginal halves of both wings dusted grey; behind the cell, as a continuation of the stigma, a black spot, a similar one being pupilled reddish-yellow in the cell situate at the costal margin of the hindwing. Beneath the apex of the forewing is reddish-brownish-grey, and the greatest part of the hindwing except the broad yellow proximal margin; a postdiscal, bent, yellow band, before it a brownish-grey band. Ecuador, Bolivia.

S. venezuelae *Ww.* (= *stadius* *Plötz.*, *fulgens* *Mab.*) (183 g) is very much like *flagrans*; the margin is less broad black, the grey dusting less intense, the postcellular black spot small, hindwing without a costal-marginal spot. The ♀ is much darker with 2 large, white, postdiscal spots and 2 small ones at the cell-end. Beneath the ♂ is plainly reddish-yellow, the proximal margin of the forewing black, the hindwing dusted green, with somewhat lighter veins; the ♀ has a green apex and costal margin of the forewing and green hindwings with 2 very much bent, narrow, light yellowish bands. Venezuela.

viridicans.

S. viridicans Fldr. (183 h) is a large, beautiful species; above deep rufous, very broadly bordered with black, with 3 small white subapical spots and a fourth below them; costal margin olive-green like the hairing of the body; a broad black oblique stripe terminates into the broad black apex; hindwing with a broad costal-marginal spot; fringes of hindwings analwards white, otherwise ochreous-yellow. Beneath the forewing is apically and at the costal margin as well as the whole hindwings bright olive-green, at the distal margin lighter; hindwing with a straight, light, narrow transverse band and a broad black inner-marginal wedge. Colombia.

kirschi.

S. kirschi Weym. (183 g) is only doubtfully regarded as a different species. Above the forewing is without the postdiscal white spot behind the lower cell-end, the base of the hindwing is broader red-brown and connected with the postdiscal macular band which does not extend parallel to the distal margin, but terminates distally concavely pointed into the apex. Beneath the anal angle of the forewing is scarcely dusted black, and the hindwing exhibits 2 parallel, distally slightly concave, light green bands, the distal one of which terminates into the costal angle. Colombia.

fractifascia.

S. fractifascia Fldr. (183 g) resembles *viridicans* above, the black border being narrower; on the hindwing before the distal margin extends a straight or almost proximally convex, fox-coloured band which is flawed in an acute angle on the upper radial vein. Beneath as *viridicans*, but the distal white band of the hindwing forms below the costal angle a pointed tooth distally, touching the margin, the proximal band terminates distally in the lower cell-angle. Colombia, Venezuela.

111. Genus: **Trioedusa** Mab.

Antennal club very long, fusiform; palpi appressed, last joint conical, erect. Middle radial of the forewing as in *Psoralis* and *Calpodes*; the median strongly inflated, especially beneath; the submedian is bent and forms an angle at the place where it touches the lower end of the stigma. Posterior tibiae bare, only with terminal spurs. Scent-scale stripe tripartite, the uppermost part velvety black near the cell-end on the median, the middle one bordered with grey at the lower median vein, and the lower roundish, hairy on the submedian angle.

milvius.

T. milvius Mab. (183 h). Black, costal margin striped ferruginous yellow, with a narrow, oblique, reddish-yellow band extending from the 3 small subapical spots to the base of the proximal margin and widening before the stigma; hindwing with a broad discal spot, fringes likewise ferruginous-yellow. Beneath the forewing is ferruginous-yellow, the band lighter yellowish, hindwing the same, the discal spot bordered by small reddish spots. Brazil, Paraguay.

devergens.

T. devergens sp. nov. (183 h) is above and beneath hardly discernible from *milvius*, somewhat smaller, the wings less stretched and above all different by anatomical differences which will probably necessitate the establishment of a new genus. The median is not inflated nor is the submedian angularly flawed. The scent-organ consists of an angular part on the median in the angle where the lower branch rises, below it a roundish scent-spot and above the submedian a third one. The reddish-yellow band of the hindwing is above somewhat broader and beneath the black colour on the forewing is more intense and more extensive. Otherwise coloured and marked the same. According to 1 ♂ from Muzo (Colombia), taken by FASSL.

112. Genus: **Prenes** Scddr.

Antennae mostly rather short, like the last palpal joint, Forewing long, the cell of 2_3 of the length of the costal margin; middle radial as in the preceding; hindwing at the anal angle feebly lobate. The oblique, narrow scent-scale stripe which is interrupted, is in some species absent altogether. Posterior tibiae with double spurs.

nero.

P. nero F. (= *nyctelius* Latr., *fusina* Hew.) (183 h) is a most extraordinarily variable species, especially in the size and development of the white band on the hindwing beneath. Above blackish-brown with a white, semi-transparent cellular spot, 3 or 4 behind it, the uppermost very small, the lowest more yellowish than the others, and 3 subapical dots. Beneath the same, but on the hindwing mostly with a white band. Head and thorax mostly greenish. — In f. **corrupta** H.-Schäff. (183 h) the spots are small, the hindwing shows instead of the white band above an indistinct reddish one; beneath the latter is broad, somewhat reddish. Cuba. —

*corrupta.**sylvicola.*

sylvicola H.-Schäff. (183 i) has the hindwing beneath in the larger costal half and the apex of the forewing suffused with steel-grey or lilac-grey, and instead of the white band of the hindwing only small, indistinct light

fulidia.

punctiform spots. From Cuba and Para. — In **fulidia** Hew. (183 i) the band is narrow, divided into spots. Between all these forms there exist, however, numerous transitions. Often the cellular spot of the forewing is prolonged. From Mexico to Brazil and the West Indies. — f. **conformis** Plötz (183 i) has beside the broad white band of the hindwing also a cellular spot beneath.

*conformis.**evadnes.*

P. evadnes Cr. (= *chlorus* Plötz) (183 i) is larger than *nero*. Forewing towards the base and hindwing strewn with dark yellow, otherwise above very similar. Beneath the apical part of the forewing and the

hindwing are dusted with a deep cerise colour, the silvery white band is broad, proximally somewhat dentate and extends farther towards the black proximal margin. Guatemala to Colombia and Brazil.

P. pauper *Mab.* (183 i, k) is above similar, but the ♂ is without the stigma, and the band on the hindwing beneath is white not silvery, at both its ends reduced to spots; the hyaline cellular spot of the forewing is small; the undulate, interrupted band beneath separates it also from *nero* to which it is otherwise allied. Mexico, Honduras, Guatemala to Colombia. *pauper.*

P. heterospila *Mab.* is allied to the preceding. Forewing with a bent band of yellow hyaline spots: 3 subapical ones, 2 small ones below them and 2 larger quadrangular ones below them, the lowest being more yellow. Hindwing unspotted. Beneath in the disc black, at the costal margin and apex reddish-brown. The hindwing is yellowish red-brown with 3 white black-margined dots, one being situate at the costal margin more remote from the others; in the cell of the forewing there is near the costal margin a small dark dot. From Peru. *heterospila.*

P. luctuosa *H.-Schäff.* (183 k) is much larger, the cellular spot reduced to a small dot, the other spots yellowish, the middle postdiscal spot distally deeply hollowed out. Body and base of wings haired brown. Beneath similar as *evadnes*, strewn with a dark red-brown, the white band proximally very convex, near the anal angle the dark ground-colour extends far into it. Brazil. *luctuosa.*

P. grapte *Drc.* (183 k) is very closely allied to *luctuosa* and also to *pauper*. In the cell-end of the forewing there is a small, oblong spot beside the usual spots. Fringes light brownish-white, base of wings and body ochreous. Beneath somewhat lighter, the spots as above, only the submedian spot larger and more blurred. The hindwing exhibits a small, round, white spot in the cell; and behind it a white, bluish reflecting band, proximally sharply defined and convex, distally blurred: it begins pointed at the costal margin and grows much broader towards the proximal margin. The distal margin is brownish-grey with brown veins. From Peru. *grapte.*

P. philippina *H.-Schäff.* (183 k) is smaller, above with an intense green reflection on the body and base of the wings; the cellular spot of the forewing is entirely absent, the spots otherwise as in *nero*. Beneath the hindwing is quite uni-coloured dark brown without a band. Panama (Chiriqui). *philippina.*

P. ares *Fldr.* (= *coscinia* *H.-Schäff.*) (183 k) resembles *philippina* above, but it is less green, with a double cellular spot of the forewing. Beneath the hindwing is lilac-grey with a broad brown discal and marginal band and a round costal-marginal spot near the base. Mexico to Brazil and the West Indies. *ares.*

P. cornelius *Latr.* (= *ocola* *Edw.*, *hecebolus* *Scddr.*, *ortygia* *Mschlr.*, *parilis* *Mab.*) (184 a) is still smaller, more insignificant, without any green, without a cellular spot, all the spots smaller; hindwing beneath with a rather indistinct band of whitish, small punctiform spots. From the South Eastern States through Mexico in almost the whole of South America as far as Peru: also in Trinidad. *cornelius.*

P. diduca *Schs.* is a very small species, above dark brown, the ends of the fringes lilac-grey. The forewing exhibits only a minute yellowish subapical spot. Beneath lighter brown, on the forewing the apex is tinted lilac like the whole hindwing, on which there is a very small yellowish spot near the cell-end, behind it a bent row of similar small spots, the lowest being the largest. Expanse of wings: 24 mm. Petropolis. *diduca.*

P. panoquin *Scddr.* (= *wimico* *Plötz*, *ophis* *Edw.*) (184 a) very much resembles *cornelius*, from which it chiefly differs above and beneath by somewhat more olive-greenish scaling, as well as an oblong white wedge-shaped spot on the hindwing beneath between the radial veins; there is often another smaller one below the median veins; the veins are somewhat lighter than the ground. Southern Atlantic States. *panoquin.*

P. panoquinoides *Skinn.* is beneath very much like *panoquin* and resembles it also above, but it is here less and more indistinctly marked. It forms the transition from *panoquin* to *Stomyles fusca* and is smaller and darker than the former, but larger and lighter than *fusca*. From Key West in Florida and Texas. *panoquinoides.*

P. errans *Skinn.* Above exactly the counterpart of *ocola*, beneath very much like *panoquin* and *panoquinoides*. Above dark brown, forewing with 2 small, yellow spots. Hindwing beneath with 3 spots, the first in the 3rd subcostal area, the 2nd in the 4th, the 3rd in the first median area. Expanse 1½ inch. California and Texas. — Larva green, the head marked black, with green feet, on herbs. Found in Sa. Barbara. *errans.*

P. vala *Mab.* (= *actor* *Mab.*, *dama* *Plötz*?) (184 a). Above blackish-brown with a yellowish reflection: forewing with a small apical dot, 2 small postdiscal spots and a very small cellular diffuse spot. Fringes yellowish. Beneath lighter brown, forewing lighter whitish towards the anal angle, hindwing with a short, bent, whitish discal band formed of dispersed scales. Expanse of wings: 26 mm. Mexico, Guatemala, Panama (Chiriqui), Brazil. *vala.*

P. valo *Mab.* is described according to but one ♀, for which reason its position is doubtful. Olive-brown; forewing with 3 hardly visible subapical dots and two whitish spots behind the lower cell-angle; fringes dirty grey. Forewing beneath lustrous grey, at the costal margin ashy-grey with an oblong-quadrangular, ash-coloured, submedian lighter part. Hindwing more brownish grey with a short, lighter postdiscal band of 3 indistinct spots. Expanse of wings: 32 mm. Bogotá. *valo.*

hemizona.

P. hemizona Dyar. Black with a blue reflection, wings very long, forewing produced at the anal angle, here with white fringes; in the cell a quadrangular white spot, a wedge-shaped one below it; behind the cell 5 in a curved row. The hindwing exhibits a white band with rounded, yellowish ends behind the cell. Beneath the same. Expanse of wings: 40 mm. Mexico.

113. Genus: **Cydrus** G. & S.

Antennal club shorter than in *Preues* with a longer hook-shaped apex. Apex of forewing prolonged, costal margin convex, distal margin concave. The ♂ shows a broad scent-scale stripe from the rise of the upper median vein to the submedian.

naevolus.

C. naevolus G. & S. (184 a). Blackish-brown, the stigma dark with large, white hyaline spots arranged as in *P. cornelius* but being much larger, especially the cellular spot which is parted by the fold. Hindwing with a yellowish, indistinct cellular spot and 4 or 5 behind it in a curved row. Beneath as above, the forewing tinted purple, the hindwing scantily strewn with yellowish, the spots more distinct; fringes white, on the ends of the veins somewhat speckled. Mexico, Guatemala, Panama to Brazil.

114. Genus: **Aides** Billb.

Antennal club stout and long. Prolonged apex of wings and veins as in the preceding genus. The ♂ exhibits an angular stigma in the angle between the rise of the lower median vein and the median, below it a longitudinal stripe and near the proximal margin a third being divided by the submedian.

epitus.

A. epitus Cr. (= *argyrina* Stgr. i. l.) (184 a, b). Blackish-brown, base of wings and body haired greenish, stigma grey. Spots yellow hyaline a cellular spot distally hollowed out, 3 spots in an oblique row behind it and 3 subapical ones. Hindwing with a yellowish apical spot. Beneath more reddish, in the basal half darker, costal margin above the cellular spot yellow. Hindwing in the disc with a large, triangular silvery spot and 1 or 2 spots towards the distal margin. Panama to Brazil.

dysoni.

A. dysoni G. & S. (184 b) is very much like the following *aestria*, but the silvery spots beneath are different: a small one is situate in the cell, 3 large ones behind it more towards the proximal margin, the middle spot being the smallest, and before the distal margin there is another transverse, crescentiform spot. Honduras.

aestria.

A. aestria Hew. (184 b) is blackish-brown with a large, double cellular spot, 3 large postdiscal ones and a very small one above it, as well as 4 subapical ones. On the hindwing there is behind the cell a double, white spot. Beneath the apex of the forewing and the costal half of the forewing are extensively cerise or red-brown; on the hindwing there is a very large silvery spot in the disc and 6 irregular, smaller ones behind it. Brazil.

elara.

A. elara G. & S. (184 b) is like *epitus*, but without subapical spots; the silvery spot of the hindwing terminates towards the costal margin into 2 teeth; body and base of the palp are haired yellow, the stigma is smaller, the part below the submedian is absent. Mexico.

incantator.

A. incantator Drc. is only known in the ♀. It is allied to *aestria* and *dysoni*, but beneath distinguished by the other silvery spots. Wings basally densely haired reddish-yellow. Beneath the forewing is coppery-brown, in the proximal part blackish-brown, the proximal margin lighter; in the middle of the dark copper-brown hindwing there is an irregular silvery spot composed of quadrangular confluent spots, with 2 smaller spots, one at the cell-end and a somewhat larger one behind it above the median. Costa Rica.

115. Genus: **Paraides** G. & S.

Separated from the preceding genus only by a different shape of the scent-spot: one spot is situate on the lower median vein near its base, another spot below it and a third on the submedian; the stigma may also be absent.

ocrinus.

P. ocrinus Plötz (= *argyrina* Stgr. i. l., *callidanas* Mab.) (184 b, c) looks above almost like *Aides elara*, but the base of the hindwing is haired green; it is very closely allied to the following *aegita*, but it has a stigma of 3 small parts, whereas *aegita* has none at all. On the hindwing beneath there is a large silvery spot below the cell and 2 smaller ones behind it. From Panama to Colombia, Guiana, Amazon, Brazil.

aegita.

P. aegita Hew. (184 c). Above blackish-brown, towards the base and on the body haired olive-yellowish, with a large white cellular spot and 3 postdiscal ones behind it and below it on the forewing; the hindwing exhibits a round white postcellular spot. Beneath cherry-brown, in the disc of the forewing blackish, at the proximal margin lighter grey. Hindwing with a large trapezoid silvery spot below the cell and two smaller ones behind it, one near the margin. Brazil (Pará).

P. anchora Hew. (184 c) is above coloured and marked entirely the same, but somewhat smaller. *anchora.* Beneath the red-brown parts are lighter, the large silvery spot of the hindwing is not situate below the cell, but behind it, and near the distal margin there is only a smaller silvery spot. Likewise from Pará; Trinidad.

P. brino Cr. (184 d) resembles *anchora* above except the more ochreous-yellow hairing on the body *brino.* and the base of the wings. Beneath on the red-brown hindwing 2 transverse silvery spots, both composed of 3 spots each. From Surinam.

P. argyrostactos Mab. belongs to the same group from which it differs by the absence of the white *argyrostactos.* spot on the hindwing beneath. Above deep brown, at the base ochreous-yellow; forewing with 4 white hyaline spots, a double one in the cell and 3 obliquely behind it, the middle spot being large, the lowest small, oval. Forewing beneath blackish, at the base, round the spots, at the apex and at the distal margin red-brown, dusted with yellow. Hindwing red-brown, strewn with yellow, with 3 silvery spots, 1 in the cell and 2 below it. Expanse of wings: 48 mm. Brazil.

116. Genus: **Xeniades** G. & S.

Distinguished from the two preceding genera by the straight distal margin of the forewing. The stigma is almost the same, but some species have one scent-stripe more on the median.

X. orchamus Cr. (= *licia* Plötz) (184 d) resembles *Aides epitus* (184 a, b), but the silvery spot is *orchamus.* different and forms a band from the middle of the costal margin almost to the anal angle, which is broader here; towards the apex there are 2 to 4 more smaller silvery spots; fringes white, at the forewing towards the costal margin smoky. Panama to Brazil. — f. **xanthothrix** Plötz (184 c, d) is on the body and the base of the *xanthothrix.* wings much brighter ochreous-yellow, also the hyaline spots are more yellowish, on the hindwing there are only 2; on the hindwing beneath there is only the proximal silvery spot, the distal arm broken up into very small spots. Rio de Janeiro.

X. difficilis sp. n. (184 d) does not differ from *orchamus* above. Beneath the submedian spot of the *difficilis.* forewing is much smaller, more indistinct; the principal mark is the differently shaped silvery band of the hindwing, which is broader, towards the base convex from the costal margin to in front of the proximal margin, penetrating much farther into the cell than in *orchamus*, where it is proximally almost rectilinearly defined; below the costal margin it is interrupted so that there is here an isolated spot; another difference is in the dark fringes; in *orchamus* they are white and also bend yet for some distance upwards at the proximal margin. According to 1 ♂ from Coroico (Bolivia) from the Coll. FASSL.

X. laureatus sp. nov. (184 d) is above deep dark green on the body and base of the wings, the ground- *laureatus.* colour being black, not brown; the small subapical dots are minute, also the submedian spot is very small, all the hyaline spots purely white; on the hindwing there are 4 postdiscal spots, 2 of which are always situated together. Beneath somewhat duller, more brownish; above the cellular spot the costal margin is spotted white, the submedian spot is enlarged to half of the submedian area and opaque white. On the hindwing there is near the distal margin a white, smoked band in which the hyaline spots are situate at the proximal margin. Body, palpi below and base of club white like the fringes. According to 1 ♂ from the Songo (Bolivia) from the Coll. FASSL.

X. pteras G. & S. (184 e) is very much like the following *chalestra*, but the hindwing above is without *pteras.* the proximal spot, and the body and base of the wings is more intensely metallic green. Beneath chestnut-red, hindwing with a straight, creamy-white band turning upwards at the anal angle. Panama, Colombia, Venezuela, Trinidad.

X. chalestra Hew. (184 e). Brown, on the forewing with a cellular spot and 3 large postdiscal ones, *chalestra.* all of which are whitish-yellow hyaline, the two upper ones distally concave, and with 3 small subapical stripes. Hindwing with a round cellular spot and 3 behind it. Beneath the hindwing is chestnut-brown with a broad, creamy-white band being towards the anal part bent round in an acute angle, and the 3 postdiscal spots from above behind it. Colombia, Brazil. — In f. **concors** H.-Schäff. the white dots behind the band of the hindwing *concors.* beneath are absent.

X. cecropterus nov. sp. (184 e) is somewhat smaller, the hindwing rounder, instead of the scent- *cecropterus.* spots there are long hair. Above as the preceding, but the spots of the forewings are somewhat differently shaped, the hindwing not spotted. Thoracal hairing greenish bluish-grey. Beneath the forewing is apically tinted red-brown, the cellular spot is towards the costal margin continued in a yolk-coloured spot, the lowest fades away in the lighter anal angle. Hindwing deep blackish-brown with a somewhat reddish tint; the upper half of the distal margin and the costal angle are broadly creamy, ending pointed downwards. 2 ♂♂ from the Coll. FASSL from the Rio Songo (Bolivia).

117. Genus: **Telles** G. & S.

Very closely allied to the preceding genera. Antennae half as long as the costal margin; forewing less prolonged, but hindwing at the anal angle. The ♂ is without the scent-organ; middle tibiae with spurs.

T. arcalaus Cr. (184 e). Blackish-brown, base of wings and body metallic green; forewing with 2 *arcalaus.* cellular spots and 3 below and behind them, the second being very large, triangular, before the apex there are 3 very small spots and 2 smaller ones below them, all yellowish hyaline. The hindwing shows towards the apex

3 spots in an oblique row and 2 subcostal ones. Under surface more reddish, forewing at the anal angle lighter, the costal margin and apex chestnut-red and marked yellow like the hindwing which is grey in the cell, at its end white; behind the cell-end 4 yellow spots. Panama, Guiana, Amazon.

118. Genus: **Thespius** G. & S.

Antennae scarcely half as long as the costal margin; forewing at the apex somewhat tapering, the distal margin somewhat concave, the cell as long as two thirds of the costal margin; the middle radial very much bent nearing the base of the lower radial; hindwing as long as the abdomen; body strong; the ♂ exhibits a scent-stripe from the rise of the upper median vein obliquely to the middle of the submedian, being mostly interrupted. As to the synonymy there prevails an incredible confusion.

othna. **Th. othna** Btlr. (= *macareus* Plötz) (184f, g). Above blackish-brown, towards the base and on the body haired ochreous with a cellular spot on the forewing, and 3 postdiscal small spots, the middle of which is the largest, quadrangular, and 3 subapical ones. Hindwing towards the apex with 4 postdiscal spots situate in one row, all of them slightly yellowish. Beneath lighter, apex of forewing, and the hindwing marbled red-brown and yellowish, and particularly behind the hyaline spots there appears a narrow red-brown spot; in the basal area also lilac-grey dusting. Mexico; Brazil. It is not impossible that this is *macareus* H.-Schäff.; the species *macareus* in one of the following paragraphs would in that case have to be denominated *emacareus*.

argentina. **Th. argentina** sp. nov. (184g) strikingly resembles *othna*. The hyaline spots of the forewing above are on an average larger, especially the spot between the median veins; the hyaline band of the hindwing is situate more closely to the distal margin, being broader and shorter and ending towards the apex broadly quadrangular, not in a pointed end as in *othna*; hairing of the body and of the base of the wings is slightly more olive, not so ochreous-yellow. Beneath the forewing is almost the same, the white stripe parting the apex is just a little more distinct; on the hindwing the different position of the hyaline spot is much more conspicuous than above, it is situate much closer at the distal margin and extends with its lower end towards the anal angle, whereas in *othna* it is turned more towards the middle of the proximal margin; above its upper end another silvery white hyaline stripe extends towards the middle of the costal margin and is proximally broadly bordered with ferruginous yellow; in *othna* it is only occasionally traceable at the costal margin in a quite different direction, running obliquely proximad. The median and the upper radial are white. From Argentina (Salta).

bogotana. **Th. bogotana** sp. n. (184f) is another similar form. Above like *othna*, but the hyaline spot of the hindwing does not end towards the apex in a pointed end, but is quadrangular as in *argentina*, but it is far remote from the distal margin; in the cell-end there is a yellowish-white punctiform spot. Beneath the hindwing is without any ferruginous tints, the costal margin and the middle of the distal margin are broad whitish, densely strewn with a deep cherry-brown colour; the hyaline spot is distally bordered by a narrow blackish-red line parted by the white veins; towards the proximal margin from the hyaline spot there is a dark blackish-brown triangular spot towards the base and distally bordered with white, towards the apex a narrow similar stripe turned towards the base and proximally bordered with white. Colombia (Bogotá).

aspernatus. **Th. aspernatus** sp. nov. (184f) by the bluish-grey hairing of the body and of the base of the wing forms the transition to *macareus*. Above otherwise hardly different from the others; the hyaline spot of the hindwing consists of 4 equally large longitudinal spots and extends from the apex almost in front of the middle of the proximal margin. Beneath the apex of the forewing is not parted by white, but above and below equally broad greyish-white, scantily strewn with deep cerise. The same is the hindwing in the whole apical half, from the middle of the costal margin almost to the anal angle, otherwise dark cerise, the darkest in the shape of irregular spots in the disc, the largest of which borders proximally on the hyaline spot; distally only the lowest hyaline spot is bordered with dark. From Paraguay.

macareus. **Th. macareus** H.-Schäff. (= *emacareus* Plötz) (184f) is marked above exactly like *othna*, but the spots are whiter, and the hairing of the body and the base of the wing is dull greenish bluish-grey, not ochreous. Beneath also marked almost the same, less yellow with 1 or 2 distinct dark dots at the costal margin of the hindwing. Mexico to Venezuela.

marsa. **Th. marsa** Mab. from the Rio Grande is likewise similar to *othna*. Blackish-brown, base of forewing and costal margin as far as the 3 apical spots reddish-yellow; in the cell a double spot, behind it in an oblique line 5, all yellowish-white, the uppermost punctiform, the lowest dark yellow. Hindwing with 2 groups of white hyaline spots: 2 larger ones between the radial veins, 2 smaller ones above them; at the base a reddish-yellow dot. Forewing beneath red-brown, proximal margin blackish; from the apex to the upper median vein extends a ferruginous band. Hindwing purple-brown, spots as above, but silvery white, the first group in a yellow band, distally to it towards the apex a white band; margin ochreous-yellow, basal dots white. Expanse of wings: 36 mm.

lutetia. **Th. lutetia** Hew. (184f) (transition to the *xarippe*-group). Above like *macareus* and just as bluish-green on the body and base of the wings; the spots smaller, 5 postdiscal ones (punctiform); the hyaline band of the hindwing narrow. Beneath purple brown or cerise; apex of forewing parted by a white long stripe which appears distally dentate white on the veins. The hindwing is only at the apex very little strewn with white; the hyaline spot is retort-shaped, its white point terminating into the apex; below it and somewhat

towards the margin there is a white crescentiform spot; costal margin basally white; through the middle of the cell extends a white stripe, the interrupted prolongation of which in a distal direction is formed by the white retort-beak and which sends a white band upward before the cell-end to the middle of the costal margin, in which band an oval spot of the ground-colour is enclosed; the basal lower half of the cell and the space towards the proximal margin is white strewn with cerise. Brazil (Rio de Janeiro).

Th. vividus *Mab.* is above blackish-brown with a cell-spot, 5 postdiscal dots in an oblique line and 3 subapical dots. Fringes whitish speckled with black. Hindwing in the middle with a light yellow hyaline spot composed of 2 large and 2 smaller ones. Forewing beneath blackish, at the apex reddish with a yellowish-white, small oblique band. Hindwing brown, the 4 spots blurred, situate in a yellowish-white band extending from the costal margin to the proximal margin and being connected below the cell with a parallel basal band; veins striped white, proximal margin blackish. Expanse of wings: 30 mm. Brazil. *vividus.*

Th. xarippe *Btlr.* (185 a) is a large, beautiful species, spotted above as the others, on the forewing below the subapical spots two more spots farther distally; apex parted by light; hindwing with a quadripartite angular spot. Beneath very characteristic: chestnut-brown, apex of forewing parted by white, hindwing with a narrow subbasal transverse band and an angular postdiscal band one side of which extends to the distal margin, anastomosing at the other end with the basal band. Brazil. *xarippe.*

Th. hieroglyphica *sp. nov.* (184 g) is not dissimilar on the whole, somewhat smaller, above very similar. The cell-spot is very small, the submedian spot more intensely yellowish; on the hindwing no angular band, but a straight one extending pointed to the apex, before it in the middle of the cell a small light spot. Fringes on both wings analwards lighter, on the hindwing also at the costal angle. Beneath very variegated and with peculiar markings, arranged as in *xarippe*; the light stripe parting the apex of the forewing is much steeper, almost parallel to the distal margin; on the hindwing the proximal transverse band is broken up into 2 almost longitudinal ones, the dark ground of the wing is in the costal half white strewn with cherry-brown, the veins before the middle of the distal margin white, the distal band of the hindwing terminates into the apex. Described according to 1 ♂ from the Rio Songo (Bolivia) in Coll. FASSL. *hieroglyphica.*

Th. opigena *Hew.* (184 g). Above dark brown. Forewing with a transparent cell-spot, 4 spots in an oblique line behind it and 3 subapical ones. Hindwing with a transverse band of 4 spots. Beneath as above, hindwing crossed by 2 broad grey antemedian and distal-marginal bands. South America (?). *opigena.*

Th. ovinia *Hew.* (184 g) resembles the preceding above, but the band of the hindwing is composed of 3 small, separate spots approaching the distal margin and parallel to it. Hindwing beneath browner than in the following, the spots larger and more than coherent narrow bands. Nicaragua. *ovinia.*

Th. zaovinia *Dyar* (= *rupilius* *Schs.* ♀) (184 h) has a broader and rounder shape of the wings, dark brown, above marked as the preceding; the median of the subapical spots is removed proximally. Fringes on the ends of the veins somewhat speckled. Beneath little lighter, behind the middle of the proximal margin of the forewing a large white spot. Hindwing strewn with lilac-grey, with 4 postdiscal white punctiform spots, 2 at the costal margin and 1 or 2 in the cell. Mexico, Costa Rica. *zaovinia.*

Th. gayra *Dyar* is above brownish-black, the spots dark yellowish-hyaline, very large, as numerous and arranged as in *zaovinia*, the hindwing besides with a faded cell-spot; fringes light yellow. Beneath the same, hindwing tinted purple, with the hyaline spots as above and 2 brown transverse bands in and behind the middle. Expanse of wings: 40 mm. Mexico (Guerrero). *gayra.*

Th. himella *Hew.* (184 h). Above spotted and coloured as *lutetia*, but the fringes are more intensely speckled white and black. Beneath easily recognizable by the extensive white basal and discal areas of the hindwing with small black spots; proximal margin irregularly black, distal margin red-brown; also on the forewing a subapical, red-brown spot. Brazil (Rio de Janeiro). *himella.*

Th. cicus *Mab.* Deep blackish-brown, base haired ferruginous with 8 yellowish-white hyaline spots, a small one in the cell, 3 subapical ones and 4 postdiscal ones in an oblique line; stigma whitish, in the middle interrupted. Hindwing towards the apex with 3 transparent dots. Forewing beneath purple-brown, at the distal margin lilac. Hindwing purple-brown, at the distal margin and round the 3 discal spots strewn with lilac; proximal margin deep brown, fringes white. Expanse of wings: 46 mm. Brazil. *cicus.*

Th. superior *sp. nov.* (184 h) is above blackish-brown, marked as *cicus*, but towards the base and on the body with decidedly ferruginous hair; hindwing with a broad hyaline band of 4 spots. Fringes bright orange-ochreous. Beneath deep red-brown, apex of forewing and upper distal-marginal half strewn with lilac-grey. Hindwing in the basal third and before the middle of the distal margin strewn with lilac-grey, so that the hyaline spots are broadly surrounded by red-brown; also the base itself is red-brown. This large, beautiful species is found in Bolivia. *superior.*

Th. cacajo *Dyar* (185 a) is allied to *dalmani* and *macareus*. Above bronze-black, towards the base ochreous-yellowish; the spots yellowish-hyaline, arranged as in the said species, the cell-spot quadrangular, in the middle strangulated; only 3 postdiscal spots, that in the middle being the largest, the two upper ones quadrangular; hindwing with 3 postdiscal spots, separated by the veins, growing smaller towards the apex. Beneath as above, forewing behind the apical spots with a ferruginous nebulous stripe, behind it a purple line. *cacajo.*

Hindwing in the disc dusted with purple; below the hyaline spots a large, triangular, brown spot narrowly bordered with purple; behind the hyaline spots 3 ferruginous spots separated by the veins. Expanse of wings: 36 to 40 mm. Mexico (Guerrero, Cuernavaca).

dissultus. **Th. dissultus** *sp. nov.* (185 a) is a smaller species, above intensely reddish-yellow, the spots yellowish, the submedian spot quite ochreous-yellow, the cell-spot very small, only 3 postdiscal spots; hindwing with 4 narrow, light ochreous, small spots. the two middle ones transparent and more white. Beneath duller brown without any red or reddish-yellow tints, apex of forewing parted by white, before it with a deep brown triangular spot proximally bordered with white and exhibiting a white dot at the costal margin. Below the base of the costal margin of the hindwing a white stripe and through the middle of the cell above the radial veins as far as the apex a white stripe from the middle of which a branch extends to the middle of the costal margin, in the middle of which a small brown streak-spot is situate. Below the cell 2 large, blackish-brown spots on each side bordered with whitish, the proximal one being smaller; the two postdiscal hyaline spots are likewise distally bordered by dark brown spots; proximal margin dark brown. South Brazil.

dalmani. **Th. dalmani** *Latr.* (185 a) is twice as large, otherwise very similar; the hyaline spots are larger, on the forewing without the yellowish tint; bases of wings not so reddish-yellow, more olive-yellowish. Beneath very much like *dissultus*; the white longitudinal stripe through the cell of the hindwing and its costal-marginal branch are absent, the cell and the apical costal-marginal half are monotonously pinkish-grey or whitish; the blackish-brown spots below and behind the cell are very prominent, the spot situate towards the base below the cell being very small. Fringes at the anal angle ochreous-yellowish. Mexico to Colombia, South Peru.

guerreronis. — In f. **guerreronis** *Dyar* (185 a) from West Mexico the blackish-brown spot of the hindwing beneath is much larger and triangular and reaches beneath to the lower end of the white hyaline spot.

119. Genus: **Vacerra** *G. & S.*

As *Thespies*, but on the forewing the lower median vein rises much nearer at the base, and the stigma consists of two narrow, scarcely visible longitudinal stripes, a short one below the lower median vein and a longer one above the base of the submedian.

bonfilsii. **V. bonfilsii** *Latr.* (Mab. Gener. Ins. 17 d, p. 148) has unfortunately remained unknown to us.

litana. **V. litana** *Hew.* (= caprotina *H.-Schäff.*, socles *Plötz*, aeos *Plötz*, cabenta *Plötz*) (185 b) looks above like *Thespies macareus* (184 f), body and bases of wings with dull ochreous hair, easily discernible by the entirely different, indistinct stigma. Hindwing beneath at the base cerise, distally more lilac-grey with a yellowish-white band and cell-spot. From Mexico to the Amazon.

egla. **V. egla** *Hew.* (185 b) is similar, smaller, the cell-spot on the forewing divided into two, all the spots narrower, the band of the hindwing longer, all the spots in it equally broad. Beneath lighter, hindwing more mixed with cerise, with a bone-coloured white band. Mexico, Nicaragua, Panama.

lachares. **V. lachares** *G. & S.* (185 b) is very similar, but larger, below the subapical spots of the forewing two more spots, the band of the hindwing is more pointed towards the proximal margin. Beneath much darker than *egla*. From Costa Rica.

caniola. **V. caniola** *H.-Schäff.* (= canente *Btlr.*) (185 c). Above as *litana*, beneath the hindwing exhibits a straight white band from the apex to the anal lobe, not so far as the angle. In the ♂ the cell-spot is divided into two. Costa Rica.

dalima. **V. dalima** *Plötz* (185 d). Blackish-brown, on the forewing with 3 postdiscal spots, 2 subapical ones and one minute cell-spot, on the hindwing with a narrow, white postcellular transverse band of 4 small spots. Beneath as above, but very much duller brown, in the disc of the forewing black. Brazil.

120. Genus: **Tirynthia** *G. & S.*

Differs from *Vacerra* by a longer antennal club; the costal margin of the forewing is bent convex at the base, the cell is shorter than $\frac{2}{3}$ of the costa; the middle tibiae without spines and the ♂ is without the scent-scale apparatus.

conflua. **T. conflua** *H.-Schäff.* (185 c) resembles *Vacerra egla* above, but it has no cell-spot. The hindwing shows a short, ochreous-yellowish postcellular band divided by the veins. The hindwing beneath is light brown with a broad, straight white band from the apex to the darker middle of the proximal margin which it does not reach. Nicaragua to Paraná.

cinica. **T. cinica** *Plötz* (185 b, c) differs from *conflua* by smaller white spots increased by a cell-spot; the hindwing only shows a roundish discal spot. Beneath scarcely different from *conflua*, but in the middle of the costal margin is a yellow spot, and the inner-marginal area is broadly greyish-white. From Pará.

osca. **T. osca** *Plötz* (185 c) is doubtfully placed here. Above blackish-brown, with a basal green reflection; forewing with a large, quadrangular cell-spot and 2 behind it, as well as 3 subapical dots. Hindwing with 2

white, small punctiform spots behind the cell and yellowish fringes. Beneath lighter brownish-grey, apex of forewing with a whitish-spot, and with a submedian lighter part at the proximal angle; the hindwing besides shows a whitish cell-dot. From Venezuela (Caracas).

T. xanthosticta Plötz (185 d) is very similar; above without the green reflection, instead of which the costal margin is red-brown. Forewing only with a subapical dot, hindwing only with a whitish postcellular spot. Beneath without the white apical spot and anal-angular spot. Pará. *xanthosticta*.

121. Genus: **Niconiades** Hbn.

Antennae with clubs long, slender; palpi erect with a short terminal joint. Distinguished by the prolonged hindwings. ♂ stigma tripartite: a triangular piece in the angle where the lower median vein starts from, a long stripe below it and a shorter one on the submedian.

N. xanthaphes Hbn. (185 d). Above blackish-brown, bases of wings and body with metallic green hair, stigma grey; spots white hyaline: a bipartite cell-spot, 3 postdiscal dots and 2 or 3 subapical dots. Hindwing with a postcellular double spot. Beneath lighter, in the basal half of the costal margin ochreous-yellow with a narrow, irregular band from the costal margin to the anal angle. Mexico to Brazil. *xanthaphes*.

N. caeso Mab. (185 d) is very similar, but immediately discernible by 3 spots of the hindwing. Mexico to Brazil and Trinidad. *caeso*.

N. merenda Mab. (185 d, e) is above likewise similar, but smaller, the subapical dots almost extinct. Hindwing beneath without a band, only with a small cellular dot. From Panama, Venezuela to Brazil. *merenda*.

N. merendula Schs. resembles the preceding. Head and thorax greenish; wings brown with darker fringes; forewing with 3 small, subapical spots, a large cell-spot being strangulated in the middle, a large, quadrangular spot below it and a smaller one behind the lower cell-angle, all white hyaline, and a yellow submedian patch. Hindwing with a small, round, yellow cell-spot and 4 small, whitish antemarginal spots. Beneath lighter brown, forewing basally darkened, the submedian spot larger and white. Hindwing as above. Expanse of wings: 31 mm. Castro, Paraná. *merendula*.

N. viridiceps Mab. (185 e) resembles *merendula*, but it is larger, the subapical dots are larger. Hindwing above with a short, white band, beneath except the cell-dot with 2 small spots near the costal margin and 3 near the anal angle. Panama. *viridiceps*.

N. cydia Hew. is very much like *Oxyntes corusca* (185 e); it is larger, hindwing at the anal angle more prolonged; besides the ♂ has the stigma described above, on the submedian a longitudinal, not transverse scent-stripe. From Brazil. — f. **besekei** Plötz (185 e) has on the hindwing beneath a broader white band. Novo Friburgo. *cydia*, *besekei*.

N. antus Mab. is above black; the forewing exhibits a white hyaline quadrangular cell-spot; a longer one below it is connected with it, a smaller one is situate distally above it; below the apex 3 hyaline dots. Hindwing with 2 small postcellular hyaline spots. Beneath red-brown, distally more brightly coloured with the spots of above and a whitish patch at the anal angle of the forewing. Expanse of wings: 42 mm. Brazil (Sa. Catharina). *antus*.

N. andricus Mab. We had no access to a description of this species. *andricus*.

N. sabaea Plötz (185 f). Blackish-brown, thorax and bases of wings with a green reflection, on the forewing with a large, strangulated cell-spot, 2 behind it and a small, yellowish submedian patch and 2 subapical dots. Hindwing with 2 or 3 postcellular dots and lighter fringes. Beneath lighter brownish-grey, in the lower half of the forewing black, the discal spots confluent and united with a large, white submedian spot. Brazil, Colombia, from the latter country with smaller hyaline spots. *sabaea*.

122. Genus: **Oxyntes** G. & S.

On the forewing the middle radial vein is still nearer at the lower cell-angle than in *Niconiades*, the hindwing is scarcely prolonged at the anal angle and does not project beyond the abdomen. Instead of the lowest longitudinal scent-stripe on the submedian the ♂ exhibits a transverse stripe.

O. corusca H. Schöff. (= *martius* Mab., *cisa* Plötz) (185 e) very much resembles *Nicon. xanthaphes* (185 d), but it is distinguished by the shorter hindwing, the different stigma and unspotted hindwing. Head, body and bases of wings are green; hindwing beneath lighter, with a broad white band as in *Tir. conflua* (185 c). Mexico, Panama to Brazil. *corusca*.

123. Genus: **Phemiades** Hbn.

Antennal club thick and long with a short apex; palpal terminal joint short; apex of forewing hardly prolonged, hindwing broad and rounded; posterior tibiae with long fringes. The ♂ shows a straight, narrow scent-stripe from the lower median vein to the submedian.

propertius. **Ph. propertius** F. (= *memuca* Hew.) (185 e). Above blackish-brown, with a postdiscal band composed of 3 pale yellow spots and 4 or 5 reddish-yellow, small subapical spots; costal margin of forewing in the middle-reddish-yellow, hindwing with a reddish-yellow transverse band. Beneath very conspicuous owing to the creamy hindwing with 2 red-brown transverse bands; at the proximal margin a black wedge-shaped spot. Brazil.

jamaicensis. **Ph. jamaicensis** Schs. Above bright reddish-yellow, distal margin and a stripe from the cell to the apex blackish-brown; in the basal area a large blackish-brown spot from the subcostal vein to the lower median vein, into which from outside the reddish-yellow colour penetrates in the shape of a stripe. Hindwing with a broad, black costal margin and distal margin widened as far as the cell-end. Beneath the costal margin, apex and distal margin are reddish-brown, with a darker antemarginal shade, at the anal angle black; base black as well as a large spot at the cell-end. Hindwing dark reddish-brown, distally lighter with a yellow discal spot and a black triangle above the anal angle. Expanse of wings: 43 mm. Jamaica.

phineus. **Ph. phineus** Cr. (185 e) is a doubtful species. Above similar to *jamaicensis*, but on the forewing only with 2 reddish-yellow subapical spots, and the 2 upper spots of the postdiscal band are likewise reddish-yellow. Hindwing crossed by a broad creamy transverse band. Described from Surinam.

simulius. **Ph. simulius** Drc. (185 f) is a large, strong species with a remarkably strong anterior body and a stout head. Above dark brown, thorax and bases of wings haired green. Forewing with an ochreous-yellowish cell-spot and 3 small postdiscal ones obliquely behind it, as well as 3 subapical dots; hindwing with 3 extinct, small, ochreous-yellowish postcellular spots, fringes lighter whitish. In the ♀ the spots are larger and form on the hindwing a band beginning from the costal margin. Beneath lighter brown, the discal spots of the forewing flown together with a large, yellowish-white submedian spot into a transverse band. Hindwing with a broad silvery white band. Peru and Bolivia.

procax. **Ph. procax** sp. nov. (185 f) resembles *simulius* above, but it is somewhat smaller, the postdiscal row of spots a little more oblique, the cell-spot absent. On the hindwing the spots are situate more behind the lower cell-angle. Body and bases of wings not green, but ochreous-yellow. Beneath light brown, on the hindwing with a round, light cell-spot and a bent row of dots behind it, the largest spot being situate near the proximal margin. Bolivia.

124. Genus: **Thoon** G. & S.

Antennae somewhat longer than half the costal margin. Apex of forewing prolonged, the middle radial at its rise very much bent down. Hindwing at the anal angle prolonged, projecting beyond the abdomen. Middle tibiae with spines. Scent-scale stripe of the ♂ composed of 2 parts: a triangular part in the angle where the lower median vein proceeds, and a short longitudinal stripe above it.

modius. **Th. modius** Mab. (= *stilio* Mab.) (185 f) looks above almost like *Tirynthia conflua* (185 c), but the spots are smaller. Hindwing beneath light brown with an ochreous-yellow cell-dot and 4 in an oblique line behind it. Guatemala, Nicaragua, Costa Rica and Panama.

taxes. **Th. taxes** G. & S. (185 g) is similar, though smaller; on the forewing the subapical spots are absent, hindwing without a macular band. Beneath without the cell-spot of the hindwing. The black stigma is very distinctly prominent. From Panama.

lugens. **Th. lugens** Schs. Dark brown with lighter fringes. Forewing with a black stigma. Beneath the forewing is reddish-brown, at the proximal margin lighter. Hindwing violettish-brown except the proximal margin; a small cell-spot and some small, similar postdiscal spots as well as the proximal margin are lighter brown. Expanse of wings: 27 mm. Petropolis.

125. Genus: **Rinthon** G. & S.

Distinguished from the preceding by somewhat less prolonged hindwings and only one longitudinal scent-scale stripe on the submedian.

chiriquensis. **R. chiriquensis** Mab. (= *cabella* Plötz) (185 g). Above blackish-brown with a white-hyaline cell-spot, a very large, quadrangular spot distally below it, and a small one more towards the margin above it; 3 subapical hyaline spots the lowest of which is removed more distally; hindwing with 3 small light ochreous postcellular spots in a straight line. Beneath the same, but duller, the proximal margin of the forewing lighter; hindwing a little strewn with whitish, the small spots whitish, besides with a cell-dot. Mexico, Guatemala and Panama.

R. bomax Schs. Dark brown, on the forewing with a narrow, transverse white hyaline spot between the median veins and a very small round spot above it. Beneath dark brown, tinted violet, on the forewing the anal angle and proximal margin are lighter brown. Hindwing with a small, yellow cell-spot and a dot behind the lower cell-angle. Expanse of wings: 36 mm. Petropolis. — **zaba** Str. belongs perhaps as a form to it, it is distinguished by 2 minute subapical dots, only one more small cell-spot, the hindwing beneath being unmarked. Mexico, Argentina. *bomax.*

R. tanaris Schs. is above as the preceding, but without the narrow lower hyaline spot. Beneath the forewing has a broad lighter brown distal margin and apex and is spotted as above, but with a light transverse stripe below it. Hindwing tinted violet above the median and the lower branch. Expanse of wings: 36 mm. Brazil (Tijuca in the Organ Mountains). *tanaris.*

R. dyma Plötz (185 g) is above dark brown with 3 white subapical dots, 2 large white postdiscal spots and a yellow submedian diffuse spot in front of which the lead-coloured scent-stripe is situate on the submedian. Hindwing with a white dot behind the lower cell-angle, and with ochreous fringes. Beneath light reddish-brown, disc of forewing black, being continued towards the margin like a diffuse patch above the lower median vein. Hindwings with darker brown basal and discal bands and small triangular spots on the margin between the veins; beside 2 white postdiscal dots there is a cell-dot. Brazil. *dyma.*

R. advena sp. nov. (185 g) is smaller; the blackish-brown forewing shows 2 small, white, hyaline cell-spots, 2 postdiscal spots the lower of which is much larger than the upper, and three subapical dots. Hindwing with a hyaline dot behind the lower cell-angle. Beneath duller, the anal angle of the forewing lighter, hindwing with a white cell-dot and 2 behind the cell. Bolivia; South Brazil. *advena.*

R. luctatus Schs. is above black, on the head with a slight green reflection. The forewing exhibits 2 small greyish-white spots between the median veins and above them. Beneath duller and lighter, the spots whiter, clearer, near the anal angle a greyish-brown spot; on the hindwing 2 reddish dots behind and below the cell. Mexico. Costa Rica. *luctatus.*

R. cynea Hew. (= *crebina* Mschlr., *tersa* Mschlr., *kasus* Mschlr.) (185 h). Forewing with only 2 small white spots, one of which is subapical; hindwing unspotted. Beneath the hindwing shows a cell-dot and 3 behind it, the anal angle of the forewing is broad, white; head and thorax with a green reflection. From Mexico to Colombia and Venezuela. *cynea.*

R. bistrigula H.-Schüff. (= *alus* Mab., *velleius* Plötz) (185 h) is above very similar; beneath the forewing does not show a white anal angle, and the hindwing is entirely uni-coloured blackish-brown, like the head and thorax. From Panama to Guiana, the Amazon and Bolivia. *bistrigula.*

R. melius Hbn. (= *irma* Mschlr.) (185 h) is above quite blackish-brown with a long, lighter stigma; forewing towards the proximal margin and hindwing on the anal fold long-haired. Beneath the wings are tinted purple, forewing at the anal angle lighter, at the apex and distal margin grey. Of the same colour are the distal and proximal margins of the hindwings. Mexico to Colombia, Brazil, and in Trinidad. *melius.*

R. anthracinus Mab. (= *epaphus* G. & S.) (185 h) is much larger than *melius*, above the same; well discernible on the hindwing beneath by the distal margin being broadly coloured ochreous-yellow analwards. Guatemala to Brit. Guiana. *anthracinus.*

R. megalops G. & S. (185 h). Above uni-coloured blackish-brown; beneath hindwing as in *cynea*, but the forewing without a white anal angle; head and eyes remarkably large, frons and prothorax with lustrous green hair. Mexico, Costa Rica and Panama. *megalops.*

126. Genus: **Cobalus** G. & S.

Antennal club with a long, turned-round apex; palpi erect; hindwing at the costal angle somewhat prolonged, analwards somewhat convex. The ♂ is without the scent-scale stripe.

C. fidicula Hew. (= *hesiodus* Plötz) (185 i). Forewing with 3, sometimes 4 white spots, 1 or 2 of which are subapical, the lowest spot being the largest. On the hindwing before the middle of the distal margin an oval white spot. Beneath more reddish, otherwise as above, but the proximal margin of the forewing shows a fifth white spot. Honduras, Costa Rica, Panama. *fidicula.*

C. virbius Cr. (= *hersilia* Plötz) (185 i) is very closely allied to *fidicula*, with broader and shorter wings, the white spot of the hindwing extending to the distal margin. Brazil (Rio de Janeiro). *virbius.*

C. gabina G. & S. (185 i) differs from the preceding by a white cell-spot, and the hindwing being quite unspotted. Beneath somewhat lighter. Mexico. *gabina.*

C. trimaculata Plötz (185 h) has above close together a double cell-spot and below it a large white spot, a small one being behind it. Beneath the same, little lighter, with a large, yellowish-white submedian spot of the forewing. From Brazil. *trimaculata.*

C. bryanti Weeks is doubtfully placed here. Above dark brown, basal half of costal margin strewn with golden yellow; forewing with 2 white subapical dots; 3 white postdiscal spots, the lowest being the largest. *bryanti.*

Through the middle of the dark brown hindwing extends an indistinct darker line. Beneath both wings are uni-coloured dark brown. Expanse of wings: 28 mm. Venezuela (Suapure).

- gabinus*. **C. gabinus** Plötz (185 i) is above uni-coloured blackish-brown, beneath the same, on the hindwing with 3 or 4 white, roundish postdiscal spots situate close together, only separated by the veins, the second from above being the largest and projecting towards the base; occasionally there is another dot in the disc. Brazil (Santos, Rio, Sa. Catharina).
- herminieri*. **C. herminieri** Latr. (186 a) is above blackish-brown, beneath a little lighter brown, on the hindwing more reddish, with 2 grey, small, postdiscal diffuse spots behind the lower cell-end; veins somewhat darker. Venezuela, reported from Carolina.
- nigrans*. **C. nigrans** Schs. Wings blackish-brown, beneath duller, Forewing beneath with 2 small greyish-white spots between and above the median veins, anal angle lighter brownish-grey; hindwing with an orange dot at the cell-end and 2 similar ones behind and above the cell. Costa Rica.
- laureolus*. **C. laureolus** Schs. Above blackish-brown, above on the forewing in the middle the veins darkened, hindwing in the basal half darker. Beneath lighter brown, only in the basal third of the forewing and a subapical triangular spot dark, before the latter with 3 grey dots, anal angle lighter. On the hindwing the base, a postdiscal band and large marginal spots are darker brown. Costa Rica.
- lateranus*. **C. lateranus** Schs. The blackish-brown forewing shows transparent, white spots: a large one at the cell-end, a large one below it between the median veins, and a smaller one above it more distally, a small one below it and 3 small subapical ones. Beneath the forewing is at the apex, costal and distal margins and the hindwing olive-brown, the latter with a white cell-spot and another one below the lower cell-angle. Looks above like *gabina* (185 i). Costa Rica.
- pindar*. **C. pindar** Schs. Smaller than the preceding, the spots brownish, without the cell-spot of the forewing; hindwing with a yellow hyaline dot below the lower cell-angle. Beneath lighter brown, costal margin and cell of forewing more yellowish-brown, the spots as above, anal angle lighter. Hindwing brown, transverse vein and 5 postdiscal spots darker brown, that below the lower cell-angle pupilled with the hyaline dot. Costa Rica.
- eteocla*. **C. eteocla** Plötz (= *ulrica* Plötz?) (186 b). Above blackish-brown, with a small, white cellular and submedian dot, larger postdiscal spots and 2 subapical dots. Beneath lighter violettish-brown, with blackish veins, in the anal part of the forewing lighter, with a red-brown inner-marginal part of the hindwing. From Rio de Janeiro.
- argus*. **C. argus** Mschlr. (= *yva* Plötz) (186 a) resembles the preceding above, but the subapical spots of the forewing are absent. Beneath grey, hindwing with a black cell-spot and 4 behind it in an irregular row, all of them ringed lighter. Panama to Colombia and Argentina.
- chinoba*. **C. chinoba** Weeks is above uni-coloured dark brown, towards the margin somewhat lighter with darker, small, indistinct spots in the internerval spaces near the distal margin, on the hindwing a little more distinct. Beneath brownish-drab, on the hindwing striated somewhat darker; an indistinct, darker transverse band extends from the apex to the middle of the proximal margin, another one along the distal margin; the black marginal spots are much more distinct than above; inner-marginal area light grey. Expanse of wings: 27 mm. Venezuela (Suapure).
- percosius*. **C. percosius** G. & S. (186 a) looks above like *argus*, but the forewing is without the cell-spot, but there are 3 small, subapical spots. Hindwing often with 2 small light postcellular spots. Beneath on the hindwing at the cell-end a yellow dot and 2 near the distal margin. Forewing at the anal angle lighter, yellowish-grey. Mexico, Guatemala and Panama.
- quadrum*. **C. quadrum** Mab. is above smoky black, forewing with a small subapical dot and 2 white postdiscal spots. Beneath lighter, the spots light yellow, the proximal margin of the forewing whitish, in the submedian space more ashy-grey. Hindwing black with a large, quadrangular white spot between the upper radial vein, and the inner-marginal fold, touching the distal margin. Palpi red, laterally black. Expanse of wings: 34 mm. Rio San Juan (Colombia).
- paculla*. **C. paculla** Mab. is somewhat smaller, above the subapical dot another one being hardly visible; the postdiscal spots are small, quadrangular. Hindwing here also above with a white marginal band-spot from the middle radial vein to the proximal margin; fringes above it spotted white. Beneath similar, the inner-marginal area whitish. Expanse of wings: 32 mm. Villa Bella (Brazil).
- physcella*. **C. physcella** Hew. (186 a). Above blackish-brown with a greenish reflection, 4 postdiscal white spots in an oblique row and 3 subapical dots; on the hindwing with white fringes there are 3 subapical white dots. Beneath the hindwing exhibits a broad, white distal-marginal part with a series of brownish, small dust-spots in the middle, parallel to the distal margin. Brazil.
- elegantula*. **C. elegantula** H.-Schäff. (186 b) entirely resembles above the following *quadrangula*, but it has lighter yellowish fringes. On the under surface the basal half of the costal margin and the apex of the forewing are light violet like the hindwing with a rather broad, brown, undulate marginal line. The hindwing shows right

across the middle a broad, brown transverse band distally accompanied by a fine undulate line; basally another brown spot, the inner-marginal part broad and brown. Brazil.

C. lysiteles *Mab.* is only doubtfully placed here. Jet-black, with white-hyaline spots: 3 subapical ones, 2 long ones in the cell and 4 in an oblique line behind them. Hindwing with a large oval spot with a dentate distal margin in the middle, on the teeth dusted light blue, and with a bluish-white longitudinal ray on the inner-marginal fold. Forewing beneath black with a grey proximal margin; hindwing purple black, the white spot larger, extending from the subcostal to the inner-marginal fold. Expanse of wings: 38 mm. Saragura. *lysiteles.*

C. zeppa *Plötz* (186 b) is above deep blackish-brown, with 2 white subapical dots and 2 postdiscal white spots, the lower of which is larger, reniform. Beneath the forewing is at the distal margin and in the anal submedian space light brownish-grey. Hindwing as dark as above, unmarked with light grey fringes. Surinam. *zeppa.*

C. aethra *Plötz* (186 a) is similar, somewhat larger, much lighter brown, the white spots much smaller, subapically only a dot. Beneath as above, scarcely lighter, only the disc of the forewing somewhat darker. Abdomen beneath whitish. Surinam. *aethra.*

C. quadrangula *Plötz* (= *cubana* *H.-Schäff.*) (186 b, c). Blackish-brown with an uncommonly large, quadrangular, white spot below the lower cell-end and a smaller one distally above it, as well as 3 subapical dots. Beneath in the disc of the forewing black, otherwise reddish-brownish or lilac-brownish with a light, yellowish cell-dot and a bent postdiscal row of dots. Brazil and Cuba. *quadrangula.*

C. subcordata *H.-Schäff.* (186 b) is very similar, larger, body and bases of wings faintly greenish, the white spots much smaller with whitish fringes on the hindwings. Beneath as the preceding, but the hindwing unspotted with a deep chestnut disc and lighter brown distal and proximal margins. Brazil (Rio de Janeiro). — The form **olympia** *Plötz* (186 c) is distinguished by one more postdiscal spot and has a small white dot on the hindwing beneath. Fringes tinted more ochreous. Likewise from Brazil. *subcordata.* *olympia.*

C. neroides *H.-Schäff.* (186 c), without its habitat being known, is only doubtfully placed here and greatly resembles *olympia*, but it has one more narrow cellular and submedian spot, the latter yellowish. Beneath more olive-brownish or greenish with a large, whitish anal spot of the forewing and 2 to 4 whitish postdiscal dots on the hindwing. *neroides.*

C. tertianus *H.-Schäff.* (= *warra* *Mschlr.* ♂, *zola* *Mschlr.* ♀) (186 c) is above quite uni-coloured brownish-black, in the ♀ with 2 or 3 postdiscal hyaline spots, beneath lighter; on the forewing behind the middle near the distal margin a dirty white transverse band, on the hindwing the larger basal half is dirty white, like the inner-marginal part. Costa Rica, Guiana. *tertianus.*

C. hilda *Plötz* (186 d) is above blackish-brown, on the hindwing with 3 small, whitish spots behind the lower cell-end. The ♀ has on the forewing 3 large ochreous-yellow postdiscal spots and 3 small apical spots, and on the hindwing in an acute angle to the 3 spots, which are here larger and ochreous-yellow, there is a third above them. Beneath very peculiarly marked: disc of forewing blackish-brown, distal margin behind the discal spots broadly light greyish-brown. Hindwing light brownish-grey, in the discal area, projecting distally in an acute angle and here bordered by whitish, darker; the whitish colour is the broadest towards the proximal margin, below it there is a large and a very small blackish-brown spot; a similar one is situated at the base of the costal margin. Brazil, Blumenau, 1 ♀ from Salta (Argentina) in the Coll. SEITZ. *hilda.*

C. nubila *Mab.* only doubtfully belongs hereto. Light brown with a ferruginous reflection, particularly towards the margin. Beneath lighter, more red; forewing with a submedian lighter, yellowish part, from the base to the middle blackish; hindwing still lighter and more monotonous. Expanse of wings: 36 mm. Porto Cabello. *nubila.*

C. astur *Mab.* Light brown with 2 white subapical dots and 2 spots behind the lower cell-angle, the upper being larger and quadrangular. Hindwing darker, fringes ferruginous brown. Beneath blackish, in the middle of the forewing more grey, only the upper discal spot being visible. Hindwing black with 4 white post-cellular dots, the 2 lower ones being larger. Expanse of wings: 31 mm. Coary. *astur.*

C. cleochares *Mab.* Deep blackish-brown, on the forewing with 2 small white subapical dots and 2 spots behind the lower cell-angle; fringes whitish-grey. Hindwing unspotted with lighter fringes. Beneath on the forewing the spots are more distinct, the distal half is lighter; base of hindwing blacker; a postcellular semicircle of 4 white dots, a fifth in the cell. Expanse of wings: 29 mm. Valera. *cleochares.*

C. oblinita *Mab.* is above dark brown with a light red-brown reflection and orange-brown, scarcely visible spots: 2 subapical ones and 3 postdiscal ones. Hindwing behind the middle lighter, fringes light ferruginous. On the forewing beneath the costal margin and apex are red-brown, the proximal part black with more distinct spots than above. Hindwing brown with a light red-brown band in the middle. The ♀ being placed hereto is larger and has white spots, it may belong to another species. Expanse of wings: 30 to 34 mm. Brazil (Rio Grande). *oblinita.*

C. cannae *H.-Schäff.* (= *osembo* *Mschlr.*, *byzas* *Mab.* i. l.) (186 c, d) resembles *Rinthon bistrigula* *cannae.* above, but it is well discernible by the absence of the stigma; the hyaline spots above are very variable in extent

and may be obliterated. Beneath the forewing is narrowly yellowish at the costal margin and apex, below the apex at the distal margin tinted somewhat lilac, hindwing in the proximal half brownish-yellow, at the distal margin narrowly strewn with lilac, with an indistinct, lighter, straight band from the apex to the middle of the proximal margin, and 2 light spots in the costal half. Mexico to Argentina.

fortis. **C. fortis** Schs. Dark brown, ends of fringes whitish; forewing at the proximal margin haired greenish, spots yellowish-white hyaline, one in the cell, strangulated in the middle, 2 postdiscal ones, the lower of which is the largest, and 3 small subapical ones. Hindwing in and below the cell haired greenish, with 2 small transparent spots above the median veins. Beneath brown, costal margin and apex of forewing, and hindwings strewn with greenish-yellow, base of forewing darker; spots as above, above the submedian another large whitish spot. Expanse of wings: 39 mm. Castro (Paraná).

psyllus. **C. psyllus** is doubtfully placed here. Above black with large, white spots, a large one in the middle of the cell and two between the median veins, the upper one of which is small; base light grey. Hindwing without spots, in the disc dirty yellow, fringes dark grey, speckled with black. Forewing beneath at the apex, distal and proximal margins pearl-coloured grey, hindwing dark grey with a semicircular row of 5 or 6 whitish spots. Bolivia.

derisor. **C. derisor** Mab. Deep brown. Forewing with light yellow spots: 2 subapical ones, the lower of which is larger, 2 strigiform, parallel ones in the cell, and 3 behind them in an oblique row, the lowest of which is the smallest and of a deeper yellow. Hindwing with 2 dots showing through from beneath behind the upper cell-end. Forewing beneath with a darker base, at the costal margin and apex reddish. Hindwing red-brown with a round cell-dot and the two spots mentioned above behind the upper cell-angle. Thoracal hairing of a green reflection. Expanse of wings: 36 mm. Venezuela.

hypoxanthos. **C. hypoxanthos** Mab. Black, towards the base yellowish. Forewing with a quadrangular cell-dot, 2 spots obliquely behind it, the lower one being the largest, quadrangular; 3 subapical white hyaline dots. Base of hindwing and disc brown, with fuscous hair and a black cell-spot and a curved row of black dots before the distal margin. Beneath lighter, basal part yellowish. Hindwing orange, at the distal margin blackish-brown with a curved row of minute black dots, behind them 3 more, at the base one. Abdomen orange with a white median band. Palpi white. Expanse of wings: 46 mm. Cayenne.

poecila. **C. poecila** sp. nov. (186 d). Above blackish-brown, with a ferruginous yellow cell-dot, 2 postdiscal spots and a submedian diffuse patch below them, and 2 subapical dots. Beneath very variegated, costal margin broad chestnut like the apex, the postdiscal ferruginous oblique band very much widened. Hindwing chestnut mixed with blackish, with reddish-yellow spots at the cell-end, behind it, below it near the proximal margin and at the blackish anal angle. 1 ♂ from Muzo (Colombia) taken by FASSL.

rastaca. **C. rastaca** Schs. is above similar, somewhat lighter brown, the spots smaller, particularly the cell-spot very small. Beneath still lighter brown; beside the spots of above a postdiscal row of 5 small, black spots, the middle one of which is pupilled whitish. Hindwing with a black crescentiform cell-end-streak, behind it 4 black spots, the two lower ones intensely pupilled white, the 3rd indistinctly so, the uppermost quite black. Expanse of wings: 38 mm. Petropolis.

arita. **C. arita** Schs. The dark brown forewing is without the cell-spot, with only one subapical dot. Beneath somewhat lighter, the costal margin of the forewing dusted with reddish, near the anal angle another light spot. Hindwing dusted with violet, with a small yellowish cell-dot and 5 small similar spots behind it in a bent row. Abdomen beneath whitish. Expanse of wings: 26 mm. Trinidad.

stigmula. **C. stigmula** Mab. scarcely belongs hereto. Blackish-brown, costal margin of forewing reddish-yellow; 3 postdiscal hyaline spots; the lowest very small. Forewing beneath blackish, the costal and distal margins reddish; between the apex and lower median vein with a light violet band. Hindwing from the costal margin to the middle radial vein brown, from there whitish lilac, strewn with brown; through the middle extends a row of 6 brown double dots distally spotted white; towards the apex they are smaller and more remote; in the cell a round white spot. Expanse of wings: 21 mm. Patria unknown.

cinerita. **C. cinerita** Plötz (186 d) is just as doubtful. Above blackish-brown with somewhat lighter fringes tinted ochreous, and on the forewing with 3 small postdiscal dots and 1 subapical dot. Beneath the hindwing is entirely unmarked light ashy grey; costal margin of forewing and apex somewhat lighter brown than the black disc, the submedian spot larger and ashy-grey. Brazil.

127. Genus: **Cobalopsis** G. u. S.

Scarcely separable from the preceding, only different by the strong and projecting valves of the ♂. No stigma.

pelora. **C. pelora** Plötz (= *autumna* Plötz, *edda* Mab.) (186 d) entirely resembles the preceding above, the spots are small, especially the cell-dot and 3 subapical ones. Fringes of hindwings tinted ochreous. Beneath the same, forewing with a large, light anal angular spot; the hindwing is somewhat tinted olive and shows 4 post-discal whitish punctiform spots. Mexico to Guiana.

C. dyscritus *Mab.* resembles the preceding, but the hindwing beneath is distinctly ochreous-yellow, *dyscritus*, and the genitals are different. Mexico to Peru and the Amazon.

C. rogersi *Kaye* has an intense bronze-green reflection on the head, thorax and abdomen. Forewing *rogersi*, dark blackish-brown with 3 white subapical dots; below the lower cell-angle there is a large, angular, white spot, a small one distally above it. Beneath the base of the forewing is black, the marginal area lighter; on the hindwing the disc is the darkest. Expanse of wings: 40 mm. Trinidad.

C. musa *Kaye* is somewhat smaller, above very similar, beside the spots of the preceding it has yet *musa*, 2 dots close above each other in the cell-end and another one above the middle of the proximal margin; only 2 subapical white dots. Beneath the same, with a white inner-angular spot of the forewing, and on the hindwing with a cellular spot and 6 white postdiscal spots. Expanse of wings: 35 mm. Trinidad.

C. latonia *Schs.* (189 i). Above dark brown, forewing with a fine whitish strigiform spot below the *latonia*, transverse vein, with 2 small subapical dots and a larger one behind the lower cell-angle. Hindwing with somewhat darker veins. Beneath on the forewing the costal margin, apex and distal margin are lighter yellowish-brown, the proximal margin greyish-whitish; hindwing yellowish-brown, with 5 bluish-white postdiscal spots and a blackish-brown wedge-shaped stripe near the proximal margin. Costa Rica.

C. hebon *Mab.* It is doubtful whether it belongs into this genus. Above blackish-brown with 4 hyaline *hebon*, spots, one in the cell, a small one behind it, a large, quadrangular one beneath the lower cell-angle, and a longish one below it; the base of the costal margin is red-brown, the fringes are light brown. The hindwing is proximally yellowish, behind the upper cell-angle there is a white quadrangular spot, parted by the cellular fold. The proximal margin is very concave with a broad, obtuse anal lobe. The forewing is beneath the same, at the costal margin lighter reddish, at the apex lilac, the hindwing is red-brown. Expanse of wings: 38 mm. Amazon (Massauary).

128. Genus: **Onophas** *G. & S.*

Antennae longer than half the costal margin; club as in *Cobalus*. Hindwing prolonged at the anal angle, middle tibiae spined. The ♂ exhibits a narrow, oblique scent-scale stripe from the rise of the upper median interrupted as far as below the lower median vein; above the middle of the submedian there is a transverse fold.

O. columbaria *H.-Schäff.* (— flossites *Btlr.*) (186 e) is easily discernible from all the similar species *columbaria*, by the bluish-green head, body and base of wings, and the ochreous-yellow under surface of the hindwings. Above the forewing is blackish-brown with 2 indistinct, dirty ochreous-yellow, small spots between the median veins. Distributed from Panama to Brazil, and in Trinidad.

129. Genus: **Arotis** *Mab.*

Antennae as in the preceding. Distal margin of forewing convex, the middle radial vein at its rise nearing the lower one. Middle tibiae without spines. The ♂ has a treble scent-spot: a straight stripe from the base of the upper median to the lower median vein, and in the submedian area 2 thick spots of erect scales.

A. sirene *Mab.* Above blackish-brown, distally somewhat reddish. Beneath the base of the forewing *sirene*, is blackish, in the marginal area beautifully violet. Hindwing in the basal half blackish-brown with a white cell-end dot, behind it whitish-lilac, with black veins, at the margin darkened. Brazil.

130. Genus: **Oeonus** *G. & S.*

Antennae half as long as the costal margin; the middle radial vein at its rise strongly bent downward; hindwing at the anal angle prolonged; middle tibiae spined. An oblique scent-scale stripe extends in the ♂ from below the base of the upper median vein to the lower vein near its rise, a short stripe is situate close below it, and a third in the middle of the submedian vein.

O. pyste *G. & S.* (186 e) is similar to *columbaria* above, without the intense green hue, only the *pyste*, frons somewhat greenish. It is larger, the 2 spots of the forewing are more distinct, the stigma thinner, more distinct; forewing sometimes with a minute subapical dot. Beneath lighter, the hindwing with 4 yellowish small dots near the distal margin. Mexico.

O. nausiphanes *Schs.* (189 c) is above dark brown, the costal margin of the forewing is somewhat *nausipha-* scaled yellowish, the black scent-stripe fine; fringes of hindwing yellowish-grey. Beneath the forewing is darker *nes*, in the basal halves of the cell and of the proximal margin. Hindwing dull brown with a broad, whitish discal shade, the broadest at the costal margin and not reaching to the proximal margin strewn with greyish-white. Costa Rica (Poas).

O. garima *Schs.* Dark brown, fringes greyish-brown; forewing with minute hyaline spots: a sub- *garima*, apical one, two at the cell-end, a small one behind the lower cell-end, being strangulated in the middle, a qua-

drangular one farther distally to it, only a small whitish submedian one behind the stigma. Beneath light olive-brown, forewing at the base of the costal margin blackish, the submedian spot larger. Hindwing with a small whitish spot at the cell-end, behind it in a bent row 6 minute whitish spots between the veins. Expanse of wings: 27 mm. Trinidad.

degener. **O. degener** Plötz (186 e) is above blackish-brown, on the body with a faint greenish reflection with a grey stigma, two postdiscal white spots, the lower of which is oblong and distally bordering on the stigma, and a subapical dot. Beneath scarcely lighter, in the disc of the forewing black, with 3 or 4 light postdiscal dots on the hindwing. Colombia (Pacho).

lydora. **O. lydora** Plötz (186 e) is similar, the body much robuster, the two postdiscal spots of the forewing much larger, quadrangular. The hindwing exhibits also above behind the lower cell-end a white dot. Fringes somewhat ochreous-brownish. Beneath more ochreous-brown, disc of forewing black, with a submedian large yellowish-white diffuse spot. Hindwing strewn with blackish, with 2 white postdiscal dots. Venezuela.

131. Genus: **Mucia** G. & S.

Distinguished from *Oeonus*, in which the lower median vein of the forewing rises before the middle of the cell, by this vein rising from the middle of the cell; ♂ stigma a little bent, oblique, of 3 parts: a short scent-stripe from the rise of the upper median vein to the rise of the lower one, beneath it an oblique stripe and a straight one from the middle of the submedian.

thyia. **M. thyia** G. & S. (186 e) is above like *Onophas columbaria*, but without bluish-green, the small spots smaller. Beneath the same, forewing with 4 subapical black dots. Hindwing with 3 such dots near the apex in a bent row, whereby it differs from all the similar species. Mexico to Matto Grosso.

matalma. **M. matalma** Schs. is above dark brown with a semi-transparent white spot behind the narrow black stigma, and a smaller one behind the lower cell-angle. Beneath olive-brown, forewing in the basal half dark brown, at the anal angle a somewhat lighter patch. Costal margin of the hindwing darker, near the apex a black dot and a postdiscal row of black dots, the 2 lowest being the largest. Expanse of wings: 34 mm. Petropolis.

132. Genus: **Morys** G. & S.

Discernible from the preceding genera by the hindwing being somewhat lobate at the anal angle, and the different scent-organs extending as an oblique, broad stripe from the lower median vein to the middle of the submedian.

valerius. **M. valerius** Mschlr. (= *cerdo* Bsd.?) (186 e). Above as the preceding, but with 2 subapical dots. Beneath lighter, hindwing with 4 yellowish dots in a bent row near the apex. The ♀ is tinted more purple, often with 3 white-hyaline postdiscal spots. It looks very much like *Megistias tripunctus* which, however, is without the scent-stripe. Mexico to Colombia, Venezuela and Brazil; Trinidad.

credula. **M. credula** Plötz (186 f) is much larger, but owing to the similar scent-stripe it may belong hereto. On the blackish-brown forewing there are in the cell 2 large white hyaline spots, behind them 3, and 3 subapical ones; scent-stripe silvery grey bordered with black. Beneath only somewhat lighter, more brownish. Brazil.

133. Genus: **Perimeles** S. u. G.

Separated from the preceding genera by the long-haired legs and by the scent-organ of the ♂: a bent stripe extends from the base of the upper median vein to the rise of the lower one, below it there is a short stripe and a transverse part proceeds from the middle of the submedian.

remus. **P. remus** F. (= *justinoides* Btlr.) (186 f) is a common, well-known species, easily discernible by the characteristic under surface of the hindwing: in the basal quarter deep chestnut-brown, distally bordered by whitish like the whole costal margin, in the anal three quarters gradually turning greyish-brown. Above monotonously brown. From Mexico to Brazil and Trinidad. — f. **vopiscus** H.-Schöff. from Mexico is beneath more variegated, with a more chestnut tint, on the forewing with 2 pinkish-reddish costal-marginal spots.

beda. **P. beda** Plötz (186 f) is a small species which may belong hereto. Above black with 2 minute postdiscal and 3 subapical whitish dots of the forewing, of the latter the middle dot is removed proximally. Fringes very faintly speckled lighter. Beneath the forewing is duller, more brownish, the fringes more distinctly speckled. Hindwing in the costal half with a light brownish-white broad longitudinal stripe from the base, which is sharply defined below towards the dark anal part, towards the costal margin gradually passing over into the narrow dark costal margin; in the middle of the light part there are some small dark brown spots. Brazil (Blumenau).

134. Genus: **Tigasis** G. & S.

Antennae longer than half the costal margin; otherwise all the same as in the preceding, except the ♂ scent-organ; a bent stripe obliquely running from the rise of the upper median vein to the middle of the submedian and being parted by the lower median vein.

T. zalates G. & S. (186 f) is above uni-coloured blackish-brown, with a darker stigma. Beneath somewhat lighter, more reddish, the proximal margin of the forewing near the anal angle still lighter. Costa Rica.

T. hemeterius Plötz (186 g) may perhaps belong hereto, since it shows the same scent-stripe, but the forewing is somewhat longer, the apex more produced. The blackish-brown forewing exhibits one small white postdiscal and subapical punctiform spot each. Beneath the same, in the disc of the forewing darkened; on the hindwing there are behind the lower cell-angle also 2 minute white dots. Patria unknown. GODMAN mentions a couple of the same species from Cuba without the white spots; this form may be denominated: *godmani* form. nov.

T. samedra H.-Schäff. (= *erebina* Plötz) (186 g) is not identical with *Rinthon cynea* (185 h), but owing to the quite different scent-organ it much rather belongs hereto, although it does not quite match to it; the stigma consists of a stripe between the median veins on the median and a very short part below it in the same direction. The species entirely resembles *hemeterius* above, but it has one more postdiscal spot between the median veins. Beneath somewhat lighter, more reddish brown, in the disc of the forewing black; the hindwing shows some insignificant postcellular accumulations of greyish-white scales. Brazil.

T. aphilos H.-Schäff. (= *obeda* Btlr.) (186 g) may also be ranged into this group of species. Above blackish-brown with one postdiscal and 3 subapical small white spots. Fringes of hindwings white, on the hindwing smoky. Beneath somewhat more reddish brown. Venezuela.

T. cyrus Plötz (= *duroca* Plötz) (186 g) is placed to *aphilos* by GODMAN. Above blackish-brown, with a greenish reflection on the body and base of the wings, and 2 small white postdiscal spots. Beneath the same, but somewhat more reddish. Rio de Janeiro.

T. misera Schs. may provisionally be inserted here. Above dark brown with blackish fringes and a long, narrow scent-stripe below the cell between the median veins and from there twice interrupted to the submedian. Beneath brighter brown, the hindwing with 2 small yellow spots behind the cell, one behind the upper, the other behind the lower cell-angle. Expanse of wings: 40 mm. Petropolis, also in Trinidad.

135. Genus: **Eutyichide** G. & S.

Antennae half as long as the costal margin. Otherwise very closely allied to *Cobalus* from which it differs by the lower median vein of the forewing rising before the middle of the cell; hindwing analwards produced. The stigma is composed of a very much extended, acute-angled part between the bases of the two median veins, a longitudinal stripe below it and a third similar one on the submedian.

E. cingulicornis H.-Schäff. (186 g) is above brown, behind the cell of the forewing there are 3 white spots in a straight row, subapically there are 1 or (in southern specimens) 2 small spots, and there is often also a cellular spot. The hindwing exhibits 2 small spots behind the cell, which are absent in southern specimens. Beneath the costal margin of the forewing is reddish-yellow in the basal half, the anal angle light grey; the hindwing is in the basal third lilac-whitish grey, distally red-brown. Antennal club at the base curled yellow. Guatemala to Brazil, also in Trinidad.

E. complana H.-Schäff. (= *midia* Hew., *gura* Plötz, *favetta* Plötz) (186 g, h) is much larger; on the forewing there are only 2 yellowish postdiscal spots and 3 subapical ones; the hindwing is uni-coloured. Beneath the same, scarcely lighter, the hindwing with 1 or 2 yellowish dots behind the cell. Head and body are haired greenish. Mexico to Venezuela.

E. ochus G. & S. (186 h) is smaller, with smaller spots, the green on the body scarcely traceable; it also greatly resembles *Rinthon cynea* (185 h), but it is separated by the scent-organ and the absence of the light anal angle on the forewing beneath. Mexico to Guiana and the Amazon, and from Trinidad.

E. orthos G. & S. (186 h) is still smaller than *ochus*, the subapical dots are absent. On the under surface the proximal margin of the forewing is lighter, the stigma above much less developed and finer. Head and body are greenish, the abdomen beneath white. Panama.

E. lycortas G. & S. (186 h) resembles *ochus* above, but it differs above by a submedian, oblong, white spot of the forewing. Beneath very different, the submedian spot extraordinarily large, greyish-white; costal margin chestnut-coloured, in the apex with an oblique silvery line, the distal margin lighter grey; on the hindwing the costal margin is broadly chestnut-brown, the distal margin strewn with a lighter grey, with an indistinct light grey band from the apex to the cell-end, proximal margin purple-brown. Mexico.

- achelous*. **E. achelous** Plötz (= *paria* Plötz) (186 h). Above lustrous blackish-brown, not spotted, stigma of the same colour, very well developed; head and thorax with green hair. Beneath the proximal margin of the forewing is more whitish than in the preceding. Panama, Venezuela.
- umber*. **E. umber** H.-Schäff. is above the same. Beneath lighter, proximal margin of forewing and anal angle whitish as well as a spot behind the cell, apex, costal margin and hindwing reddish. From *Mnasinous patage* (177 g), which it resembles above, it is separated by the very well developed stigma. Panama.
- asemat*. **E. asema** Mab. (186 h). The colouring above is more dull greyish-brown, the stigma of the same colour. Beneath lighter, on the hindwing scantily strewn with whitish; behind the cell there are 3 black dots. Honduras, British Guiana.
- subsordidus*. **E. subsordidus** Mab. looks above like the preceding, but scantily strewn with yellowish and has thereby a brownish effect. The hindwing is darker at the costal margin. The under surface is lighter, the forewing in the costal half and the whole hindwing strewn with ochreous-yellow, the margining of the eyes and palpi are likewise ochreous-yellow. Honduras.
- leptosema*. **E. leptosema** Mab. Blackish-brown with dark grey fringes, behind the black scent-spot there is a light yellow part. The under surface is reddish, in the proximal half of the forewing blackish, in the middle lighter yellowish-grey, the broadest below the median. Body black, the last abdominal ring ferruginous-brown. Expanse of wings: 36 mm. Rio Grande.
- phaetusa*. **E. phaetusa** Hew. Above dark red-brown, on the forewing with 6 silvery-white, transparent spots: one in the cell, 3 postdiscal ones and 2 subapical ones, hindwing with 2 small spots behind the cell. Beneath coloured the same, the lowest postdiscal spot is very much enlarged and united with that above it; the basal half of the costal margin and the apex is striped ochreous-yellow; the base of the hindwing is broad white, marked with indistinct brown spots. Expanse of wings: 1½ inch. Ega.
- astiga*. **E. astiga** Schs. Above brown, forewing at the proximal margin darker; between the median veins there is a small, olive-yellowish spot and farther distally above it another one. On the under surface the costal margin of the forewing and the apex are broad, the distal margin narrowly olive-brown, the rest black. Hindwing olive-brown with a small, black spot between the median veins and another one between the lower radial veins close at the cell-end, behind it some lighter diffuse spots. Expanse of wings: 27 mm. Castro, Paraná.
- candallariae*. **E. candallariae** Strand. Above blackish-brown, especially on the hindwing with some yellowish hair. Forewing with 2 whitish subapical and 2 postdiscal spots, the lower of which represents an angle being open towards the margin. Beneath deeper black, the lowest spot yellowish, behind it a yellow inner-angular patch; the hindwing with an almost rectangularly broken lighter band before and a similar broader brownish-yellow one behind the middle. Expanse of wings: 26 mm. Costa Rica.
- petrovna*. **E. petrovna** Schs. is above dark brown, without markings, with greyish-brown fringes, beneath scantily strewn with grey. This species is easily recognizable by the somewhat different scent-spot: on both sides of the lower median vein not sharply defined stripes extend to about one fifth of the length of the vein, and a black thickening along the submedian from the middle almost to the base. Expanse of wings: 30 mm. Petropolis.
- barnesi*. **E. barnesi** Schs. Thorax with dark green hair; the dark brown wings are tinted olive. Forewing in the basal half of the proximal margin with some whitish hair; between the median veins there is a large, hyaline white spot, a smaller one above it nearer at the distal margin, and a very small subapical one. Fringes of the hindwing at the anal angle white; a white spot is behind the lower cell-angle, parted by the upper median vein into a larger upper half and a small lower half. Beneath darker, apex of forewing dusted with lilac, before the distal margin very small dark spots. Hindwing lilac-brown with a dark basal shade and a broad oblique shade from the apex to the dark proximal margin; before the distal margin there are small dark spots between the veins. Expanse of wings: 30 mm. Petropolis.
- sabina*. **E. sabina** Plötz (186 h). Above blackish-brown with 2 small, in the ♀ larger and quadrangular white postdiscal spots and 3 subapical dots. Fringes of the hindwing white, on the forewing smoky. Beneath the species resembles a *Cymaenes*. Apex of the forewing, and hindwing light grey, in the ♀ more yellowish-reddish striated with red-brown, the most densely so at the costal margin and analwards with 3 dark, confluent spots at the lower cell-end; the costal margin of the forewing is broad red-brown. Brazil (Novo Friburgo).

136. Genus: **Phanes** G. & S.

Antennae somewhat longer, palpi as in the preceding. The ♂ scent-spot is angular, the larger side along the median between the veins, the shorter side along the lower median vein.

justinianus. **Ph. justinianus** Latr. (aletes *Hbn.*) (186 i). Above like *Eutycheide lycortas* (186 h), beneath blackish-brown, the forewing analwards lighter. Disc of the hindwing ochreous-yellow, bordered by dark spots, otherwise dusted lilac like the apex of the forewing. Antennal club basally curled yellow. Mexico to Brazil.

almoda. **Ph. almoda** Hew. (186 i). Above blackish-brown with 3 white postdiscal spots and 2 small subapical dots. Beneath the costal part and apex of the forewing is light lilac like the hindwing; all the veins light yellowish

on both sides finely bordered with black; at the cell-end there is a large yellow spot, on both sides bordered with black, and before the distal margin a row of small black spots; fringes speckled somewhat darker. From Brazil.

Ph. rezia Plötz (= *metanira* Mab.) (186 i) is somewhat smaller, above the same. Beneath the veins are not striped lighter, and the yellow cellular spot is absent, only the black spots are present; the submarginal row on the hindwing is not quite parallel to the distal margin, but somewhat deposited below the apex. Brazil.

Ph. cumbre Schs. Above brown with greyish-brown fringes, forewing with 3 small subapical and 2 postdiscal hyaline white spots, the lower being larger. Beneath the same, the costal margin of the forewing tinted reddish, apex and upper half of the distal margin dark grey. Hindwing beneath greyish-brown, in the disc darker, tinted reddish; at the cell-end there is a small light spot, behind it in a bent row several small light spots, the veins and a marginal line darker. Expanse of wings: 26 mm. Petropolis.

Ph. tavola Schs. is larger than the preceding with but one subapical dot and 2 postdiscal spots. Beneath the base of the forewing is blackish, the costal margin and apex dusted reddish. Hindwing likewise dusted reddish with a very small, grey distal-marginal spot above the upper median vein. Expanse of wings: 30 mm. Trinidad.

Ph. sylvia Kaye seems to be very closely allied to *tavola*. Blackish brown with 2 white postdiscal spots, the lower rectangular close beneath the lower cell-angle, the upper more quadrangular farther distally; 3 subapical dots. Beneath tinted more reddish, veins lighter brownish, on the hindwing a row of oblong, grey, small spots. Ventrums whitish, the 2nd palpal joint orange and black. Expanse of wings: 30 mm. Trinidad.

Ph. ochroneura Mab. It is questionable whether it may be placed to this genus. Above ferruginous black, hindwings rounded. Fringes yellowish-grey, on the forewing somewhat darker with 2 small subapical dots and 3 yellow postdiscal spots. Forewing beneath black, the veins at the costal margin and apex deep yellow. Hindwing likewise black, with ferruginous yellow veins, the proximal margin dull black, with a yellow longitudinal ray, and a postdiscal row of yellow dots, before the fringes with another similar small streak. Expanse of wings: 32 mm. Massauary.

137. Genus: **Euroto** G. & S.

Separated from *Eutyche* by a different stigma: one stripe is situate on the median between the two branches, another shorter one below it.

E. compta Btlr. (= *geisa* Mschr.) (186 i). Brown with 2 postdiscal and 1 to 3 subapical small spots on the forewing. Beneath as above, but lighter, forewing towards the anal angle with an indistinct small ochreous band. Veins of hindwings light ochreous-yellow, at the cell-end there is an ochreous-yellow punctiform spot and in a bent row 6 behind it. Panama to Colombia and Brazil; Trinidad.

E. lyde G. & S. (186 i) differs from *compta* above by only one minute dot between the median and lower radial vein, and 3 subapical dots. Beneath the proximal and distal margins are lighter; the hindwing shows behind the middle and before the distal margin lilac transverse bands, the basal area is spotted somewhat lilac. Mexico to Costa Rica.

E. micythus G. & S. (186 i) is above like *lyde* or also without any spots, very variable. Beneath lighter, on the forewing the costal margin and apex are more reddish than the whole hindwing, the forewing is lighter at the anal angle. On the hindwing at the cell-end a light ochreous-yellow dot and below it 2 or 3 more. Mexico to Costa Rica.

E. chlorocephala G. & S. (186 i) is above without any spots, with a large black stigma; head and thorax are green, the eyes very large. The under surface is lighter with 2 or 3 small lighter postdiscal spots; the hindwing exhibits a cell-end dot and 2 or 3 more in a bent row behind it. Panama.

E. oeagrus G. & S. (187 a). Above brown with 2 very large, coherent, yellow-hyaline postdiscal spots, and a subapical one; the costal-marginal area, the submedian area and the proximal part of the hindwing is above strewn with golden yellow. Beneath as above, the costal margin, apex and hindwing strewn with golden yellow, fringes ochreous-yellow. Costa Rica.

E. etelka Schs. Dark brown, ends of fringes grey. Forewing with 2 white subapical dots and 2 very small postdiscal spots. Beneath brown, distal margin of the forewing not dusted, the spots large. Hindwing at the proximal margin brown, otherwise violet with light brown veins; at the cell-end there is a small lilac spot, behind it in 2 rows lilac spots. Expanse of wings: 28 mm. Trinidad.

E. coler Schs. is above plainly dark brown, hindwing at the proximal margin blackish. Beneath the same with accumulations of minute yellow scales in a bent row behind the cell. Expanse of wings: 25 mm. Novo Friburgo.

E. hyperythrus Kaye is above dark reddish brown; behind the cell of the forewing there are 2 small hyaline spots, below them 2 larger ones. Beneath the marginal area of the forewing is lighter brown than the base and cell, the disc of the hindwing is reddish. Expanse of wings: 28 mm. From Trinidad.

E. simplicissima Kaye. Above brownish-ochreous; below and behind the lower cell-angle of the forewing there are 2 white, small hyaline spots, subapically 3 minute dots. On the hindwing the costal margin is darker. Beneath the proximal part of the forewing is blackish, the proximal angle lighter, hindwing unicoloured brownish-ochreous. Expanse of wings: 32 mm. Trinidad.

cocoa. **E. cocoa** *Kaye* is larger than the preceding, brownish-black, the basal half of the costal margin scaled golden; postdiscally there are 3 yellowish hyaline spots, the lowest of which is the largest; in the continuation there are 2 subapical dots. Hindwing more intensely scaled greenish golden. The forewing beneath is proximally blackish; hindwing brownish, somewhat iridescent with an indistinct row of lighter postdiscal spots. Expanse of wings: 34 mm. Trinidad.

purgis. **E. purgis** *Schs.* Above uni-coloured dark brown, beneath the same. Hindwing dark reddish-brown with a small white patch at the cell-end and a similar one behind it below the lower median vein; before the distal margin there is between the radial veins a large white spot and 2 smaller ones below it. Expanse of wings: 27 mm. Petropolis.

ritans. **E. ritans** *Schs.* Wings dark brown; the scent-spot extends below the median to the upper median vein. The under surface is likewise dark brown, the hindwing dusted reddish with a small yellow postdiscal spot near the apex and 2 others nearer to the anal angle. Expanse of wings: 25 mm. Petropolis.

138. Genus: **Phlebodes** *Hbn.*

Palpal terminal joint conical, very short; on the forewing the middle radial vein is strongly bent down at the base. Hindwing at the anal angle somewhat prolonged. The scent-stripe extends from the rise of the upper median vein to the middle of the submedian.

tiberius. **Ph. tiberius** *Mschlr.* (= *pertinax* *Wts.* nec *Cr.*) (187 a). Above brown, the grey stigma is on both sides bordered with black; behind and below the cell of the forewing there are 4 spots in a bent row, the uppermost is very small, or also entirely absent; besides there are 3 subapical dots, all of them ochreous-yellowish. The under surface is lighter, the costal margin and apex of the forewing ochreous-yellow, the spots indistinct; the costal margin of the hindwing is broad yellowish like a transverse row of spots behind the cell. Mexico to Colombia and Guiana; Trinidad.

pertinax. **Ph. pertinax** *Cr.* (187 a, b). Above blackish-brown, with a white cellular spot, 2 postdiscal ones behind it and 2 subapical dots; besides a submedian yellowish patch. Hindwing analwards with 2 or 3 lighter dots near the distal margin. Beneath the apex of the forewing and the hindwing shows a steel-blue reflection, with fine yellowish veins and a postdiscal row of 5 small whitish dots. Surinam.

reticulata. **Ph. reticulata** *Plötz* (= *meton* *Mab.*, *suffenas* *Mab.*) (187 a). Jet-black, costal margin of forewing as far as the cell-end, and the submedian space are light reddish-yellow; an indented band extends from the apex to the lower median vein, it is below gnawed out and behind separated from the reddish-yellow colour by a black streak. Hindwing black with a reddish-yellow, rounded discal spot separated by the veins. Beneath the forewing is yellowish at the costal and distal margins, in the disc blackish, the oblique band only feebly pronounced. Hindwing dirty yellow, postdiscally darkened, in it a lighter band from the costal fold to the inner-marginal fold, analwards more yellow. Expanse of wings: 27 mm. Teffé.

matuta. **Ph. matuta** *Plötz* (187 b) is perhaps allied to *reticulata* (187 a) and differs by the orange band of the forewing being composed more of separate and smaller spots. The hindwing, however, is very much more extensively orange, with fine black veins, and uniformly narrow black margins. Patria unknown.

vetula. **Ph. vetula** *Mab.* approximates *pertinax* *Cr.* (187 a, b). Blackish-brown, fringes grey. Beneath browner, disc of forewing blackish-brown, at the apex with yellow veins, at the proximal angle light. Hindwing blackish-brown, with yellow veins. Brazil.

voranus. **Ph. voranus** *Mab.* doubtfully belongs to this genus. Ferruginous black, the costal margin of the forewing as far as the cell-end reddish-yellow; at the apex begins a reddish-yellow band and expands to the submedian, being divided by the veins into 6 dissimilar spots, proximally to it there is the black scent-stripe. Hindwing ferruginous-brown with short reddish-yellow postdiscal spots. Beneath the forewing is light reddish brown, in the middle and at the base blackish, the macular band lighter than above. Hindwing yellowish-brown with a broad whitish-yellow band extending from the costal margin across the cell-end to the inner-marginal fold. Expanse of wings: 27 mm. Colombia.

trebius. **Ph. trebius** *Mab.* Light brown with 3 small subapical dots and a white postdiscal spot behind the cell; hindwing with yellow hair. Forewing beneath brown, at the costal margin red-brown, the dots somewhat larger and one more at the lower cell-end, the distal margin being lilac-grey. Hindwing blackish, at the base darker, towards the apex with 2 lighter quadrangular spots. Expanse of wings: 27 mm. Bogotá.

iheringii. **Ph. iheringii** *Mab.* Above blackish or olive-brown, on the forewing with 3 white subapical hyaline dots and 2 small postdiscal spots. Fringes of the forewing brown, at the hindwing ochreous. Beneath the forewing is blackish at the base, at the costal margin as far as the hyaline dots reddish, and below the discal spots lighter yellowish. Base of hindwing blackish, in the marginal area yellowish or reddish-grey or also reddish-yellow, always lighter. Expanse of wings: 27 to 28 mm. Rio Grande do Sul.

mengeli. **Ph. mengeli** *Weeks* is doubtfully placed here. Above dark brown with 2 minute white subapical spots, a larger one behind the lower cell-end and below it 2 small ones next to each other. Stigma black. Hindwing dark brown with 4 whitish, small indistinct spots towards the apex behind the cell towards the anal angle. Beneath somewhat lighter brown, near the anal angle of the forewing dusted with whitish. Hindwing light

brown, with lighter veins, the light spots connected more like a band: in the disc before them there are traces of a similar band. Expanse of wings: 1.1 inch. Venezuela (Suapure).

Ph. metonidia Schs. Above dark brown, basal half of costal margin of the forewing ochreous-yellow; a postdiscal row of bright yellow spots, those between the radial veins being very small, below the cell proximally bent and bordering distally on the stigma. Hindwing with greenish ochreous hair, with a postdiscal row of ochreous-yellow, small spots. Beneath the base and proximal margin of the forewing is blackish, the costa and apex dark ochreous-yellow, spots as above, but darker. Hindwing ochreous-yellow, with yellow veins, the small postdiscal spots very indistinct. Expanse of wings: 27 mm. Brazil (Tijuca). *metonidia.*

Ph. fartuga Schs. is above dark brown with reddish yellow fringes. Forewing with bright yellow spots behind the cell and submedian, the latter and the two upper ones very small, that between the median veins large. Hindwing without markings, with ochreous-brown hair. Beneath the colour is violettish-brown, the veins ochreous-yellow; forewing in the disc and at the proximal margin blackish, the submedian spot is absent. Expanse of wings: 24 mm. Novo Friburgo. *fartuga.*

Ph. gulala Schs. Above dark brown with grey fringes; forewing at the costal margin above the cell with yellow hair; behind the stigma there is a yellow diffuse spot; between the median veins and above them there is one distally concave hyaline spot each. Hindwing haired olive, with a yellowish-patch behind the lower cell-angle. Beneath olive-brown, proximal margin of forewing blackish, with a whitish submedian spot; hindwing with 2 small yellow spots below and behind the cell. Expanse of wings: 34 mm. Brazil (Tijuca). *gulala.*

Ph. chittara Schs. is much smaller, otherwise above similar; the yellow hairing of the costal margin is absent; the 2 postdiscal spots are whitish hyaline, and a small round subapical spot. On the hindwing there are 2 small, faint, yellow spots behind the cell. Beneath the costal margin and apex of the forewing are strewn with a yellowish grey, hindwing entirely yellowish-grey with a small white spot at the lower cell-angle and 3 small round spots behind it, 2 analwards, one farther apically. Expanse of wings: 29 mm. Trinidad. *chittara.*

Ph. unia Btlr. (187 b). Above dark brown with 3 small subapical and 3 larger postdiscal spots; hindwing with an ochreous-yellow wedge-shaped stripe bending round behind the cell towards the apex. Fringes at the anal angle of the forewing, and the whole hindwing ochreous. Beneath the hindwing is yellow with small, indistinct, brownish antemarginal spots, 2 larger, dark brown postcellular spots and 5 postdiscal white spots. Brazil. *unia.*

Ph. odilia Plötz (187 b) is very similar, above the same, beneath lighter, at the costal margin of the forewing and apex red-brown and lighter grey; the hindwing is very light reddish sand-coloured, without the white spots of the preceding. Brazil. *odilia.*

139. Genus: **Lerema** Seddr.

Antennae shorter than half the costal margin; club with a long reverted apex. Last joint of the palp short, conical. On the forewing the middle radial is basally only slightly bent. Middle tibiae spined. The scent-scale spot of the ♂ consists of a thick, indented, interrupted stripe extending from the rise of the upper median vein to the submedian.

L. accius Abb. & Smith. (= *monoco* Seddr., *nortonii* Edw., *punctella* Grt. & Rob., *ceramina* H.-Schäff., *pattenii* Seddr., *phocyliides* Plötz) (187 b). The upper surface is blackish-brown with 3 white, subapical small spots and 3 somewhat larger, but more or less dark dusted or blurred postdiscal ones. Beneath the costal margin of the forewing is ochreous, the apex and hindwing greyish brown with a slight lilac reflection, and a postdiscal and an antemarginal band of dark spots; the uppermost proximal spot is removed far inwards. Sometimes the colour of the hindwing is also mixed a little with red-brown. North America to Brazil. — f. **dido** Plötz is a form from Venezuela, beneath more variegated, tinted ferruginous-red. *accius.*

L. mooreana Dyar is similar to *accius* (187 b), but the ♀ has a white, not transparent spot above the submedian, and a quadrangular one above it. Beneath tinted ochreous, disc of forewing black; on the hindwing there are 5 small, light postdiscal spots in an oblique line, the uppermost being removed inwards. Expanse of wings: 28 to 30 mm. British Guiana. It was bred from larvae on the sugar-plant. *mooreana.*

L. parumpunctata H.-Schäff. (187 c) is much larger, the ♂ only with minute subapical dots above and one postdiscal dot at most. Beneath the hindwing is more variegated, in the costal-marginal half cerise, mixed with ferruginous-brown and lilac, with a postdiscal band, the antemarginal band being absent. Venezuela, Brazil. *parumpunctata.*

L. leptosema Mab. Blackish-brown, fringes dark grey; the stigma is distally brightened up by yellow. Beneath more reddish, in the proximal half of the forewing blackish, in the middle yellowish-grey, the broadest between the median veins. Expanse of wings: 36 mm. Rio Grande. *leptosema.*

L. lochius Plötz (= *bipunctata* Mab., *asella* H.-Schäff.) (187 c) very much resembles *parumpunctata*; above only with 3 white subapical dots, fringes yellowish-grey. Beneath much darker and less variegated, without any red and ferruginous yellow tints, similarly coloured and marked as *accius*. Venezuela. *lochius.*

L. peneia G. & S. (187 c) differs from *accius* by 2 small ochreous-yellow spots behind the stigma; the stigma itself is narrower. Panama. *peneia.*

L. coyana Schs. (187 d). Dark brown, with a faint green reflection towards the base; stigma dark grey; on the forewing with a small postdiscal and a minute subapical spot. Beneath reddish-brown, towards *coyana.*

the base below the costal margin of the forewing blackish, anal angle greyish-brown. Hindwing with 2 small whitish spots behind the lower cell-angle and a subapical one. Expanse of wings: 33 mm. Petropolis.

stacura. **L. stacura** Schs. Above brown with a dark marginal line and lighter fringes, forewing basally at the proximal margin haired olive. The under surface is brown, at the costal margin, apex and distal margin of the forewing olive brown, the proximal margin and anal angle yellowish-white. Hindwing olive-brown with darker markings: a short, proximal transverse line and spot, an irregular median row of small spots, a broad shade from the apex to the cell-end and towards the proximal margin, and some diffuse patches before the distal margin. The ♀ forewing shows 2 postdiscal and 3 subapical white spots, the under surface is strewn with a more greenish yellow. Expanse of wings: 33 to 34 mm. Petropolis.

postpuncta. **L. postpuncta** sp. nov. (187 c). Above dark brown, strewn with yellowish, 2 postdiscal small spots and one in the lower cell-angle, as well as a subapical dot are yellowish-white, 4 small spots behind the cell of the hindwing are more ferruginous-yellow. Fringes lighter, distally almost whitish. Beneath the costal margin of the forewing and the apex as well as the hindwings are light reddish-brown; the lower half of the forewing blackish; the spots of the hindwing are more indistinct than above, the fringes not lighter than the ground of the wings. From the Rio Songo (Bolivia).

exclamationis. **L. exclamationis** Mab. is above jet-black with a brownish-red reflection in the disc, on the forewing with 3 minute apical dots and 2 yellowish-white spots between the median veins, which are linear like fragments of an oblique stripe distally appressed to the jet-black scent-spot. Hindwing without spots, with blackish fringes. Beneath as above, at the proximal margin of the forewing paler; hindwing black with 4 light dots in a semi-circle. Bolivia.

subgrisea. **L. subgrisea** Mab. It is doubtful whether this species and the preceding belong at any rate to this genus. Olive-brown with a yellowish reflection. Forewing with 3 very small apical dots and 2 small, yellowish, blurred spots between the median veins; the scent-stripe is faint; the costal margin is darker than the rest of the wing, the fringes light ash-grey. Forewing beneath grey, in the proximal half as far as the spots blackish, at the costal margin grey, the inner-marginal area yellowish-grey. Hindwing grey with a reddish shine and strewn with black, especially at the costal margin; proximal margin grey, haired reddish-yellow; occasionally there appear 3 or 4 small grey spots behind the cell. Bolivia.

mulla. **L. mulla** Plötz (187 d). Above blackish-brown, the scent-stripe distally with a slight silvery grey reflection, behind its upper end there is a minute, white postdiscal dot, subapically 2 or 3. Hindwing without markings, with lighter, somewhat yellowish fringes. Beneath the forewing is lighter brown at the costal margin, apex and distal margin, in the disc there are 2 white dots. Hindwing brownish-grey, behind the lower cell-angle in an oblique row with 3 or 4 small light dots. Described from Surinam.

elgina. **L. elgina** Schs. Above dark brown, with a small postdiscal spot behind the lower cell-end and a subapical one. Beneath the forewing is dusted reddish-brown at the costal margin and apex. Hindwing dark reddish-brown with a small yellow spot at the lower cell-angle and a subapical one. Expanse of wings: 37 mm. Novo Friburgo.

hypozonea. **L. hypozonea** Dyar (187 d) is bronze-black, forewing with a series of small yellowish spots, one being submedian, a larger quadrangular one between the median veins, 2 small ones behind the cell, removed farther distally, and 3 subapical ones. Disc of hindwing haired yellowish. Beneath dusted whitish, especially the hindwing, except the apex, with a broad, whitish, bent median band. Mexico (Guerrero).

miqua. **L. miqua** Dyar is allied to *lochius* (187 c), but whereas in the latter the bands of the hindwing beneath are parallel and oblique to the costal margin, here the proximal one is rectangularly flawed to the costa, the distal one being so much bent that it also touches the costal margin in a right angle. Peru (San Miguel).

amblyspila. **L. amblyspila** Mab. Upper surface dark brown with a yellowish reflection in the marginal area; forewing with 3 indistinct yellow subapical dots; behind the cell there are 2 more dots being more distinct and not transparent; stigma jet-black, fringes yellowish-grey. Hindwing blackish with a small yellow dot behind the lower cell-angle. Beneath blackish, in the middle of the proximal margin grey, in the middle of the distal margin black; the spots are purer white, the middle one longer. Hindwing greyish-brown with a lighter curved band dying away behind the cell; proximal margin lighter. Bolivia.

crassinota. **L. crassinota** Mab. is similar, but much larger; wings above olive brown with a yellowish lustre in the disc, with 3 small yellowish subapical dots and a larger spot behind the lower cell-angle; the scent-scale stripe, distally reflecting yellowish, is very distinctly bipartite by the lower median vein; fringes ashy-white. Hindwing yellowish with a lighter part behind the cell. Forewing beneath light reddish or reddish-grey, in the basal part blackish as far as the discal spot which is here more distinct; below it another spot. Hindwing reddish-grey with a postdiscal lighter band; at the margin there is a black line with small spots at the ends of the veins. Bolivia.

loammi. **L. loammi** Whitn. (= *regulus* Edw.). Above lustrous dark brown, fringes lighter; forewing with 3 quadrangular, small, subcostal spots, a larger postdiscal one below the cell, and a strigiform one below it. Beneath dark chestnut-coloured, apex of forewing and border of hindwing dusted pearl-coloured grey, spots as above, with 2 more between them; hindwing with subbasal and antemarginal, irregularly bent rows of white spots, bordered with black. The ♀ is somewhat lighter, the spots increased. Florida (Jacksonville), taken in March.

horus. **L. horus** Edw. is above uniformly brown, in the disc of the forewing somewhat lighter. Beneath brown, on the forewing with 2 or 3 small whitish subapical dots and postdiscal patches indicated by white scales. Texas.

L. lunus *Edw.* Forewing above dark brown with 3 semi-transparent, small subapical spots, a large, *lunus*. hour-glass shaped cellular spot, and 2 postdiscal ones, the upper one being streak-shaped, the lower one large quadrangular. Beneath dark brown, apex of forewing densely dusted with grey with the spots of the upper surface. Hindwing only little dusted with grey, with 2 blackish spots in the middle, in the distal one there is a fine white streak. The ♀ has somewhat larger spots and one more postdiscally. Arizona.

L. deva *Edw.* is very similar, the spots are smaller, beneath greyer, on the hindwing only one dark *deva*. spot without the white streak, fringes of the hindwing white, in *lunus* yellow. California, Arizona.

L. altama *Schs.* has only the upper part of the scent-stripe at the rise of the upper median vein, the *altama*. position being therefore only provisional here. Above dark brown, beneath bluish-grey, on the forewing with a small white stripe in the cell; from the posterior half of the cell a black shade extends between the median veins to the proximal angle, proximal margin whitish. Hindwing along the proximal margin lilac. The ♀ is lighter brown with a postdiscal band of white hyaline spots. Beneath more bluish, the inner-marginal stripe of the hindwing more reddish. Expanse of wings: 34 to 40 mm. Castro Paraná.

140. Genus: **Moeris** *G. & S.*

Distinguished from the preceding genus by a somewhat stunted apex of the forewing and the velvety black ♂ stigma not proceeding from the upper, but from the lower median vein, being otherwise shaped just like in *Lerema*.

M. striga *Hbn.* (187 d). Blackish-brown, at the costal margin of the forewing in the basal half scaled *striga*. ochreous-yellow. Beneath lighter, costa of forewing and apex broadly ochreous-yellow, marked chestnut-brown; hindwing marbled chestnut-brown, the costal margin towards the apex mixed with ochreous. In some specimens there are about 3 small subapical dots, 3 small postdiscal spots, and occasionally also a cellular spot. From Mexico to Argentina.

M. hyagnis *G. & S.* is above blackish-brown; beneath the forewing is lighter towards the anal angle, *hyagnis*. with a minute subapical dot. Hindwing with a whitish cell-end dot. Abdomen beneath whitish. It is also very much like *Mnasicles hicetaon* (p. 985), but the stigma is broader, the last joint of the palp shorter and obtuser. Mexico.

141. Genus: **Metron** *G. & S.*

Costal margin of forewing at the base somewhat convex. Veins little different, the middle radial at its rise near the lower. Middle tibiae with long spines. The ♂ exhibits a little visible stigma of 2 parts: a long stripe being situate on the median between the branches and being widened at its proximal end, a short stripe below it and a third still shorter one in the middle of the submedian.

M. chrysogaster *Btlr.* (= *fasciata* *Mschlr.*, *goza* *Hew.*, *cuneata* *Plötz*) (187 d). Blackish-brown with a *chryso-gaster*. golden yellow costal margin, 3 ochreous-yellow subapical dots which may also be absent, and 3 postdiscal spots. Disc of the hindwing indistinctly ochreous-yellow. Beneath the forewing is lighter, the spots are whiter and larger, the costal margin and apex tinted olive-yellow. The hindwing shows a straight, broad, whitish band from the costal margin to the proximal margin. Anal angle broad blackish-brown, otherwise olive. Abdomen beneath golden yellow. Mexico to the Amazon and Trinidad.

M. hypodesma *Plötz* (187 e) is very closely allied to the preceding and differs by its somewhat larger *hypodesma*. size and 4 postdiscal spots running in an oblique direction to the apex; the submedian one is small, that above it is the largest and quadrangular; another, subapical, small spot; in the ♂ the spots are more yellowish, in the ♀ white. Hindwing without spots. Beneath like *chrysogaster* except the increased spots, but the abdomen is brownish and not yellow. From Rio de Janeiro and Pará.

M. fascia *sp. nov.* (187 d). Above blackish-brown, on the forewing with a white subapical dot, 2 *fascia*. very small postdiscal spots and an ochreous-yellow submedian streak. Beneath somewhat duller brown, the forewing marked as above; the hindwing shows a very broad, silvery white, greenish iridescent discal band separated from the similarly coloured proximal margin by a black wedge-shaped spot; it is just as broad as the distal margin in its middle. Colombia (Rio Aguaca Valley) in the Coll. FASSL.

142. Genus: **Metrocles** *G. & S.*

Distinguished from *Metron* by the middle tibiae not being spined and an entirely different stigma; a broad, bent, interrupted scent-scale stripe extends from the rise of the lower median vein to the middle of the submedian.

M. leucogaster *G. & S.* (187 d, e) is very much like *Metron chrysogaster*, but the spots of the forewing *leucogaster*. are white, the stigma is quite different, and placed more like in *Lerema* and *Moeris*. The hindwing shows beneath a white band bordered with yellow. Abdomen beneath white bordered with yellowish. Panama.

M. hypochlora *sp. nov.* (187 e) is allied to the following. Above blackish-brown with a narrow ochreous- *hypochlora*. yellow band parted by the veins, and 2 subapical dots; hindwings uni-coloured. Beneath the forewing is blackish,

at the apex like the hindwing leek-green, the spots more whitish than above, the lowest very much widened towards the anal angle. The hindwing shows an almost straight, silvery white band, along the proximal margin a blackish, wedge-shaped spot. According to a ♂ of the Coll. FASSL from South Peru (Madre de dios).

zimra. **M. zimra** Hew. It is doubtful whether this species and the following belong hereto. Above red-brown with a postdiscal oblique band of 4 hyaline spots and 2 small subapical spots. Hindwing close behind the middle with an angular ochreous-yellow band; fringes light yellow. Beneath tinted green, marked as above, both wings with a submarginal band of ochreous-yellow spots, the hindwing besides with a yellow basal spot, the light yellow discal band is much broader and extends from the costal margin to the inner-marginal vein. Expanse of wings: $\frac{1}{4}$ inch. Brazil.

oropa. **M. oropa** Hew. (= *angulina* Plötz, *fasciata* Mschlr.) (187f) approaches the preceding, but on the forewing it exhibits a coherent, orange band from the costal margin to the middle of the proximal margin, on the hindwing also above an orange basal spot beside the discal band. Beneath the same, but the bands are almost white, the apex of the forewing is tinted green, the hindwing is green and the band extends farther towards the anal angle. The basal spot is situate less closely at the base than in *zimra*. Expanse of wings: $1\frac{1}{6}$ inch. Brazil.

verdanta. **M. verdanta** Weeks seems to belong hereto, if it is not synonymous to the preceding. Above dark brown, towards the base strewn somewhat tan-coloured, with 3 small subapical spots, below them removed farther towards the margin are 2 small and below them 3 large postdiscal spots, all of them reddish yellowish-brown. Hindwing dark brown with a broad tan-coloured band from the apex to the middle of the proximal margin. Beneath the wings are tan-coloured, at the costal margin and apex of the forewing and on the hindwing covered with green; the band of the hindwing is purely white. Expanse of wings: 1.15 inch. Venezuela (Suapure).

caligula. **M. caligula** Schs. may be provisionally inserted here. Above dark brown with lighter fringes and a fine scent-stripe at the transverse vein and a round scent-scale stripe between the lower median vein and cell. Beneath olive-brown, on the forewing with a darker cell-end streak; cell and base darkened, the apical half of the proximal margin light yellowish. Hindwing with a broad, white band from the apex to the proximal margin above the anal angle, shortly before the proximal margin interrupted by a light olive-brown stripe along the fold. Expanse of wings: 33 mm. Novo Friburgo.

143. Genus: **Papias** G. & S.

Distinguished from the preceding genera by the hindwing being somewhat prolonged at the anal angle; besides the ♂ is without the scent-organ.

integra. **P. integra** Mab. (187 e) is above deep blackish-brown, the under surface somewhat lighter, blackish-brown, towards the margin lighter, especially at the anal angle of the forewing. The band is dirty grey; the eyes are surrounded by a dark reddish-yellow colour. Mexico to Brazil.

dictys. **P. dictys** G. & S. (187 c) is smaller, beneath more reddish, mostly with a small, white subapical dot; on the hindwing beneath there are 3 small postdiscal dots. Mexico to Panama.

hycsos. **P. hycsos** Mab. Silky black with a ferruginous reflection in the disc, in it a small, diaphanous dot, above it a small one not transparent; 2 small, postdiscal, oblique spots, the lower twice as long; as far as the spots the proximal part of the wing is darker; fringes ferruginous yellow. Beneath the wing is deep blackish-brown, the forewing with a metallic violet reflection, the hindwing with a blue lustre or entirely violettish-blue. Expanse of wings: 28 mm. Colombia.

microsema. **P. microsema** G. & S. (= *phaeomelas* Hbn.) (187 e) is above the same; beneath more reddish, the anal angle of the forewing is much lighter, more extensive; on the forewing there are 2 postdiscal dots and a subapical one; on the hindwing beneath 4 whitish dots in a bent row. Mexico, Costa Rica, Panama, Brazil, Trinidad.

phainis. **P. phainis** G. & S. is the same, but beneath without any spots with differently shaped genitals. Mexico, Guatemala, Costa Rica.

rubida. **P. rubida** Plötz (187 e). Above blackish-brown, on the body and bases of the wings with a very faint greenish reflection. Beneath somewhat duller brown, apex of the forewing and the whole hindwing deep chestnut-coloured, with distinct black veins. From the somewhat similar *Eutychide umber* it differs by the black anal part of the forewing beneath and the absence of the cellular spot. Brazil.

derasa. **P. derasa** Plötz (187 f) is a much larger species, monotonously blackish-brown, with greyish-brown fringes. On the under surface the distal-marginal half of the forewing is lighter brown, towards the dark disc dentately defined. Rio de Janeiro.

subcostulata. **P. subcostulata** H.-Schäff. (187 f) is somewhat smaller than *derasa*, above the same, uni-coloured blackish-brown. Beneath the costal margin and apical half of the forewing and the hindwing is somewhat duller brown, with very fine light yellowish veins. Fringes with a slight ochreous reflection. From Brazil.

caura. **P. caura** Plötz (? = *tristissimus* Schs.) (187 g) is very much like *integra* (187 e); above uni-coloured brownish-black, beneath a little lighter, browner with a broad whitish-grey inner-marginal part of the forewing. From Surinam and Peru.

ctyanus. **P. ctyanus** Schs. Above dark brown, on the vertex and on the palpi haired yellowish. Beneath reddish-brown, the basal half of the forewing blackish; on the hindwing the inner-marginal part is light brown. Expanse of wings: 27 mm. From Trinidad and Novo Friburgo.

P. agassus *Mab.* Forewing jet-black, hindwing black with a very much indented distal margin. Beneath the forewing is black with a violet reflection, in the marginal area bluish-lilac, at the proximal angle lighter ferruginous. Hindwing black, from the cell to the distal margin dark lilac with 4 metallic blue spots behind the cell towards the apex, the 2 lower ones sagittiform, the others strigiform. Expanse of wings: 26 mm. Massauary. *agassus.*

P. bobae *Weeks* is above velvety blackish-brown with an indistinct darker band, hindwing at the costal margin somewhat lighter. Beneath somewhat lighter, thereby the dark bands become somewhat more distinct; inner-marginal part very light. Hindwing as above. Expanse of wings: 27 mm. Venezuela (Suapure). *bobae.*

P. leucopogon *Plötz* (187 f) has above on the base of the wing and on the body a faint greenish reflection. Beneath lighter brown, on the forewing two basal thirds are darkened, the distal third is lighter, with 3 small light subapical spots. Hindwing with a darkened base and a dark semi-transverse band from the middle of the costal margin to below the cell, behind it projecting somewhat towards the margin. Venezuela (Laguayra). *leucopogon.*

P. corisana *Plötz* (187 g) is above uni-coloured black; beneath lighter, more brownish, especially on the forewing analwards; here there are in the disc 2 whitish punctiform spots and above them 3 subapical ones. Hindwing likewise uni-coloured without markings, only at the proximal margin somewhat lighter. From Surinam. *corisana.*

P. sobrinus *Schs.* Above dark brown, fringes blackish, distally grey. Beneath dark brown, the forewing is lighter, with a postdiscal bent row of very small grey spots; the hindwing shows a postdiscal row of dark ochreous-yellow spots. Expanse of wings: 27 mm. Rio de Janeiro. *sobrinus.*

144. Genus: **Mnasinous** *G. & S.*

Antennae longer than half the costal margin, body slender. Middle tibiae bare. The ♂ shows a tripartite stigma which is rather inconspicuous: a faint scent-stripe along the median between the two veins, a shorter one below it and a longer one on the submedian.

M. patage *G. & S.* (187 g) is above monotonously blackish-brown, beneath somewhat lighter, the forewing at the proximal margin and anal angle still lighter; costal margin, apex and hindwing are dusted dark red. From Mexico and Panama. *patage.*

145. Genus: **Metiscus** *G. & S.*

Different from the preceding by the ♂ scent-organ: from the rise of the upper median vein a bent scent-scale stripe runs obliquely to the rise of the lower branch, below it there is a short stripe.

M. atheas *G. & S.* (? = *infuscata* *Plötz*?) (187 f). Above uni-coloured blackish-brown, the narrow bent stigma equally coloured. Beneath as above, only the forewing at the anal angle lighter, fringes grey. Mexico to the Amazon, Trinidad. *atheas.*

146. Genus: **Methion** *G. & S.*

Costal margin somewhat more convex than in the allied genera; middle tibiae bare; the ♂ is without a scent-scale stripe. The distal margin of the abdominal fold is long-haired.

M. melas *G. & S.* is monotonously blackish-brown, beneath somewhat more reddish, at the proximal margin and anal angle of the forewing lighter. Palpi intermixed with golden yellow hair. From Guatemala. *melas.*

147. Genus: **Thargella** *G. & S.*

The antennae are $\frac{2}{3}$ of the length of the costal margin; forewing short and broad with a very convex costal margin. Stigma absent. The proximal margin of the abdominal fold is long-haired.

Th. fuliginosa *G. & S.* Above blackish-brown, beneath red-brown, the forewing analwards lighter. Palpi golden yellow. Nicaragua to Colombia, British Guiana and the Amazon. *fuliginosa.*

148. Genus: **Mnasitheus** *G. & S.*

Antennae half as long as the costal margin; costal margin of forewing slightly bent. Middle tibiae bare, a stigma is only present in *cephis*: a short stripe above the lower median vein, a longer one below it and a still longer one on the submedian.

M. cephis *G. & S.* Above uni-coloured blackish-brown, beneath with a somewhat purple tint. Smaller than the very similar *Mnasalcas uniformis* with a different stigma. Distinguished from the following species by a longer terminal joint of the palp and different genitals. Mexico to Guatemala. *cephis.*

- simplicissimus.* **M. simplicissimus** H.-Schäff. (= *nigritulus* Mab., *insignis* Plötz, *facilis* Plötz) (187 k) is the same, but without a stigma, with shorter palpi beneath mixed with golden yellow. Fringes dark grey. South America, widely distributed as far as Trinidad.
- lurida.* **M. lurida** H.-Schäff. (187 g). Above monotonously blackish-brown. Beneath the costal-marginal part of the forewing is somewhat reddish, the distal margin of both wings is brightened up by a somewhat duller brown. Basal part and disc of the hindwing dark red-brown, at the costal margin extended to the apex. Described from Brazil.
- chrysophrys.* **M. chrysophrys** Mab. is likewise very closely allied, but it has somewhat longer antennae, bright yellow fringes, and an indistinct, bipartite stigma. Expanse of wings: 21 mm. Colombia.

149. Genus: **Mnasaleas** G. & S.

Antennae of $\frac{2}{3}$ the length of the costal margin, club stout with a long apex. The ♂ shows a tripartite stigma: a scent-stripe on the median between both veins, a short one below it, and a triangular part in the middle of the submedian.

- uniformis.* **M. uniformis** Btlr. Monotonously blackish-brown, beneath somewhat browner, with a lighter proximal margin of the forewing. Palpi haired blackish-brown. Costa Rica; Trinidad.
- amatala.* **M. amatala** Schs. Above dark brown, also at the base of the hindwing with an oblique scent-scale spot. Beneath likewise brown. Costal margin of forewing for two thirds, cell and basal half of the proximal margin darker, distally to it a row of indistinct, lighter spots. Hindwing dark violettish-brown in the basal 2 thirds, with some small postdiscal, indistinct, light spots. Expanse of wings: 31 mm. Novo Friburgo.
- circellata.* **M. circellata** Plötz (187 h) according to the figure by the shape of the scent-organ belongs hereto and is perhaps to be combined with *amatala*. Above blackish-brown, fringes somewhat ochreous-brownish. Beneath browner, basally darkened, on the fore- and hindwings with some small, postdiscal, light indistinct spots, the hindwing also shows a cellular dot. Brazil.

150. Genus: **Mastor** G. & S.

Antennae half as long as the costal margin. Costal margin of forewing at the base convex. Middle tibiae spined. The ♂ has an oblique scent-stripe from the rise of the upper median vein to the middle of the submedian (the stigma is absent in *M. perigenes*).

- anubis.* **M. anubis** G. & S. (= *perloides* Plötz) (187 g). Blackish-brown with a stigma of the same colour; beneath the same, palpi intermixed with golden yellow hair; the base of the antennal club beneath and distally ochreous-yellow; sometimes there is on the hindwing beneath a postdiscal row of ochreous-yellow dots. Mexico.
- bellus.* **M. bellus** Edw. (187 h) is easily discernible by the ochreous-yellow fringes of the wings. Arizona, Mexico in May. — *phylace* Edw. (187 g), according to recent reports, seems to be a second stock of *bellus*. It differs by the head and collar being golden yellow, the fringes, however, dirty grey. In this case *phylace* (187 h) would have to be the name of the species, and *bellus* its first form of generation. From Colorado, Arizona and New Mexico in July.
- perla.* **M. perla** Plötz (187 g) is larger, above blackish-brown, with ash-grey fringes and similar hairing of the body. Beneath on the forewing somewhat lighter, the hindwing ash-coloured, with fine darker veins, a whitish cellular spot and 4 small postdiscal dots in the apical half. Rio de Janeiro.
- perigenes.* **M. perigenes** G. & S. (187 g) is easily recognizable by the absence of the stigma and the hindwing beneath being peculiarly radiantly striped brownish and whitish. Mexico.

151. Genus: **Mnasilus** G. & S.

Distinguished from the allied genera by a hair-pencil on the forewing above below the submedian. Middle tibiae spined; stigma absent.

- penicillatus.* **Mn. penicillatus** G. & S. (= *zalma* Plötz) (187 h) somewhat resembles above *Metron chrysogaster* (187 d), but the ochreous spots form a complete oblique row as far as below the apex. Beneath somewhat lighter; hindwing with 5 lighter dots in a bent row. Mexico to the Amazon and Brazil.
- sucova.* **Mn. sucova** Schs. has the hair-pencil below the base of the median and may therefore be best inserted here. Above blackish-brown, fringes lighter, forewing with a somewhat darker shade at the cell-end. Beneath the forewing is blackish at the base, violettish-brown at the apex and costal margin; a small whitish hair-spot behind the lower cell-end. Hindwing violettish-brown with a bent row of small grey diffuse patches behind the cell. Expanse of wings: 29 mm. Petropolis.

152. Genus: **Vehilius** G. & S.

Antennae somewhat longer than half the costal margin. Otherwise the same as the following genus *Megistias* from which it differs by a different structure of the ♂ genitals. Middle tibiae with very long spines.

V. illudens Mab. (187 h). Blackish-brown, 2 postdiscal spots and 2 or 3 subapical dots are ochreous-yellowish. Disc of the hindwing dark reddish-yellow. Under surface lighter, the subapical and radial veins as far as the distal margin dirty ochreous-yellow, of the same colour are the veins on the hindwing; disc, base and distal margin are darker. Mexico to Colombia.

V. venosus Plötz (187 h) resembles *illudens*, but on the forewing it has a cellular and a submedian spot besides. Hindwing with a band of distinct spots. Beneath with distinct light yellow veins, between the veins there are yellowish antemarginal dots. Mexico to Brazil, Trinidad.

V. norma Dyar. Dark brown, costa of forewing and proximal margin in the basal half strewn with reddish-yellow, with 2 postdiscal, reddish-yellow dots and 2 more small subapical ones. Hindwing in the disc reddish-yellow. Beneath somewhat lighter, with reddish-yellow veins, on the hindwing with a postdiscal row of 4 reddish-yellow dots. Expanse of wings: 36 mm. British Guiana. It was bred from larvae living on water-plant (*Paspalum gracile*).

V. sacchariphila Dyar resembles *norma* above, but without any reddish-yellow at the costal and proximal margins of the forewing. Beneath the hindwing is light greyish-brown with 2 irregularly brown, black, bent lines in and behind the middle. Expanse of wings: 25 mm. British Guiana, bred on sugar-cane.

V. almoneus Schs. Above brown with a yellow cellular spot and a postdiscal row of spots. Hindwing like disc with a row of oblong, yellow postdiscal spots. Beneath brown, with light yellow veins, the spots of the hindwing more numerous than above and light yellow. Expanse of wings: 24 mm. Peru.

V. subplanus Kaye. Above deep dark brown with a yellowish spot behind the cell of the forewing and one below it farther towards the base. Beneath the same, the veins faintly lighter. The hindwing are still somewhat lighter, the veins scarcely lighter. Expanse of wings: 26 mm. Trinidad.

V. seriatus Mab. Black, with a reddish-yellow reflection. Forewing with 7 small, yellowish-white dots, below the margin rounded, then oblique; in the middle of the cell near the costal margin a dot, at the costal margin itself 2 similar streaks, fringes lighter. Forewing beneath blackish with the same dots, on the veins at the apex 5 or 6 yellow dots; the veins of the hindwing are striped light yellow, the anal part is strewn with yellow, with 2 indistinct yellow stripes; the cell is closed by a yellow streak; 6 small, postdiscal, yellow streak-shaped spots. Expanse of wings: 18 mm. Valera.

V. scheria Plötz (187 h) is a larger species the position of which is questionable. Above black. Beneath towards the margin on the forewing and almost on the whole hindwing steel-blue with fine white postdiscal and subapical dots. The submedian anal area of the forewing is very light, almost white. Brazil (Pará).

V. carasta Schs. Above brown, on the forewing postdiscally with a bent row of small yellow spots. Beneath brown, tinted violet, costa of forewing basally yellow, 2 yellow cellular spots, the postdiscal spots more distinct; on the margin there is a yellow line, between the veins distally convex and proximally connected with yellow streaks; the same line and internerval streaks also on the hindwing; proximal margin broad dark grey, strewn with yellow; in the cell and above it one yellow spot each as well as a postdiscal row. Expanse of wings: 24 mm. Petropolis.

V. chinta Schs. Dark brown with reddish-grey fringes. Forewing with small, yellowish-grey, indistinct spots, 3 postdiscal ones and 3 subapical ones. Hindwing haired lighter brown. Beneath brown with lighter veins; on the forewing the costal spots are lilac, the anal angle light. The hindwing shows an undulate, lilac postdiscal band not reaching to the broad, light brown inner-marginal part. Expanse of wings: 22 mm. Petropolis.

153. Genus: **Megistias** G. & S.

Antennae half as long as the costal margin; otherwise only distinguished from *Vehilius* by the different structure of the ♂ genitals.

M. tripunctatus Latr. (= *obsoleta* Mschlr.) (187 i) is above blackish-brown with faded, light spots, 2 postdiscal ones and 3 subapical ones. Beneath lighter, at the distal margin with a narrow dark line. Hindwing strewn with grey, in the disc with a row of blackish-brown spots, which is irregularly curved. Mexico to Brazil.

M. jera G. & S. (187 i) resembles *isus*, but it has a less pointed apex of the forewing, more indistinct spots and differently built genitals. Mexico (Guerrero).

M. labdacus G. & S. (187 i) looks above like *tripunctatus*. Beneath lighter, the hindwing strewn with grey, with a bent row of grey spots towards the costal angle. Mexico to Costa Rica and Venezuela, as well as Trinidad.

M. oebasus G. & S. is above monotonously blackish-brown, beneath the same, but somewhat lighter, the costal margin, apex, and the apex of the hindwing are marbled purple grey; fringes light, a little dark-speckled. Costa Rica.

M. edata Plötz (= *isus* G. & S.) (187 i). Above dark brown, with 3 small, white subapical dots and a postdiscal one behind the lower cell-angle. Beneath the hindwing as well as the anal part of the forewing are somewhat lighter violettish-grey, with a broad, straight, greyish-brown nebulous band from the costal angle of the hindwing to the middle of the proximal margin. Mexico to Guiana.

- catocala*. **M. catocala** H.-Schüff. (178 i) is larger, the ♀ shows 3 postdiscal spots, the submedian spot of which is yellowish, 3 subapical white dots and below them farther towards the margin 2 more small ones; fringes yellowish, speckled darker. Beneath the hindwing is violettish-grey with irregular darker macular bands at the base, in the disc and before the margin, the latter being deposited above the cell. Patria unknown. PLOETZ's figure entirely resembles that of *Halotus saxula* (= angellus, 183 c).
- theogenis*. **M. theogenis** Cap. (187 i) entirely resembles *tripunctatus* above, blackish-brown with 3 small, white subapical and 2 postdiscal spots. Beneath much lighter brownish-grey, in the disc of the forewing blackish, in the submedian area lighter whitish. Hindwing with whitish dots in the cell and behind it in a bent row.
- tripunctus*. **M. tripunctus** H.-Schüff. (= ancus Mschr., ? conta Plötz?) (187 k) is above somewhat like *theogenis*, but it has only two subapical dots and besides another small yellowish submedian spot; fringes of hindwing somewhat yellowish. Beneath likewise allied to the preceding, on the hindwing with a blurred cellular spot and a lighter grey postdiscal band. South America, Cuba.
- uruba*. **M. uruba** Plötz (187 k). Above brownish-black with entirely extinct, small subapical spots, below them 2 spots removed more towards the margin, and 2 postdiscal spots. Beneath of a somewhat lighter and brownish tint, on the forewing with larger spots, the anal part broadly lighter grey. The hindwing is broadly hued purple-brown at the costal margin, in the larger anal half violettish-grey with 2 bands of purple-brown spots obliquely extending from the apex to the proximal margin and not crossing the inner-marginal fold. Brazil.
- fraus*. **M. fraus** G. & S. (187 i). Lustrous blackish-brown, with 3 white hyaline subapical dots. Beneath lighter, the forewing marbled darker, with a quadrangular, blackish-brown subapical macula. Hindwing with 3 dark bands. Mexico, Guatemala, Honduras.
- telata*. **M. telata** H.-Schüff. (= tyrtaeus Plötz) (187 i). Above like *fraus*, but besides with 2 postdiscal spots and 2 often indistinct, dirty white, small spots in the middle of the costal margin. Beneath blackish-brown, the spots larger, the costal margin ferruginous-brown, the distal margin grey. Hindwing ferruginous-brown with 2 irregular bands from the proximal margin to the costal margin and apex. Mexico to Venezuela and Guiana.
- corticea*. **M. corticea** Plötz (= epiberus Mab.) (187 k). Above blackish-brown with an oblique row of ochreous-yellow spots; hindwing almost entirely scaled and haired ochreous-yellow. Beneath ferruginous-brown or ochreous-yellow, forewing in the proximal half blackish with 2 yellow discal spots. Mexico to Brazil and Trinidad.
- noctis*. — f. **noctis** Plötz is above and especially beneath very much darkened. From the Chiriqui. — f. **lysias** Plötz
lysias. is a transition to it from Venezuela.
- leucone*. **M. leucone** G. & S. (187 k) is similar, somewhat smaller, the forewing with only 2 postdiscal spots and 2 subapical ones; hindwing less ochreous-yellow. Beneath likewise darker. Guatemala.
- corius*. **M. corius** Schs. (187 k). Dark brown, fringes distally grey; the forewing shows small postdiscal accumulations of minute yellow scales between the veins. Beneath the forewing is black, at the costal margin and apex strewn somewhat ochreous, with a whitish subapical band. Hindwing lilac-grey, strewn with whitish, in the basal half of the costal margin and a broad shade from the middle of the proximal margin to the apex dark brown, strewn with ochreous. Allied with *telata*. Expanse of wings: 21 mm. Castro (Paraná).
- xantho*. **M. xantho** Schs. (189 h). The blackish-brown forewing shows a yellowish-brown costal-marginal stripe in the basal half and a similar one above the inner-marginal vein and small postdiscal spots scaled yellowish, the hindwing exhibiting a similar postdiscal shade. The light brown fringes are more or less spotted black. Beneath the veins in the costal-marginal and distal-marginal half are striped yellowish, the spots similar as above. Hindwing more lilac-grey, with yellowish veins, with a bent, dark discal band and large marginal spots. Costa Rica (Juan Vinas).
- ranesus*. **M. ranesus** Schs. Above plain dark brown, with lighter fringes. Forewing beneath dark brown, at the proximal margin lighter, at the distal margin and apex strewn with lilac, at the base of the costal margin and before the apex mixed somewhat with ochreous. Hindwing in the costal half reddish-brown with an ochreous-red basal spot, in the distal half brown, strewn with lilac; lilac scales towards the base below the cell. Expanse of wings: 20 to 24 mm. Castro (Paraná).
- polistion*. **M. polistion** Schs. Dark brown, fringes reddish-grey. Forewing with 2 small, whitish postdiscal spots, at the base of the costal margin scaled olive; subapically and above the middle of the submedian accumulations of yellowish scales. Beneath light olive-brown, disc of forewing blackish, with a postdiscal row of small yellow-reddish spots and a similar cellular spot. Expanse of wings: 27 mm. Petropolis.
- erythrosticta*. **M. erythrosticta** Plötz (187 k). Above purple-brown with a small cellular spot and 2 small postdiscal spots, and a subapical dot; fringes grey, speckled darker. Beneath lilac-grey, disc of forewing darkened with purple. Hindwing lilac-grey, strewn with ash-grey, with indistinct purple macular bands in the middle and before the distal margin, as well as a darkened base. Rio de Janeiro.
- servilius*. **M. servilius** Plötz (187 k). It is questionable whether the species is correctly placed here. Above black with 2 white postdiscal spots and a small submedian one. Beneath light brown, with finely darker veins and a whitish stripe along the lower median vein of the hindwing. From Surinam.

M. fimbriata Plötz (187 f). Its position here is just as questionable. Easily recognizable by its orange-red head and palpi, and orange fringes. It is much larger than *Mastor bellus* (187 h) and is easily discernible from it by the absence of the stigma and the entirely red head. Mexico. *fimbriata*

M. monestes Schs. (188 a). On the dark brown forewing there is a very indistinct postdiscal row of small, greyish-brown spots. Beneath dark grey with blackish-brown markings: 2 oblong spots behind the cell and 2 oblong marginal spots analwards and 2 subapical dots. Hindwing with a dark discal shade, the darkest above the cell, traversed by the veins, close behind the cell there is a row of dark spots, behind them a light brown shade; in the brown distal margin there are small, grey antemarginal spots. Expanse of wings: 28 mm. Novo Friburgo. *monestes*.

M. miaba Schs. from an unknown habitat is above dark brown with grey fringes; forewing with 2 minute postdiscal dots and a subapical one. Beneath the forewing is blackish in the cell and at the proximal margin, the costal margin, apex and distal margin is light brown with yellowish veins, beside the small spots of the upper surface with a light anal-angular spot; the light brown hindwing has yellow veins with a white dot at the cell-end, and a series of white dots behind it. Expanse of wings: 29 mm. *miaba*.

M. distigma Plötz (= *chula* Schs.) (188 a) is above brown with grey fringes and greenish tinted veins, with 2 white, hyaline postdiscal spots and a yellow one above the middle of the submedian. Hindwing at the costal margin dusted with violet. Beneath dark brown, at the costal margin reddish-brown, the distal margin lilac, the spots as above. Hindwing lilac-grey, at the costal margin broad violet, at the proximal margin reddish-grey with a round white spot at the cell-end and a bent row of indistinct, small, whitish postdiscal spots. Expanse of wings: 27 mm. Petropolis. *distigma*.

M. vanilia Schs. Above uni-coloured dark brown. Beneath light violettish-brown, at the costal margin greenish and at the proximal margin broadly greyish-black with a lighter anal-angular spot; a subapical yellow dot. Hindwing at the proximal margin thickly strewn with yellow and a yellow dot at the cell-end and small yellow postdiscal dots. Expanse of wings: 28 mm. Petropolis. *vanilia*.

M. gispara Schs. Dark brown with grey fringes and a postdiscal row of small, indistinct, grey spots; at the costal margin and apex scantily strewn with ochreous; the hindwing is haired somewhat lighter brown. Beneath light brown, dusted ochreous-yellow, at the proximal margin of the forewing broadly blackish, the hindwing with a black dot behind the lower cell-angle and one above it, behind both with a bent lighter patch. Expanse of wings: 29 mm. Petropolis. *gispara*.

M. vorgia Schs. (188 a). Above dark brown with grey fringes with 2 small white hyaline postdiscal spots and 3 minute subapical ones. Beneath the forewing is blackish in the cell and at the proximal margin, at the costal margin, apex and distal margin light reddish-brown; veins and small internerval stripes yellowish. Hindwing reddish-brown, with yellow veins and small, indistinct grey internerval stripes, and 4 small whitish postdiscal spots. Expanse of wings: 28 mm. Castro (Paraná). *vorgia*.

M. chao Mab. belongs hereto. Above coppery yellowish-brown; forewing with 3 blurred, small apical spots and in the disc behind the cell 2 or 3 small transparent spots; fringes dirty yellow. Forewing beneath yellowish with a reddish costal margin; basal half blackish, only the 2 lower spots are visible on the margin of the black. Hindwing yellowish with a greenish lustre. Bolivia. *chao*.

M. xenos Mab. is somewhat smaller than *chao*. Above dark brown; forewing with 3 hardly visible apical dots and 2 minute yellowish dots behind the cell; costal margin along the cell yellow. Hindwing in the middle of the margin light yellowish. Forewing beneath grey with a lilac lustre, in the proximal half dull blackish, the punctiform spots more distinct; in the cell there are grey clouds. Hindwing ash-grey with a reddish or lilac lustre, strewn with white, with white veins; a postdiscal row of small grey scale-spots with a pink lustre. Before the greyish-white fringes there is a black line on both sides bordered with white. Bolivia. *xenos*.

M. sulla Plötz (188 a). Above black with 3 subapical and 3 postdiscal whitish spots. Beneath light grey, in the disc of the forewing black, on the hindwing with some fine black dots in and behind the middle. Colombia. *sulla*.

M. arcas sp. nov. (188 a) is above dark brown with 3 postdiscal and 3 subapical, small, hardly lighter spots on the forewing. Beneath duller brown, on the forewing the small lighter spots are a little more prominent owing to their being slightly surrounded by dark. Hindwing in the basal two thirds a little darker than at the margin, in this marginal area near the margin of the darker discal area there are 4 or 5 small, darker eye-spots. Rio Songo (Bolivia). *arcas*.

M. argus sp. nov. (188 a) beneath somewhat resembles *Cobalus argus* (186 a). Above uni-coloured brown, beneath lighter; behind the cell of the hindwing there are, between the somewhat lighter veins, 5 dark spots distally bordered by somewhat lighter spots; that between the radial veins is the largest and quadrangular, and lies directly behind the lighter transverse vein before which there is yet a blackish transverse streak in the cell. From Matagang (Upper Cauca Valley). *argus*.

M. sancoga Schs. Forewing above dark brown with an oblique dark shade from the lower median vein to the apex. Beneath brown, dusted with ochreous; hindwing with a small brown postcellular dot and a very indistinct brownish postdiscal shade. Expanse of wings: 30 mm. Petropolis. *sancoga*.

- a.* **M. carinna** Schs. Wings dark brown with more reddish fringes. Forewing at the cell-end somewhat darkened. Beneath the forewing is violettish-brown, the distal margin dusted with lilac, with a light brown anal-angular spot; hindwing the same with a bent postdiscal row of small, lilac-white spots. Expanse of wings: 23 mm. Castro (Paraná).
- jamaca.* **M. jamaca** Schs. is above dark brown, basally haired somewhat ochreous, with a small, semi-diaphanous postdiscal spot and 3 small subapical ones. Beneath lighter, only the cell and proximal margin of the forewing darker, hindwing with a postdiscal row of small grey spots. Expanse of wings: 31 mm. Jamaica.
- corescene.* **M. corescene** Schs. Dark brown with 3 subapical and 2 postdiscal small hyaline spots. Beneath brown, forewing at the distal margin lilac, the broadest at the middle radial vein. Hindwing dusted with lilac except the apex and a bent brown discal shade and some small antemarginal spots. Expanse of wings: 24 mm. Castro (Paraná).
- mendica.* **M. mendica** Mab. is above blackish-brown with a reddish lustre in the marginal area of the forewing, the basal half is blackish as far as the cell-end, here bordered by an undulate line and indistinct yellowish clouds. Hindwing in the proximal part somewhat ferruginous-brownish. Beneath reddish-brown, the basal part of the forewing blackish, the small yellowish clouds clearer than 7 small spots. Hindwing reddish-brown with a bent demi-band through the disc. The ♀ is darker, otherwise similar. Bolivia.

154. Genus: **Parphorus** G. u. S.

Distinguished from *Megistias* by its bare middle tibiae, more slender body and a thick stigma in the ♂, extending from the rise of the upper median vein to the submedian, filling up the angle of the base of the lower median vein, and bordered by a stripe of velvety-black scales.

- storax.* **P. storax** Mab. (188 a). Blackish-brown, behind the stigma haired ochreous-yellow in the shape of 3 small spots. Beneath lighter, at the costal margin and apex of the forewing, and on the hindwing with yellow veins. Panama to Colombia, Venezuela and Guiana. Trinidad.

155. Genus: **Vorates** G. & S.

Distinguished from the preceding genus by the different structure of the genitals and the scent-spot of the ♂ consisting in a long scent-scale stripe on the middle of the median and a shorter longitudinal stripe.

- decorus.* **V. decorus** G. & S. (= *tanaquilus* Mschlr.?, *saturnus* F.?) (188 b). Blackish brown, with a darker stigma and 3 ochreous-yellow spots behind and below the cell, and a minute subapical dot. Beneath the same, but the inner-marginal spot is absent; costal margin, subcostal and radial veins as well as the hindwing veined yellow. Mexico to Brazil.
- godmani.* **V. godmani** sp. nov. entirely resembles the preceding, but the stigma is larger, and shaped as in *Phlebodes tiberius* (187 a). South America?
- sapala.* **V. sapala** G. & S. (188 b) is likewise very closely allied, but the stigma is longer and below its upper part there is an oblong hyaline spot. Hindwing above more olive ochreous. Beneath as *decorus*. Panama.
- auristriga.* **V. auristriga** sp. nov. (188 b) is very well distinguished by the very long, narrow, orange stripe below the median with a continuation behind the upper median vein and a sagittiform subapical spot. Hindwing in the disc, as well as the forewing at the costal margin and submedianly with a somewhat ferruginous reflection. Beneath like *decorus*, but with bright orange veins. Described according to 1 ♂ from the Songo (Bolivia) from the Coll. FASSL.
- cotiso.* **V. cotiso** Schs. (189 i). Above dark brown, costal margin as far as the middle olive, striped the same above and below the inner-marginal vein; below the median between the veins striped yellow, a small spot distally above it, with a yellow subcostal dot. Disc of hindwing of a bright brown. Beneath as above, but the veins in the marginal area striped yellow, on the hindwing in their whole length. Costa Rica (San Mateo).

156. Genus: **Pheraeus** G. u. S.

Antennae somewhat longer than in the preceding genera, with a long and fine apex of the club. The ♂ stigma is angular, thick, situate between the middle part of the median and the rise of the lower median vein. Only one species:

- epidius.* **Ph. epidius** Mab. (188 b) is very well distinguished by a long, yellow submedian stripe of the forewing; the hindwing is almost entirely reddish-yellow, with a darker margin. Hindwing beneath in the basal two thirds yellow like the body beneath. Nicaragua, Panama.

157. Genus: **Molo** G. & S.

Apex of forewing more prolonged than in the affinities. Middle tibiae covered with few short spines. The ♂ has no scent-organ.

M. heraea *Hew.* (= *xenarchus* *Mab.*) (188 b) is above blackish-brown, in the basal half of the costal margin and in the cell, on two thirds of the proximal margin, in 4 postdiscal spots growing smaller towards the apex, and a bipartite subapical spot lustrous orange. Hindwing orange, the costal margin broad, the proximal margin narrow, and a shortened basal line below the cell blackish-brown. Beneath yellow, marked red-brown, forewing with an irregular median band from the base to the apex; proximal margin and anal angle are blackish, the hindwing at the proximal margin blackish-brown. Panama to Guiana and the Amazon District. In fresh specimens the hindwing is iridescent. *heraea.*

M. nebrophone *Schs.* (189 f) resembles *heraea* above; the orange colour is browner, in the cell there is a blackish-brown stripe-spot; the black costal margin of the forewing exhibits in the middle a projection towards the cell, the proximal margin is broader black. The hindwing is distally reddish with yellow postdiscal spots and a blackish-brown shade behind the cell. The ♀ is predominantly blackish-brown with smaller yellow spots. Costa Rica, Panama. *nebrophone.*

M. kenava *Btlr.* (= *myrona* *Plötz*) (188 b). Blackish-brown, at the proximal margin of the forewing red-brown, with an orange, oblique postdiscal band and a separate subapical spot. Hindwing in the disc reddish-yellow. Beneath yellow, the lower half of the cell, the proximal margin and anal angle black. Hindwing yellow speckled with red, with a small red-brown discal spot and a black proximal margin. Described from Venezuela. *kenava.*

M. humeralis *Mab.* (188 c) differs from *heraea* by its larger size and much more extensively blackish-brown colour, the cell containing only a small yellow dot at its upper end. Hindwing black with a broad, straight, orange transverse band. Beneath red-brown with postdiscal bands of yellow spots on both wings, at the proximal margin of the forewing black, at the costal margin of the hindwing dusted greenish. The ♀ is very much more extensively blackish-brown. Brazil, Colombia. *humeralis.*

M. apella *Schs.* almost exactly resembles *humeralis* above. Hindwing beneath brownish-yellow with black marginal dots; by darker antemedian and postmedian shading an orange postdiscal band is distinctly prominent; also before the margin is dark shading; the veins are somewhat lighter. In the ♀ the ground-colour beneath is darker olive-brown. Expanse of wings: 37 to 45 mm. Costa Rica (Carillo). *apella.*

M. misius *Mab.* Jet-black, costal margin of forewing at the base reddish-yellow, two such spots at the cell-end, behind them a macular band from the apex to the submedian, from here as a broad stripe to the base. Hindwing black with a short, bent discal band, also the proximal margin being reddish-yellow. Fringes of forewing reddish-yellow speckled with black. Fringes of hindwing plainly reddish-yellow, not speckled. Forewing beneath more yellow, at the costal margin as far as the apex reddish-yellow, at the base and the proximal angle black. Hindwing yellow, with long, black streak-shaped spots between the veins, at the costal margin bordered with black, at the proximal margin black with a yellow longitudinal stripe on the fold; below the costal margin there are 3 small black strigiform spots. Expanse of wings: 27 mm. Massauary. *misius.*

158. Genus: **Vinius** *G. & S.*

Chiefly distinguished by the ♂ stigma on the forewing: a scent-stripe on the lower median vein, another one below it. The hindwing near the base of the proximal margin shows a tuft of whitish hair.

V. sagitta *Mab.* (188 c) is very similar to *M. heraea* (188 b) but smaller, the yellow is darker, less bright orange, the blackish-brown colour broader, the hindwing broadly bordered with blackish-brown. Beneath the same, but paler yellow, the hindwing with dispersed, oblong, brown spots. Panama. *sagitta.*

V. arginote *G. & S.* (188 c) is very much like the preceding, more reddish-yellow and more extensively so especially in the disc of the hindwing. Hindwing beneath with rounded, not oblong submarginal spots. Amazon, Brazil. *arginote.*

V. exilis *Plötz* (188 d) is above blackish-brown, in the cell reddish-yellow like an oblique band to the apex extending at the proximal margin to the base, and a postdiscal costal-marginal spot. Hindwing only in the basal third black with a roundish yellow cellular spot, behind it bright orange with a narrow black border. Beneath the light yellow hindwing exhibits a larger black cellular spot and no postdiscal nor antemarginal punctiform spots. The habitat stated, California, is wrong. Patria unknown. Perhaps identical with *ephesus* *Hbn.* which originates from Surinam. *exilis.*

V. nicomedes *Mab.* (= *letis* *Plötz*) (188 d) is very much like *arginote* above, but the hindwing beneath is without the blackish spots. From Brazil (Rio de Janeiro, Manaos). *nicomedes.*

V. ephesus *Hbn.* (188 c) is smaller, lighter yellow, especially the whole costal-marginal part broadly yellow; also at the proximal margin near the base a yellow, oblong spot. Hindwing in the disc yellow with a but narrow black margin. Guiana. *ephesus.*

159. Genus: **Synale** *Mab.*

Antennae and palpi like in the following genera. Forewing with a rounded apex; the bent costal is nearer at the uppermost subcostal vein; the uppermost median vein rises before the cell-end. Posterior tibiae grey-haired.

hylaspes. **S. hylaspes** Cr. (188 d). Above black with 2 large white discal spots and a broad subapical band of the forewing, and a roundish spot near the apex of the hindwing. In the ♀ the spots are longer and narrower, and besides there is a submedian spot and a small postdiscal spot. Beneath the hindwing shows a long longitudinal ray from the base to the middle of the distal margin, proximally more orange, distally lighter yellow. Brazil (Pará).

silanion. **S. silanion** Plötz (188 d) is very similar, somewhat smaller. The hindwing exhibits a longitudinal ray being above shorter, beneath extending from the base to the middle of the distal margin, and being interrupted at the cell-end. Fringes white. From Bahia.

160. Genus: **Paracarystus** G. & S.

Different from *Carystus* by another ♂ genital organ, the strongly prolonged valves being bent. Middle tibiae spined.

hypargyra. **P. hypargyra** H.-Schüff. (= *argyris* Mab., senex Plötz) (188 e). Above blackish-brown with a white cellular spot, 3 postdiscal and 3 small subapical spots. Fringes especially on the hindwing ochreous. Beneath the same, but duller brown, at the apex of the forewing lighter. Hindwing beneath variably violettish-blue or light steel-blue, with dark brown veins. Fringes whitish. Brazil (Rio de Janeiro, Bahia).

radiatus. **P. radiatus** Mab. It is questionable whether it belongs hereto. Above blackish-brown, with 3 yellowish hyaline spots: one in the cell and 2 quadrangular ones behind it and below it, the latter being larger. Forewing without spots with a somewhat indented margin. The forewing is beneath similar, at the costal margin and apex lighter; hindwing blackish with broad white veins, along the upper edge of the cell, on the upper radial vein and the subcostal vein with a broad white band forking towards the margin like a Y and being below shaded with red-brown. Fringes reddish-white. Expanse of wings: 39 mm. Brazil (Sao Paulo).

menetriesii. **P. menetriesii** Latr. (= *rona* Hew.) (188 d, e) is most variable in its size and the number of the white spots. Above blackish-brown with or without 1 or 2 cellular spots and 2 or 3 postdiscal ones. Beneath the apex of the forewing and the whole hindwing are dull metallic violettish-blue, in the ♀ more greenish-blue, with 2 brown, narrow transverse bands. Fringes dark brown. From Colombia and Brazil.

koza. **P. koza** Btlr. (188 e) is above similar, intensely spotted white on the forewing. Beneath on the forewing a large, subapical, blue spot, hindwing light metallic blue, in the discal area yellowish iridescent, with a brown, bent transverse band from the apex almost to the middle of the proximal margin. Brazil.

161. Genus: **Zenida** Mab.

Antennae long and slender with a fusiform club; second palpal joint rising, projecting beyond the eyes, the conical last joint hidden in the hair of the 2nd joint. Apex of forewing obtuse. Femora clad with thick short hair. The ♂ shows a very conspicuous scent-organ: a silvery hair-scale stripe begins pointed at the rise of the upper median vein and grows broader, filling up the angle of the rise of the lower branch and extending to the base of the median.

abdon. **Z. abdon** Plötz (188 f) is a large, above monotonously blackish-brown species with a grey scent-stripe. Beneath the apex of the forewing and the whole hindwing are dark slate-coloured blue, with brown veins. From Brazil.

162. Genus: **Cyclosma** gen. nov.

Distinguished from the preceding genus by a somewhat longer, conical and obliquely rising terminal joint of the palp. On the forewing the upper median vein rises close at the cell-end; below its proximal third there is a circular, black, convex scent-spot corresponding to a slight depression on the under surface; in the lower cell-end there is a thinly scaled part.

abdonides. **C. abdonides** sp. nov. (188 f). Above uni-coloured blackishbrown, the scent-spot black, the thinly scaled part in the lower cell-angle is yellowish. Ends of fringes lighter, tinted ochreous, at the anal angle of the hindwing almost white. Beneath dull greenish slate-coloured, with black veins, below the cell of the forewing and from there in the shape of a bow to the anal angle blackish, before it in the submedian area whitish. Anal margin of hindwing brownish. According to 1 ♂ from the Songo (Bolivia).

163. Genus: **Carystus** Hbn.

Antennae long, with a long club and a long reverted apex; last joint of the palp short. Cell of forewing of two thirds of the length of the costal margin. ♂ without a scent-organ.

claudianus. **C. claudianus** Latr. (188 e). Above blackish-brown with 2 large white cellular spots, one between the median veins and a smaller one behind it; a subapical band of 4 lilac-white spots. Hindwing with a large,

rounded white postcellular spot. Beneath spotted the same, two thirds of the costal margin and the apex are lilac-grey, as well as the hindwing in the costal-marginal part, behind the cell and at the distal margin, with black veins; fringes of hindwing analwards and the abdomen beneath white. Guatemala to Bolivia.

C. diores Plötz (188 e) resembles the preceding above, but the hindwing is beneath marked just like *diores*. above. South America?

C. phorcus Cr. (188 f) entirely resembles *Vettius marpesia* (189 d) above and beneath, but it is larger *phorcus*. and distinguished by the absence of the scent-scale spot. Above the white band of the hindwing is longer and extends almost to the proximal margin, and the fringes are in their whole extent yellowish-white, too. Surinam.

C. ambrosei Weeks is above black with a white subapical dot of the forewing, below it there is a post- *ambrosei*. discal row of 5 spots to the middle of the proximal margin; the two uppermost spots are very small, the next is very large, the next small, and the lowest very small. Hindwing with a broad white band from the middle of the proximal margin to the cell-end; the proximal margin is grey-haired. Beneath more brownish, the spots closer together; on the hindwing the band being yellowish-white here extends from the middle of the proximal margin in the same width to the apex. Expanse of wings: 1.1 inch. Venezuela (Suapure).

C. richardi Weeks. Forewing above dark brown with 2 small, white subapical dots and 4 postdiscal *richardi*. spots, of which that below the median is the largest, the two upper ones being small. Hindwing brown with a whitish patch near the base. Beneath as above, forewing submedianly very much strewn with white; hindwing dark brown, the basal area except the brown costal margin yellowish-white. Expanse of wings: 1.3 inch. Venezuela (Suapure). It may perhaps be better to place it to *Vettius* (p. 981).

C. jolus Cr. (188 f). Above blackish-brown with 2 cellular spots 5 postdiscal and 2 subapical white *jolus*. spots. Hindwing with a cellular spot and an oblong diffuse patch behind it. Beneath the apex of the forewing, and the hindwing are golden yellow, with chestnut-coloured veins, with the white spots of the upper surface and golden yellow spots at the costal margin and subapically on the forewing. Surinam.

C. bursa Hew. (188 f) is not dissimilar, but the hindwing above shows a large, round discal spot. Be- *bursa*. neath the apex of the forewing is not yellow but black, but the inner-marginal part is broad whitish. The yellow hindwing shows a broad white longitudinal patch through the cell from the base to the distal margin, distally dusted with a bluish grey as is also a wedge-shaped spot below it; the cellular spaces at the distal margin are partly filled up by brownish wedge-shaped spots; the veins are not so red-brown. Brazil (Pará).

C. subviridis Plötz (188 g). It is questionable whether this large, beautiful species belongs hereto. *subviridis*. Above jet-black with an oblique row of 4 postmedian, white spots, the lowest being very small, that above it the largest, quadrangular; 2 subapical white dots; fringes of hindwings somewhat lighter, more grey. Beneath the costal margin and the apical half of the forewing is of a deep green with fine yellowish veins. The hindwing is coloured the same, with a somewhat lighter postdiscal band and a blackish inner-marginal wedge. São Paulo.

C. cynaxa Hew. (188 g) is above black, suffused with steel-blue, with a white, blue iridescent discal *cynaxa*. band of the forewing. Beneath duller black, apex of the forewing and hindwing grey, especially the latter thickly strewn with a yellowish-green and with black veins. Eyes red. Mexico to Panama.

C. pieris sp. nov. (188 g). Above blackish-brown with a broad, silvery white, semi-transparent discal *pieris*. oblique band of the forewing composed of 3 spots, 2 small postdiscal ones behind them and 3 subapical ones, the lowest of which is situate more towards the margin. Beneath the apex of the forewing is reddish-brown, the hindwing with deep chestnut-brown veins on a blackish-brown ground, with a very broad silvery band of long, wedge-shaped spots, running through the cell and reaching neither to the costal margin nor to the proximal margin. 1 ♂ from the Rio Songo (Bolivia), type in the Coll. FASSL.

C. ebusa Cr. (= *psecas* Cr., *belistida* Hew.) (188 g). Forewing blackish-brown, hindwing almost *ebusa*. entirely white, only the broad costal margin and distal margin brown. Beneath lighter, the apex steel-grey, costal margin ferruginous brown, with some white postdiscal spots towards the apex. Hindwing white, veins and a cellular spot chestnut-brown, the distal margin towards the apex irregularly marked chestnut-brown and steel-grey; anal angle blackish-brown. Panama to the Amazon and Bolivia.

C. antenora Ehrm., described as *Pamphila*, may presumably be ranged here. Above dark brown, *antenora*. with a reniform hyaline spot in the cell, a large, quadrangular one touching it beneath, above it a triangular one, its apex directed distally, above it more distally a grey streak-spot. Beneath somewhat lighter, the forewing apically tinted lilac, marked the same. Hindwing entirely white with a pinkish-reddish lustre. Expanse of wings: 42 mm. Venezuela (Suapure).

C. marcus F. (= *lyrcea* Plötz) (188 g). Above black with a small white cellular spot, 3 postdiscal *marcus*. spots and 2 subapical ones, hindwing with a broad, white transverse band which, being widened, almost reaches to the proximal margin. Hindwing yellowish, in the disc more white with a brown longitudinal stripe above the cell to the distal margin, a shorter one below it, and a large black anal spot. Brazil (Bahia, Pará), Panama to Guiana, and Trinidad.

C. aurelius Plötz (188 h) is very much like *marcus*, the white discal spot of the hindwing extends *aurelius*. to the anal angle; beneath the inner-marginal part is white, not blackish-brown. Nicaragua to Colombia, Venezuela and Brazil.

- diversus.* **C. diversus** H.-Schäff. (= maeon Mab.) (188 h) is also very similar, but the hindwing has beneath blackish-brown veins. Nicaragua to Brazil.
- fantasos.* **C. fantasos** Cr. (= abebalus Cr., eucherus Plötz) (188 h). Above blackish-brown with 3 postdiscal and 2 or 3 subapical creamy spots, hindwing with a similar discal band. Beneath the forewing has a reddish-brown apex, the hindwing is Isabel-coloured, with red-brown veins, a chestnut-brown spot at the cell-end and a larger one behind and below the lighter discal band; anal angle blackish. Mexico to Brazil. The green larva lives on grasses such as *Panicum ramosum*.
- ploetzii.* **C. ploetzii** Capr. (188 h) is above black, at the proximal margin of the forewing with olive hair, with 2 yellowish-white, quadrangular postdiscal spots and 3 small subapical ones. Hindwing in the disc light olive. Beneath on the forewing the costal margin and apex are chestnut-coloured, the spots as above. Hindwing reddish-yellow, with chestnut-brown veins, at the base except the costal margin, in the apical half of the distal margin and at the proximal margin chestnut-brown, from the base to the anal angle extends a black wedge-shaped spot being here very broad. From Brazil.
- clavicula.* **C. clavicula** Plötz (= furcifer Mab.) (188 i). Brown, the forewing with 3 white subapical dots and 2 postdiscal spots, below them a third disappearing in a whitish brightening which extends to the thorax. Hindwing with a light reddish-yellow band of 4 oblong spots. Forewing beneath blackish, the apex tinted light yellow, with black veins and black internerval stripes. Hindwing light yellow with black veins which, except the lower median vein, are forked at the margin; at the cell-end a black arcuate stripe. From Brazil.
- lucretius.* **C. lucretius** Latr. Above brown with 3 postdiscal spots and an ochreous-yellow anteterminal band on the hindwing; beneath the hindwing is blackish-brown with a white costal-marginal spot near the base and an oblique, olive-yellow band from the apex to the proximal angle, which below the cell sends forth a white continuation to the proximal margin. Brazil.
- abaris.* **C. abaris** Mab. is above black, on the forewing with 3 apical hyaline dots and 3 postdiscal spots behind and below the cell-end. The hindwing is in the disc dusted with ferruginous brownish. Beneath the forewing is black, in the apical part lilac with 3 black, small sagittiform spots between the hyaline dots. The hindwing is blackish, in the basal part and at the costal margin lilac-white with a black cellular spot and 2 smaller black apical spots behind the cell. Fringes grey. Expanse of wings: 28 mm. Porto Cabello.
- arva.* **C. arva** Hew. must be allied to the preceding; the description, however, of this species has not been accessible to us.
- micon.* **C. micon** Mab. is likewise similar to *abaris*, but much larger. Deep blackish-brown with 2 longish, yellow apical hyaline dots; in the cell-end are 2 streak-spots above each other, behind them there are 3 more, the lowest being diffuse, reddish-yellow, the uppermost very large, oblong quadrangular; the base of the costal margin is yellow. The hindwing shows 2 small postcellular spots. Beneath the forewing is blackish, at the costal margin and apex reddish, the hindwing reddish-brown with the 2 dots of the upper surface, besides one in the cell and one more towards the apex. Expanse of wings: 34 mm. Brazil.
- artona.* **C. artona** Hew. (188 i). Blackish-brown with 2 white cellular spots, 3 postdiscal and 3 small subapical spots; the hindwing shows 4 white spots in a bent row. Beneath the forewing is lighter, the apex grey; the hindwing is purple-grey with whitish-grey veins, costal part and proximal margin as well as internerval stripes; behind the cell are 5 whitish spots in a bent row. Nicaragua to Brazil.
- bebarus.* **C. bebarus** Plötz (188 i) is similar, smaller; the forewing is without the cellular spots; the small spots of the hindwing are minute and insignificant, of a yellowish tint. Beneath browner, with light yellowish veins and small, yellowish, postdiscal punctiform spots. Colombia.
- coryna.* **C. coryna** Hew. (= catargyra Fldr.) (188 i) is easily discernible by the hindwing being silvery beneath with 2 red-brown longitudinal stripes. Mexico to Bolivia.
- superbiens.* **C. superbiens** Mab. is black, the forewing with 2 white hyaline spots: 3 subapical ones, 4 postdiscal ones in an oblique row and 2 oblong cellular spots, the base striped yellow. Hindwing with a white, bipartite hyaline stripe through the cell; inner-marginal fold strewn with white. Forewing beneath as above, at the costal margin yellow, proximal margin white; at the margin are yellow spots between the veins. On the hindwing the median area round the hyaline stripes is blackish, between the veins striped yellow. Head with 4 white dots. Expanse of wings: 52 mm. São Paulo.
- dion.* **C. dion** Plötz (= diana Plötz i. l.) (189 a) is not unlike *fantasos* above, but the ground-colour is more olive-black, not brown, at the costal margin of the forewing and proximal margin of the hindwing dusted with whitish. Fringes white, blackish on the ends of the veins. Beneath the forewing is the same, but at the distal margin grey in the lower half. Hindwing yellowish-white with a large, oblong cellular spot, above it in the cell clouded grey with a broad, olive grey nebulous band in the middle of the distal margin. São Paulo.
- seitzii.* **C. seitzii** sp. nov. (189 a) is very similar, above browner, the subapical dots almost extinct, on the hindwing there is on the contrary a very much broader, coherent postdiscal band extending to the grey, densely white-haired inner-marginal part. Shape of wings longer, anal angle of the hindwing very much extended. Beneath the forewing is as in *dion*, the hindwing purely white with a brown, ferruginous-haired costal-marginal

spot near the base; beneath and comprising the cell like a bow, there is a large, irregular spot, in the upper proximal part which with a tooth extends into the middle of the cell, it is black strewn with light blue scales, distally and beneath olive-brown, strewn with ferruginous; at the distal margin, between the radial veins, there is a similar, olive-brown spot, between and below the median veins there are 3 extinct, small, grey nebulous spots before the margin. South Brazil (Sa. Cruz) in the Coll. SEITZ.

C. subrufescens Schs. (189 i) is above dark brown with a reddish base of the costal margin of the forewing and yellowish-white hyaline spots: 1 stripe in the cell-end and a spot below it; 3 postdiscal spots, the two lower ones small, and 2 subapical spots; fringes at the proximal angle yellowish. Beneath black, costal margin, apex and margin of forewing reddish-brown, hindwing likewise brownish-red with fine yellow veins. Expanse of wings: 36 mm. Costa Rica. *subrufescens.*

164. Genus: **Zenis** G. & S.

Wings narrower than in *Carystus*, distal margin of forewing concave; the lower median vein rises close at the base, the upper one at the lower cell-angle. The ♂ does not exhibit a stigma, but a hair-pencil below the lower median vein of the hindwing.

Z. minos Latr. (= jebus Plötz, melaleuca Plötz) (189 a). Above blackish-brown with a large, white hyaline spot in the lower cell-end and below it, as well as 4 or 5 small subapical spots in a broken row. The hindwing shows a short, narrow, white median band. Beneath somewhat lighter, more reddish, with a straight, white, at the edges ochreous-brown transverse band from the apex to the middle of the proximal margin, before it interrupted. Mexico to Brazil. *minos.*

Z. calvina Hew. is above black with a narrow white cellular spot and a large, quadrangular one below it, as well as 4 subapical ones in a row. Hindwing with a roundish discal spot. Beneath the same, but the hindwing is tinted deep red-brown. — In f. **dissoluta** Plötz (189 b) there is besides a large, white submedian spot on the forewing. Bahia; Pará. *calvina.* *dissoluta.*

Z. ozota Btlr. (189 a) is above hardly discernible from the preceding, but the spot of the hindwing ends towards the apex somewhat more pointed and is somewhat strewn with brownish, especially at the margins and on the veins. Beneath as above, but the hindwing shows a yellowish, broad transverse band from the apex to the middle of the proximal margin. — In f. **ozeta** Plötz there is besides a longish, white submedian spot on the forewing. Brazil, Venezuela. *ozota.* *ozeta.*

165. Genus: **Vettius** G. & S.

Antennae remarkably long, club with a long reverted apex. Middle tibiae spined. The ♂ exhibits a triangular scent-spot in the angle of the rise of the lower median vein, and a longitudinal stripe below it.

V. phyllus Cr. (189 b). Above blackish-brown with a longish, white hyaline spot at the lower cell-end and a large, obliquely quadrangular spot below it; behind it and below in front of it there is one smaller spot each, the latter being lustrous silvery, before it grey hairing. Two very small subapical spots, and on the hindwing a hyaline median band composed of 3 oblong wedge-shaped spots: inner-marginal fold in the middle white-haired. Beneath the apex of the forewing is lighter, the hindwing greyish-black, with darker veins, in the costal-marginal half yellow with a brownish-black longitudinal stripe in it. Panama to Brazil. *phyllus.*

V. laurea Hew. (189 b) is very closely allied to the preceding and above scarcely separable, the band of the hindwing at most being broader on an average. Beneath it also resembles *phyllus* very much. The hindwing is of a purer yellow in the larger costal half with a black spot at the costal margin near the apex and two broad, brown longitudinal bands; the lower one borders downwards on the yellow colour, towards the proximal margin on the grey anal colour; base of costal margin and the extreme proximal margin are brownish-red. Guiana, Brazil (Rio de Janeiro), Trinidad. *laurea.*

V. maeon Mab. Above black with two small, white postdiscal spots and a yellowish diffuse spot below the lower cell-end; the spot above it is larger; fringes brown. Hindwing black with an oval-triangular white discal spot being proximally defined in a blurred manner and separated from the inner-marginal fold by a similar spot which, however, extends farther downwards. Forewing beneath black with a white apical spot bordered by red towards the costal margin. Hindwing yellowish-white, at the base shaded with a ferruginous brown, with a blackish spot at the end of the proximal margin and a similar one behind the cell. Expanse of wings: 30 mm. Panama (Chiriqui). *maeon.*

V. elvira Plötz (189 b). Blackish-brown, towards the base and on the body somewhat greyer with a double white cellular spot and 3 postdiscal ones. Beneath reddish violettish-brown, beside the spots on the forewing above with an oblique, yellow subapical band. Hindwing yellowish-grey between the thickly red-brown veins; a broad, yolk-coloured stripe extends through the cell to the distal margin. South America, exact habitat not stated. *elvira.*

V. lafresnayi Latr. (189 c). Above brown with a white-hyaline cellular spot and pendent below it a large, quadrangular spot, above it 2 more small, postdiscal and 3 subapical ones. Hindwing with a white *lafresnayi.*

discal band and an inner-marginal fold haired bluish-white. Hindwing beneath white with a chestnut-brown costal margin, a broadly brownish distal margin and some minute spots in the discal area. Panama to Brazil.

peninsularis. **V. peninsularis** Plötz (189 c) is above similar, but it has no cellular spot and the hindwing is not spotted. Beneath the hindwing is white with a large, blackish-brown triangular spot in the cell and a brown distal margin being broadest opposite the cell and growing very narrow at the anal angle. From Pará.

triangularis. **V. triangularis** Hbn. (= *pica* H.-Schüff.) (189 c) is above similar, but it has a broad, white discal band of the hindwing reaching the proximal margin. Hindwing beneath white, at the costal margin broadly black with a small triangular spot below the cell and a broad blackish-brown margin. The white disc is hued yellowish towards the margin. Brazil.

monacha. **V. monacha** Plötz (189 c) has above rather small white spots; the band of the hindwing is also shortened and does not reach the proximal margin. The under surface is lighter, browner, the white area of the hindwing very extensive and bluish-grey, in some places strewn with brownish. Costal margin red-brown like the broad distal margin except the apex; the small triangular spot is minute. From Pará.

hypargus. **V. hypargus** Mab. is a small, black species with 3 white, subapical hyaline dots and 5 spots in a bent row behind and below the cell-end, but there is no spot between the lower radial veins; in the middle of the proximal margin there is a white-dusted spot and another one in the cell-end. The hindwing exhibits in the middle a large, white triangular spot, behind the lower cell-angle a whitish longitudinal patch. Forewing beneath red-brown, spotted as above. Hindwing in the proximal half yellowish-white, in it with the white spot of the upper surface; the marginal area is red-brown. Expanse of wings: 27 mm. Manaos.

marpesia. **V. marpesia** Hew. (189 d) is a larger, very much white-spotted species with a brown body and brown bases of the wings. Beneath the hindwing is light violet, with brown veins and a white spot before the middle of the distal margin and two blackish spots at the anal angle and above it at the distal margin. The costal margin of the forewing is white, the fringes of the hindwings are also white towards the anal angle. Amazon District.

periphas. **V. periphas** Mab. is above black, the base of the forewing strewn with yellow; the forewing exhibits 3 apical hyaline dots, 2 small ones in the cell and 3 somewhat larger postdiscal ones. The margin of the hindwing is yellowish with a narrow, oval, white longitudinal spot; fringes of hindwing white as far as the lower radial. Beneath the forewing is blackish with a large, yellow, black-veined apical spot. Hindwing at the proximal margin light yellow, in the costal-marginal part yellowish-green, in the discal area brownish. Expanse of wings: 36 mm. Amazon (Massaury).

166. Genus: **Coeliades** Hbn.

Antennae long, with a slender club. Forewing long, with a concave distal margin and a basally convex costal margin. Hindwing at the anal angle feebly lobate; body slender with long legs and bare middle tibiae. The ♂ exhibits a tripartite stigma: a short scent-stripe in the middle of the median between the branches, a longer one on the lower median branch, and the longest on the submedian.

dubius. **C. dubius** Cr. (= *virga* Btlr.) (189 d) is above blackish-brown, towards the margin suffused with a leaden or steel-grey lustre, with 2 small postdiscal and subapical spots. Beneath at the apex of the forewing and on the hindwings deep red-brown or cerise, on the hindwing with a narrow yellow transverse band from the apex to the middle of the proximal margin. Surinam.

elenora. **C. elenora** Ehrm. is unknown to me; we place this species having been described as *Pamphila* to this genus, because the description coincides with that of *dubius* with which it may agree; the scent-organ, however, is not mentioned. Described from Venezuela.

fiscella. **C. fiscella** Hew. (= *balteatus* Mab.) (189 e). Blackish-brown with a large, bipartite cellular spot, a trapezoid spot below it, and farther towards the margin with a submedian, longish small spot and 3 subapical ones in a straight line. Hindwing with a brownish-smoked band across the cell-end. Beneath with the same spots, at the costal margin and apex of the forewing and on the hindwing chestnut-red except the proximal margin of the hindwing, with a yellowish transverse band from the apex of the hindwing to the middle of the proximal margin. Nicaragua to the Amazon.

167. Genus: **Dion** G. & S.

Distinguished from the preceding genus by a stronger, stouter body and the scent-stripe extending from the base of the upper median vein obliquely and somewhat bent to the middle of the submedian.

gemmatus. **D. gemmatus** Btlr. (189 e). Above blackish-brown with a grey stigma. Beneath the forewing is lighter at the apex with darker veins; the hindwings are blacker, in the anal two thirds chestnut-brown, with black veins, in the disc with a black spot with 3 or 4 light-blue eye-dots in it. The ♀ is in the apical half of the forewing above pale reddish-brown with dark brown veins, the apex itself is dark. Costa Rica, Panama.

D. rubrinota *Drc.* (189 f). Above blackish-brown, between the veins lighter. Beneath greyish-brown, *rubrinota*, on the forewing with a yellowish, black-veined postdiscal area. Hindwing greyish-brown, with black veins and internerval streaks with a brick-red costal margin and inner-marginal stripe and a brick-red longitudinal diffuse patch along the lower margin of the cell. Eyes red. The ♀ is also above postdiscally lighter yellowish-white. Peru, Bolivia. — In Colombian specimens: f. *acraea* *Plötz* (189 e) there is only the red stripe below the *acraea*, cell, those at the costal and proximal margins being absent.

D. pruinosa *Plötz* (189 e). Above monotonously blackish-brown with a grey stigma. Beneath the *pruinosa*, forewing, towards the apex at the distal margin, is dusted with violettish-bluish like the whole hindwing except the costal part; some small, postdiscal, brownish diffuse spots. Brazil (Chapada).

168. Genus: **Flacilla** *G. & S.*

Antennae of two thirds of the length of the costal margin with a slender club and an almost semicircularly bent apex; terminal joint of the palp long and pointed. Forewing long with a concave costal margin. The ♂ exhibits a scent-spot from the base of the median to the rise of the lower branch, a stripe below it and a third longer one on the submedian; the hindwing shows long hair in the anal fold.

F. aecas *Cr.* (189 d) is easily recognizable by the steel-blue, white-veined hindwing beneath with *aecas*, a submarginal row of whitish dots; also the costal margin and apex of the forewing is steel-blue; the proximal margin of the hindwing is broad brownish-grey. Panama to Brazil; Trinidad.

F. coatepeca *Schs.* Head reddish-brown, collar and thorax violettish-brown. Wings dark brown, *coatepeca*, forewing with a small, white-hyaline longitudinal spot in the cell, a large spot below it, 2 smaller ones farther distally and 2 subapical, small, quadrangular spots. Beneath dark brownish-red, on the forewing the cell and proximal margin blackish, with the spots as above. Hindwing with a blackish-brown inner-marginal part. Expanse of wings: 42 mm. Mexico (Coatepec).

F. ergola *Schs.* Above brown, the basal third of the costal margin of the forewing as well as the anterior *ergola*, body more red-brown; a large spot between the median veins, and a smaller one above it and farther distally are yellowish-hyaline. Beneath the forewing is black, the costal margin, apex and distal margin are red-brown. Hindwing reddish-brown, at the costal margin darker, with a broad, dark postdiscal shade and a light violet cell. Expanse of wings: 37 mm. Novo Friburgo.

169. Genus: **Cymaenes** *Scddr.*

Antennae long and slender; terminal joint of the palp long and erect. Body slender, middle tibiae bare, in the ♂ a scent-organ.

C. malitiosa *H.-Schäff.* (= *lycaenoides* *Plötz*) (189 e) is above of a plain blackish-brown, beneath *malitiosa*, lighter, the forewing at the costal margin and apex watered red-brown like the whole hindwing which exhibits a broad, irregular dark transverse band being interrupted in the middle and broadest at the costal margin. Mexico to Costa Rica and Cuba and Trinidad. Very closely allied to *silius* (189 f) from which, however, it is easily separated by the hindwing beneath.

C. lutulenta *H.-Schäff.* (189 e) is above like the preceding. Beneath lighter, the hindwing whitish *lutulenta*, and watered with brownish-red, at the costal margin broadly red-brown, in the middle of the lower margin interrupted by a light streak of the ground-colour. Panama to Colombia and Venezuela.

C. silius *Latr.* (*antistia* *Plötz*) (189 f). Blackish-brown with a reddish-yellow oblique band from the *silius*, proximal margin before the base to the apex of the forewing, where it ends narrowed. Costal margin strewn with ochreous. Beneath the costal margin is broader reddish-yellow, otherwise the same; the hindwing is dark ochreous-yellow, strewn with blackish-brown. Mexico to Brazil. Allied to *lunata*, but the reddish-yellow band is narrower, the hindwing beneath lighter.

C. lunata *Plötz* (= *berus* *Mab.*, *insidiosa* *Mab.*) (189 f) is very similar, but the reddish-yellow is much *lunata*, more extensive than in *silius*, so that only a cellular longitudinal stripe and the dentate margin remain dark. Beneath red-brown, towards the proximal margin light ochreous or grey. Hindwing ferruginous-brown, in the disc and at the distal margin dusted with lilac-grey. The species is very variable; specimens from Costa Rica are on the forewing beneath analwards ochreous-yellow, on the hindwing beneath with a more or less distinct, narrow, dark band proceeding from the costal margin near the apex. Costa Rica to Brazil. — f. *silene* *Plötz* is above darker, the reddish-yellow reduced and more red-brown, beneath also darker, on the forewing without the submedian lighter part.

C. syraces *G. & S.* (189 f). Forewing above reddish-yellow with a large, triangular basal spot and *syraces*, quadrangular subapical spot of a blackish-brown colour and a broad, similarly coloured margin. Hindwing below the broad black costal margin in the disc strewn with ferruginous yellow. Beneath the forewing is the same, the hindwing grey or ochreous-yellow, strewn darker, with a dark brown triangular costal-marginal spot and a smaller one below the cell-end; distal margin broadly darkened. Mexico to Guatemala.

C. pericles *Mschlr.* (189 g) is above similar, but more extensively yellowish-brown, especially on the *pericles*, hindwing. Beneath quite different, the hindwing being monotonously yellowish-brown with a narrow black marginal line. Forewing coloured and marked as above. Colombia, Venezuela, Trinidad.

nux. **C. nux** Schs. Above dark brown, with 3 small, white, postdiscal hyaline spots in an oblique row and a very small subapical dot; fringes of hindwing white. Beneath the forewing is blackish-brown, at the apex lighter, in the middle of the distal margin shaded darker; the lowest spot is larger than above and not transparent. Hindwing whitish, streaked brown, costal margin brown with a large, dark spot below the cell-end, traversed by the light median veins. Expanse of wings: 35 mm. Novo Friburgo.

lucia. **C. lucia** Capr. (189 g). Dark brown with a curved postmedian band of lighter spots and lighter speckled fringes. Beneath in the apical part of the forewing and on the hindwing reddish-grey, watered with dark brown, with broad, brownish-grey or violettish-grey demi-bands proceeding from the darkened anal part and taperingly not reaching to the costal margin. Brazil.

dubitans. **C. dubitans** Schs. Above dark brown with a feeble light brown oblique shade behind the cell. Beneath olive-brown, the proximal margin of the forewing greyish-brown; hindwing in the middle of the distal margin tinted violet, at the costal margin darker with a dark oblique shade from the apex to behind the cell. Expanse of wings: 29 mm. Novo Friburgo.

intermedia. **C. intermedia** Schs. (189 g). Dark brown with a light olive-brown diffuse patch from the middle of the proximal margin to the lower cell-end; hindwing haired olive. Beneath the forewing is dark brown, the proximal margin not lighter. Hindwing dark olive-grey, densely striated brown, at the costal margin darker, with a dark shade from the cell-end to the apex. Expanse of wings: 28 mm. Brazil (Tijuca), also found in Mexico.

occulta. **C. occulta** Schs. Above dark brown, beneath duller, dusted with reddish, on the forewing the inner-marginal part lighter brown. The hindwing exhibits a dark oblique shade from the lower median vein to the apex, the proximal margin is lighter brown. Expanse of wings: 29 mm. Rio de Janeiro.

170. Genus: **Mnaseas** G. & S.

Antennae shorter than half the costal margin; terminal joint of the palp long and slender. The ♂ exhibits a narrow, interrupted scent-scale stripe from the base of the lower median vein obliquely to the first third of the submedian. Only 1 species:

bicolor. **M. bicolor** Mab. (= bias Plötz) (189 g). Above lustrous blackish-brown with a stigma of the same colour. Beneath lighter, the forewing at the costal margin and apex, and the hindwing is ferruginous brown; the fringes are dirty ochreous-yellow. It greatly resembles *Mastor anubis* (187 g) and is separable by the narrow, oblique stigma and the longer, slender terminal joint of the palp. Mexico to Colombia.

171. Genus: **Methionopsis** G. & S.

Antennae long with a long club; terminal joint of the palp long, erect. Stigma bipartite: one part rests on the middle of the median, the other side of the angle on the lower median vein. In *typhon* the lower side of the angle is absent.

ina. **M. ina** Plötz (= modestus G. & S., philemon Btlr.) (189 g). Above blackish-brown with a similarly coloured stigma. The forewing exhibits some postcellular ochreous-yellow scales. Beneath the same, at the proximal margin of the forewing somewhat lighter. Mexico to Brazil.

typhon. **M. typhon** G. & S. is above the same. Beneath tinted somewhat purple; on the whole smaller, the stigma less developed. Guatemala.

caerulans. **M. caerulans** Mab. is somewhat smaller than *ina*, above blackish-brown. Beneath black, in the disc of the forewing there are 2 small grey dots, the hindwing shows 4 or 5 dots at the distal margin; the costal and distal margin of the forewing as well as the disc of the hindwing show a bright blue reflection. From Pará.

172. Genus: **Eutocus** G. & S.

Antennae and palpi as in the preceding genus. Cell of forewing three fifths of the length of the costal margin; the middle radial at its rise very much bent and nearing the lower radial; body slender. Middle tibiae without spines. The ♂ exhibits a sagittiform scent-scale stripe in the angle between the median and its lower branch.

phthia. **E. phthia** G. & S. (189 g) is blackish-brown, stigma of the same colour; the forewing exhibits some small, ochreous-yellow postcellular scales. Beneath the same, at the proximal margin lighter, at the costal margin and apex, and on the hindwing scantily strewn with ochreous. Smaller than *M. ina* which it very closely resembles, only separable by the stigma and veins. Mexico to Guiana.

volasus. **E. volasus** G. & S. is very closely allied to the preceding, beneath more reddish, only very diffusely strewn with ochreous. The stigma is less distinct. Panama.

173. Genus: **Eprius** G. & S.

Antennae and palpi as in the preceding; on the forewing the middle radial vein is less far depressed. The ♂ stigma consists of 2 longitudinal stripes, one of which is situate on the median between its branches, while the other extends proximally to it as far as the rise of the lower branch; the hindwing shows very long hair at the proximal margin of the abdominal fold.

E. valeda G. & S. (189 g). Blackish-brown with a similarly coloured stigma. Beneath scantily strewn *valada*, with yellow; base of antennal club beneath ochreous-yellow. Mexico to Panama, Trinidad.

174. Genus: **Mnasicles** G. & S.

Distinguished from the preceding genus by the ♂ stigma extending from the rise of the lower median vein obliquely to the middle of the submedian, being broad, though indistinct and interrupted.

M. geta G. & S. (189 g) is blackish-brown with a similarly coloured *stigma*. Beneath scarcely lighter, *geta*. The forewing at the proximal and distal margins and the hindwing in the basal half and at the distal margin scantily strewn with lilac grey. Base of antennal club beneath ochreous-yellow. Mexico to Costa Rica.

M. hicetaon G. & S. resembles *geta* above. Beneath lighter, the forewing in the middle darker, at *hicetaon*. the costal margin and apex as well as the whole hindwing scantily strewn with ochreous-yellow. Mexico.

M. rivera Plötz (189 h) is twice as large as *geta*, above almost black, beneath more variegated, at *rivera*. the distal margin of the forewing in the upper half tinted yellowish-grey with a subapical, light costal-marginal spot and an inner-angular spot. Hindwing with a yellowish-grey apical band and a lighter grey distal margin and proximal margin. From Rio de Janeiro.

175. Genus: **Callimormus** Scddr.

Separated by the ♂ scent-organ being composed of 2 stripes, one of which in some species is acute-angular with differently long sides on the middle segment of the median, the other being below the submedian. Terminal joint of the palp long, slender and pointed and almost vertically erect.

C. juvenus Scddr. (189 h) is above dark brown, behind the stigma with 2 or 3 small, indistinct ochreous *juvenus*. spots. Beneath with lighter yellow veins, a darker marginal band and basal part, so that a postdiscal band of light yellowish spots is prominent. Mexico to Brazil.

C. polita Plötz (189 h) is above similar, but especially on the hindwing with broad ochreous-yellow *polita*. fringes. Beneath the hindwing is much darker, olive-blackish, with yellow veins and a double postdiscal row of yellow dots. Patria unknown.

C. filata Poey (= *radiola* Mab.) (189 h) differs from *polita* by its larger size, darker ground-colour *filata*. and just as dark fringes. Beneath the same, at the apex of the forewing, and on the hindwing with yellowish veins. Panama to Colombia, Venezuela, Guiana, Brazil, in Cuba and Trinidad. Distinguished from *Parphorus storax* (188 a) by a longer terminal joint of the palp and a different stigma, being larger than the likewise very similar *gracilis* with distinct yellow veins.

C. vetula Mab. (= *interpunctata* Plötz) (189 h) is above purer black, with a slight steel reflection *vetula* and darker veins, beneath as *polita* from which it differs by entirely dark fringes. Brazil (Bahia, Pará).

C. fabulinus Plötz (189 h) is allied to the preceding, larger, more slender, above browner with *fabulinus*. traces of small, lighter, postdiscal, subapical and cellular spots. Beneath somewhat darker than *vetula*, otherwise the same. Surinam.

C. gracilis Fldr. (= *alsimo* Plötz) (189 k) is above darker than *juvenus*, beneath without light *gracilis*. discal spots; forewing above at the costal margin, between the median veins and at the cell-end scantily strewn with yellow. Beneath the apex of the forewing, and the hindwing with light ochreous-yellow veins. Mexico to Colombia and Venezuela.

C. corades Fldr. (= *decrepida* H.-Schäff., *tenera* Plötz) (189 k) has above mostly more distinct ochreous- *corades*. yellow cellular, postdiscal and subapical spots than the other species; but they may also be fainter or almost absent. Beneath the hindwing is yellowish or more lilac-grey with a postdiscal row of dots and a darker marginal band. Mexico to Brazil and in Trinidad.

C. diaeses Schs. Above dark brown with lighter fringes and on the forewing some small ochreous- *diaeses*. yellow postdiscal scales. Beneath brown, dusted with violet, apex of forewing and distal margin with yellow veins, hindwing with yellow veins and a discal streak and a postdiscal row of minute whitish spots. Expanse of wings: 19 mm. South Eastern Brazil.

- elides.* **C. elides** Weeks. Above dark brown, on the forewing with 2 white subapical dots; postdiscally below the cell 2 small white spots. Beneath lighter, hindwing more ferruginous-brown, basally still lighter, at the costal margin with a diffuse spot of the ground-colour; a short, lighter, postdiscal band. Expanse of wings: 1 inch. Venezuela (Suapure).
- verames.* **C. verames** Schs. is a somewhat larger species. Above dark brown with lighter fringes; on the forewing the costal margin shows olive-greenish scales, and similar scales are situate postdiscally in the shape of small indistinct spots. Beneath the forewing is brown, at the proximal margin lighter with a yellow marginal line; subcostal veins as far as the middle radial yellow, a longitudinal streak in the cell and the median veins at the distal margin being yellow, too. Hindwing violet, with bright yellow veins; inner-marginal part dusted with yellow; an antemarginal row of yellow spots. Expanse of wings: 22 mm. Peru.

176. Genus: **Mnestheus** G. & S.

Chiefly distinguished from *Callimormus* by a different scent-organ consisting of 2 short longitudinal stripes, one of which is situate in the angle of the rise of the lower median vein, the other being right below it.

- ittona.* **M. ittona** Btlr. (189 k). Above blackish-brown with a similarly coloured stigma. The forewing shows 3 white postcellular spots in an oblique line. Beneath the same, the lowest spot extinct. The proximal margin of the hindwing and a broad band from the proximal margin to the middle of the distal margin are silvery or yellowish-silvery, both flowing broadly together at the costal margin. In southern specimens the hindwing is more red-brown instead of blackish-brown. Panama to Bolivia.
- cometho.* **M. cometho** G. & S. (189 k) is above blackish-brown, the spots arranged as in the preceding, but ochreous with another small, subapical one; disc of hindwing reddish-yellow. Beneath lighter, the veins of the costal margin, apex and distal margin being ochreous-yellow as well as those on the hindwing, between them there are small, whitish postdiscal spots. By its larger size and the ochreous-yellow spots it differs from *ludens*; larger than *virginius*, with much more distinct spots on both wings beneath. Mexico.
- ludens.* **M. ludens** Mab. Above like *cometho* (189 k), but the spots whitish-hyaline. Beneath without the white internerval spots; the yellow veins on the hindwing beneath are interrupted at the cell-end. Panama to Venezuela.
- virginius.* **M. virginius** Mschlr. (189 k) resembles *cometho* above, but it is smaller; beneath blackish-brown with yellow veins except the inner-marginal half of the forewing, the spots of the forewing above being also beneath faintly visible, especially below the subapical ones two being removed far towards the margin. Surinam.
- petrovna.* **M. petrovna** Schs. looks above like *cometho* (189 k), the spots of a purer yellow and diaphanous except the lowest above the submedian, which is triangular and not transparent; in the cell there is also a spot; hindwing in the disc dusted yellowish with small postdiscal yellow spots. Beneath the forewing is dark brown, spotted as above with yellow veins at the distal margin and apex and subcostally; hindwing violet, with brownish-yellow veins and an undulate yellow postdiscal line; inner-marginal part brown bordered with yellow. Expanse of wings: 26 mm. Petropolis.

177. Genus: **Epinosis** Schs.

♂ with hairy, erect palpi. Antennae more than half as long as the costal margin, towards the bent and pointed end thickened. Wings broad; on the forewing the lower median vein rises from the middle of the cell, the upper one close before the angle; transverse vein oblique, below the middle it dispatches the lower radial; below the median between the branches with a narrow scent-stripe. Only 1 species.

- parvipuncta.* **E. parvipuncta** Plötz (= *angularis* Mschlr.) (186 d) is above blackish-brown with a slight greenish reflection on the thorax and bases of the wings, on the forewing with one minute postdiscal and subapical dot each; fringes somewhat lighter, more yellowish. Beneath the same, scarcely lighter, only the submedian area of the forewing is brownish-grey and the distal margin of the hindwing is a little lighter brown. Fringes with a yellowish tint. Costa Rica to Guiana.

178. Genus: **Artines** G. & S.

Antennae and palpi long, as in the preceding genera. The ♂ stigma is sagittiform and situate in the angle of the rise of the lower median branch and the median; hindwing at the anterior edge of the abdominal fold with long hair. In *atizies* the stigma is absent.

- atizies.* **A. atizies** G. & S. (190 a). Blackish-brown, on the forewing with 2 small whitish spots below and behind the cell in an oblique line and 2 small subapical ones. Beneath lighter, at the apex of the forewing and on the hindwing dusted with lilac; spots on the forewing as above, analwards whitish with a subapical, narrow, blackish-brown band which is crossed by light veins. Hindwing with large, black dots encircled by ochreous-yellow, and 5 blue-pupilled spots. Panama, Venezuela, Guiana, Brazil and Trinidad.

A. aepitus *Hbn.* (190 a). Above black with 2 small postdiscal and 1 minute subapical white spot. *aepitus*. Beneath the forewing at the apex and the hindwing are violettish-grey, in the disc lighter, more bluish-white, with a thick black spot at the cell-end and behind it a curved band of faintly ochreous-yellowish spots, on both sides bordered with black. Brazil.

A. aquilina *Plötz* (= *tertius Strd.*) (190 a) is similar, somewhat smaller, above not different. Beneath *aquilina*. the apex of the forewing is lilac with a row of black dots; the hindwing is lilac-grey with a postmedian dentate band of bluish-violet, on both sides bordered with black; between it and the margin there is another black dentate line; the space between both and behind the cell contains dispersed ochreous-yellow scales. Brazil (Santos, Minas Geraes).

A. anna *Mab.* is questionable as to its position. Blackish-brown, forewing with 3 small subapical *anna*. dots, below them 4 small yellowish clouds. Hindwing with a yellowish discal reflection, fringes yellowish-brown. Forewing beneath light greyish-red, at the apex and costal margin blackish; spots more distinct than above, in the submedian area 2 white diffuse patches. Hindwing light reddish-grey, in the cell with a roundish, lilac brightening and a brown streak in it, and in a semicircle behind it 5 lilac spots on both sides bordered with black. Bolivia.

A. ursula *sp. nov.* (190 a) somewhat resembles *anna*. Above plainly blackish-brown with traces *ursula*. of lighter postdiscal and subapical diffuse spots. Beneath dull blackish-brown, apex of forewing and proximal angle lighter grey, the former with a roundish spot of the ground-colour in it, the 2 postmedian spots more distinct than above. Hindwing in the disc with large black spots, only separated by the light veins and the transverse vein; behind these spots, parallel to the distal margin, 5 oblong, bluish-violet spots, also distally bordered with black. From the Upper Madre de Dios (South Peru) from the Coll. FASSL.

A. acroleuca *Plötz* (189 k) is above black with a whitish apex of the forewing before the black fringes. *acroleuca*. Beneath lighter brown with whitish postdiscal and subapical macular bands; that on the hindwing is distally pupilled with black; both wings exhibit fine black undulate lines before the distal margin; the hindwing besides a small white, black-pupilled cellular dot. Brazil.

A. farinosa *sp. nov.* (190 a) is larger, above with a minute subapical dot, 2 white postdiscal spots *farinosa*. and a yellowish submedian patch. Beneath similar as *aepitus*, hindwing densely strewn with white, with a very large, jet-black cellular spot surrounded by bluish-white; behind the cell there are oblong bluish-white wedge-shaped spots, parted by the brownish veins and proximally and distally narrowly bordered by brown, distally touching the broad dark brown distal margin. According to several specimens from Colombia (Rio Aguaca and Rio Negro), taken by FASSL.

A. melitaea *sp. nov.* (190 a) is above uni-coloured brown, ends of fringes somewhat more whitish, *melitaea*. on the forewing with 3 small, lighter, subapical diffuse spots which may also be absent. On the but slightly duller under surface they are distinctly prominent as 3 to 5 small, oblong, whitish spots, behind them close before the apex a small white spot. Hindwing in the disc white, basally somewhat, towards the margin more broadly and intensely smoked brownish, with 3 or 4 dark brown, somewhat dentate lines marked like *Melitaea*, partly their interspace is strewn with brownish; before the margin parallel to it some more, small, whitish, diffuse spots. Fringes on the veins somewhat speckled. Rio Aguaca Valley (Colombia); FASSL.

A. pavo *sp. nov.* (190 a). Above blackish-brown, forewing with 2 white postdiscal spots, an indis- *pavo*. tinctly lighter submedian diffuse spot and 2 minute, scarcely visible subapical dots. Beneath somewhat duller brown; on the forewing marked the same, before the distal margin a somewhat curved, rather indistinct band of darker nebulous spots. Hindwing in the disc white, towards the proximal margin bluish, at the base inclusive of the costal margin and at the distal margin brownish, the median and radial veins behind the cell ferruginous, between them are 3 long, jet-black, wedge-shaped spots exhibiting round, bluish-white pupils near the distal end. In the ♀ these spots are confined to 2 small, roundish, black, not pupilled spots, the discal area is more yellowish. A couple taken by FASSL on the Songo (Bolivia).

179. Genus: **Falga** *Mab.*

Antennae and palpi as in the preceding. Wings particularly long and narrow, costal margin of forewing at the base convex, hindwing at the anal angle somewhat lobate. Body long and slender. The ♂ shows a tripartite scent-organ: a stripe in the middle of the median, another one below the lower median branch, and a third before the middle of the submedian.

F. jeconia *Btlr.* (190 a) is above blackish-brown with a yellow longitudinal stripe below the cell *jeconia*. of the forewing and a yellow spot almost covering the whole hindwing. Beneath the apex of the forewing and the whole hindwing are uni-coloured yellow. Venezuela. — f. **abalus** *Mab.* (190 b) has almost entirely black *abalus*. forewings, the hindwing beneath towards the proximal margin strewn with brown; found in Colombia.

F. sciras *G. & S.* (190 b) is above almost quite reddish-yellow, only at the apex and distal margin *sciras*. of the forewing broadly blackish-brown, like the basal and costal veins; hindwing broadly bordered with blackish-

brown, the broadest at the anal angle. Beneath blackish-brown with a large, oval, ochreous-yellow discal spot of the forewing the apex of which is reddish-yellow; hindwing light yellow with 2 small blackish-brown discal spots and an indistinct macular band parallel to the distal margin. Honduras.

hermione.

F. hermione *Schs.* It is questionable to which genus it belongs. Above black with an orange subcostal vein and a broad, orange-brown postmedian shade united with a similar stripe-spot below the cell. Hindwing orange-brown, bordered with black. Fringes orange, on the forewing spotted black. In the ♀ the orange colour is not so extensive on the forewing. Costa Rica.

180. Genus: **Enosis** *Mab.*

Antennae $\frac{2}{3}$ of the length of the costal margin; palpi ascending with a short, conical terminal joint. Forewing broad, at the base convex. Body slender, with very long legs. ♂ with a tripartite scent-scale spot: a triangular spot in the angle where the lower median vein rises, a short longitudinal stripe below it and a similar one before the middle of the submedian.

quadrinotata.

E. quadrinotata *Mab.* (190 b). Above blackish-brown with a similarly coloured stigma. Beneath lighter, with a broad, grey proximal margin of the forewing; in the disc 2 small light dots. Hindwing with 4 yellowish discal dots, the apex of the forewing, costal margin and the hindwing scantily strewn with yellow. Panama.

simplex.

E. simplex *Mab.* is above and beneath jet-black, on the forewing with 2 small white hyaline dots before the apex and a third farther below. The under surface exhibits the same dots and besides on the hindwing a grey postcellular dot. Fringes white, towards the tips somewhat smoky. Expanse of wings: 42 mm. Venezuela.

atrata.

E. atrata *Mab.* is as large as *simplex* and on both surfaces quite uni-coloured black without any spots. Fringes purely white. Discernible from the very similar *immaculata* (190 b) by the forewing being at the apex somewhat longer, more pointed and by the entirely white fringes. Colombia.

dognini.

E. dognini *Mab.* Blackish-brown, in the disc of both wings somewhat lighter reddish. The forewing exhibits 3 small, white, subapical hyaline dots and a quadrangular, similar spot behind the lower cell-angle. Beneath the forewing shows a broad whitish band from the apical dots to the proximal margin, the hindwing a postdiscal band of 6 oblong-quadrangular silvery spots, the uppermost of which is only half as large as the others, owing to an ochreous-yellow spot in front of it. Expanse of wings: 42 mm. Ecuador (Loja).

immaculata.

E. immaculata *Hew.* (190 b) is above uni-coloured blackish-brown, with fringes of an ochreous-yellowish reflection, and a very slight bronze-green reflection on the body and wings. Beneath the same, of a scarcely duller colour. Venezuela.

inframaculata.

E. inframaculata *Strand.* We cannot tell to what extent this species may be identical with *quadrinotata*. Above blackish-brown with single yellow hair-scales in the costal half of the forewing. Beneath the forewing shows 2 roundish, yellow, small spots, the hindwing a postdiscal transverse row of small yellow spots. Costa Rica.

181. Genus: **Carystoides** *G. & S.*

Antennae $\frac{2}{3}$ of the length of the costal margin; palpi ascending, last joint hidden. Body robust. Middle tibiae without spines. ♂ without a stigma.

basochesii.

C. basochesii *Latr.* (= *argyrocoryne* *Mab.*) (190 b). Above blackish-brown with light brownish-grey fringes, a more or less broad, white apex of the forewing before them, and 3 hyaline discal spots, the hindwing with a tripartite discal spot. Beneath the apex of the forewing is grey with 3 dark dots in it. Hindwing particularly at the base densely strewn with yellowish-grey. Honduras, Panama, Colombia, Brazil and Trinidad. — f. **replana** *Plötz* (190 b) has the spot of the hindwing reduced to 2 minute spots, — and f. **valentina** *Plötz* (190 c) has on the forewing much smaller discal spots, and on the hindwing the discal spots as 3 separate small spots. The latter form originates from Surinam. — f. **benchos** *Weeks* from Bolivia resembles *replana*, but it has another, small, subapical spot on the forewing.

replana.

valentina.

benchos.

sicania.

C. sicania *Hew.* is above red-brown, with a white apex of the forewing, a tripartite hyaline discal spot and a small subapical dot; also the hindwing exhibits a hyaline spot in the middle. Beneath as above, but the costal margin and apex of the forewing, as well as the hindwing are red, the latter towards the base somewhat lighter. Expanse of wings: $1\frac{3}{4}$ inch. From Brazil.

cathaea.

C. cathaea *Hew.* (190 d) differs above from the preceding by the absence of a spot on the hindwing, being otherwise very similar. Beneath quite different, the apex of the forewing, and the hindwing greyish-brown, tinted violet, with whitish, dark-edged veins and blackish longitudinal patches on the hindwing, 2 in the costal half and a broader one along the inner-marginal fold. From Pará. — f. **boliviana** *form. nov.* (190 b) from the Songo has a somewhat smaller cellular spot and the apex of the forewing is not white.

boliviana.

182. Genus: **Lychnuchoides** *G. & S.*

Antennae half as long as the costal margin. Cell of forewing very long and broad, $\frac{2}{3}$ of the length of the costal margin; hindwing at the anal angle lobate. Body stout, densely haired. The ♂ has an angular stigma, the upper part of which borders on the middle of the median, the lower on the lower median branch. MABILLE places here also *hiarbas* Cr. (= *ozias* Hew.) having been dealt with by us as *Ancistrocampta* on p. 879; (190 c).

L. saptine *G. & S.* (190 c) is a large, blackish-brown species with a darker stigma, a broad, ochreous-yellow, centrally hyaline transverse band; apex of hindwing yellow. Beneath the same, at the apex of the forewing lilac-grey; hindwing red-brown clouded with grey. Larger than the very similar *Ancistrocampta celsus* (171 a), the yellow band more irregular and the under surface different. Costa Rica, Panama.

183. Genus: **Nyctus** *Mab.*

Distinguished from *Carystus* by the long, horizontally porrect palpi; hindwing extended into a broad, obtuse lobe; at the base of the inner-marginal fold there is a very long hair-tuft; and on the median veins are also long, bent hairs partly extending beyond the margin of the wing and touching the abdomen.

N. crinitus *Mab.* is a magnificent, velvety black species with a very broad orange oblique band exhibiting proximally 3 angular projections (subcostally, on the lower median vein and on the inner-marginal vein), and being distally gnawed out at the lower cell-angle. Hindwing at the costal angle with an orange marginal line and fringes; the hair-pencil with a green reflection. Beneath the forewing is red-brown, the hindwing black with brilliant green veins. Expanse of wings: 52 mm. Brazil (Pebas).

N. triangularis *Kaye.* Above dark brown, costal margin and the larger inner-marginal half lighter. A cellular spot and 4 postdiscal spots yellowish hyaline as well as 2 subapical dots. Hindwing with 3 small spots in one line behind and below the cell. Collar golden yellow. Beneath very much lighter, especially the base of the hindwing. Expanse of wings: 42 mm. Trinidad.

184. Genus: **Lychnuchus** *Hbn.*

Antennae long, the long club exhibits a slender, long apex. The terminal joint of the ascending palpi is hidden. The anal angle of the hindwing is lobate, above it somewhat concave. The ♂ shows a bipartite stigma: a stripe on the central part of the median between the branches, another one on the lower median vein. We enumerate here only two species, the third: *celsus* F. (= *clarchus* Plötz) (171 a) which is inserted here by MABILLE, we have already dealt with in *Ancistrocampta* on p. 879. As to the synonymy of the species and genera there is still much uncertainty prevailing. Comp. also the genus *Lychnuchoides* (t. 190 c).

L. olenus *Hbn.* (190 c) is of a plain blackish-brown with a very broad orange discal band which is semi-diaphanous in its central part. Beneath the same, but the brown is slightly duller and more reddish. Widely distributed in South America: Brazil, Colombia, Bolivia.

L. pertica *Plötz* (190 c) resembles *Ancistrocampta celsus* (171 a), but the narrow discal band is white, only at the costal margin somewhat yellowish, and there are 3 white subapical punctiform spots. Beneath somewhat duller brown, otherwise the same. Palpi beneath ochreous. South America, habitat not exactly stated.

185. Genus: **Tisias** *G. & S.*

Antennae longer than the cell of the forewing. Terminal joint of the palp short. Forewing long with a bent costa; hindwing at the anal angle lobate. Body robust. Middle tibiae with spines. The ♂ has an angular stigma on the middle of the median and the lower median branch, a longitudinal stripe below it, and a₁' still longer one on the submedian.

T. myna *Mab.* (190 e). Blackish-brown, with a similarly coloured stigma, and 4 large hyaline white spots, 3 postdiscal ones and 1 cellular spot. Hindwing with a small cellular spot and 2 near the distal margin. Beneath lighter, the costal-marginal area behind the cell grey; the submedian spot is larger than above. Panama.

T. quadratus *H.-Schöff.* (190 d) has a double cellular spot, and only 2 postdiscal ones; on the hindwing there are 4 postdiscal spots and the cellular spot is absent. Body and bases of wings with a faint bluish-green reflection. Beneath the apical half of the forewing, and the hindwing are ferruginous-brown, the hindwing the lightest in the apical half, with the spots of the upper surface and a broad white anal angle of the forewing. Brazil.

186. Genus: **Themesion** G. & S.

The long antennal club exhibits a very long, reverted apex; last palpal joint short. Cell of forewing shorter than two thirds of the costal margin; the abdomen projects beyond the hindwing. Body very robust; middle tibiae without spines; posterior tibiae with 2 pair of spurs, the upper being very short.

certima. **Th. certima** Hew. (= *lebbaeus* Hew., *lota* Hew.) (190 e) is above rather similar to *T. myna* (190 e). Blackish-brown with 4 large, hyaline white discal spots and 2 small subapical spots. Hindwing with 1 or 2 small postdiscal dots. The under surface is lighter, in the middle of the forewing darker. The hindwing exhibits a dark dot at the cell-end, and 4 behind it, 2 of which are pupilled white. Panama to Venezuela.

nosedata. **Th. noseda** Hew. (= *brinoides* Mschlr.) (190 e). Above dark brown, towards the base with a slight violettish-brown tint, a white cellular spot and 3 postdiscal ones, the submedian one of which is the smallest. Hindwing with a white spot behind the cell. Fringes ochreous-brownish. Beneath the costal margin and apex of the forewing as well as the whole hindwing are violettish-grey, the disc and inner-marginal part of the forewing black, marked as above. Described from Surinam.

alda. **Th. alda** Plötz (190 d) is above blackish-brown, at the base of the costal margin of the forewing somewhat more reddish with 2 large discal spots, and 1 smaller one each behind and above them. On the hindwing there are towards the apex 1 to 3 small white spots which may also be entirely absent. Beneath the costal margin and apex of the forewing and the whole hindwing are greyish-brown, tinted violet, on the hindwing there are some small black punctiform spots. Brazil.

maroma. **Th. maroma** Mschlr. (190 d, e) is very similar, but the cellular spot is very much strangulated and farther remote from the spot below it, the submedian spot is yellowish, and there are besides 1 to 3 small subapical spots. Beneath darker brown than in *alda*, and mostly yet with a small white cellular spot on the hindwing. Surinam.

moeros. **Th. moeros** Mschlr. (190 f). Here the cellular spot is above divided into 2, and below the subapical spots there are yet 2 small punctiform spots farther towards the margin. Body, base of wings, and hindwings are haired olive-brown. Beneath the costal margin and apex of the forewing as well as the whole hindwing are deep dark green with fine black veins, the hindwing with a black cellular dot and 2 or 3 behind it. Proximal margin of hindwing blackish-grey. Described from Surinam.

orbis. **Th. orbis** G. & S. is smaller than *certima* (190 e), the discal spots ochreous-yellow, with one more submedian spot; the hindwing exhibits 3 postdiscal dots in one row. Beneath lighter, dusted with lilac. The species very much resembles *Carystoides sicania* which, however, is without the yellow submedian streak, the discal spots being also differently placed and only one subapical spot being present. It also greatly resembles *Turesis lucasi* and *theste* (190 f), but the short upper spurs of the posterior tibiae preclude their relationship to the genus *Turesis*. From Nicaragua.

187. Genus: **Turesis** G. & S.

Antennae $\frac{2}{3}$ of the length of the costal margin. Veins as in *Carystus* (p. 979). Body strong, middle tibiae bare, posterior tibiae with double, long spurs.

lucasi. **T. lucasi** F. (= *complanula* H.-Schäff., *yema* Plötz, *hebon* Mab., *silacea* Mschlr.) (190 f). Above like *Th. orbis*, the spots larger, more whitish; hindwing with only one yellowish dot. Beneath lighter, more reddish, the submedian spot of the forewing larger, more yellow. It somewhat resembles *Thr. salius* (191 e, f). Panama to Venezuela, Amazon, Brazil, Antilles.

theste. **T. theste** G. & S. (190 f) is similar, smaller; the 3 discal spots are combined forming an angular spot parted by the veins; a small subapical spot, the submedian spot absent; hindwing without any spots. Beneath lighter, more reddish, on the hindwing with a yellow cellular dot. Costa Rica.

brooksi. **T. brooksii** Weeks may belong hereto. Above dark brown with 3 white subapical dots, a white cellular spot and 2 postdiscal ones. Beneath black, spotted as above, at the costal margin and apex reddish-brown. Hindwing reddish-brown, in the basal and marginal areas darker with 2 white postcellular dots. Expanse of wings: 5 cm. Venezuela (Suapure), taken at the end of July.

188. Genus: **Megaleas** G. & S.

Different from *Turesis* only by the ♂ scent-scale spot: it extends from the rise of the upper median vein obliquely and interrupted somewhat before the middle of the submedian. Antennal club thick and long.

synna. **M. synna** G. & S. (190 e) is a very large species: above blackish-brown with a large, oblong, yellow cellular spot filling up the distal $\frac{3}{4}$ of the cell; behind it and below it a very large tripartite spot, and 3 small subapical spots. Hindwing with a cellular dot and 3 larger dots in the costal-marginal half behind it. Beneath lighter, more reddish. Costa Rica.

189. Genus: **Lycas** G. & S.

The antennae attain the length of the cell of the forewing; the club is long and slender. Cell of forewing of $\frac{2}{3}$ of the length of the wing and pointed at the apex. Body strong, middle tibiae spined. The ♂ has no scent-scales.

L. argenteus Hew. (191 a). Blackish-brown, base of forewing and proximal half of hindwing haired *argenteus*, ochreous-brown; in the disc there are 3 yellow hyaline spots in an oblique row, one of which is submedian; in the cell there is a distally concave spot, subapically 3 dots. On the hindwing the apical half of the costal margin and a submarginal spot are ochreous-yellow. Beneath the same, apex of forewing grey, anal angle spotted whitish. Hindwing silvery with a chestnut-brown band from the middle of the costal margin to the anal angle, being narrower or interrupted at the cell-end; distal margin red-brown. Fringes of hindwing dotted ochreous-brown. Mexico to Brazil.

L. godarti Latr. (= ceraca Hew.) (191 a) is similar, the basal half of the costal margin ferruginous- *godarti*, brown. Beneath in the basal third of the forewing blackish-brown, apex and costal margin more reddish, in the middle of the costal margin there is a yellow spot. Hindwing chestnut-red, at the distal margin lighter with 2 oblique silvery bands. Panama, Guiana, Brazil.

190. Genus: **Orphe** G. & S.

The long antennae reach to the cell-end, club slender; terminal joint of the palp short and hidden. Middle tibiae not spined. The ♂ scent-stripe extends obliquely from the rise of the lower median vein to the inner-marginal vein.

O. gerasa Hew. (= subcordatus Mab., milo Mab.) (191 a). Above black, scent-stripe silvery grey, *gerasa*, fringes brownish; forewing with a cellular spot and 4 postdiscal and 3 subapical small white spots. Beneath duller blackish-brown, at the distal margin and anal angle of the forewing as well as at the margin and in the disc of the hindwing tinted violet; before the margin of the hindwing with a black nebulous band beginning broad at the costal margin and dying away towards the proximal margin. Colombia, Amazon.

O. vatinius G. & S. entirely resembles the preceding except the stigma showing a very distinctly *vatinius*, undulate upper surface, whereas in *gerasa* it is smooth, only at the lower edge with a ridge-like elevation. Guiana, Amazon, Peru.

O. porius Mab. It was impossible to find a description for this name *porius*.

191. Genus: **Damas** G. & S.

Antennae and palpi as in the preceding genera. Hindwing at the anal angle somewhat prolonged and before it slightly concave. Body robust, femora very hairy and middle tibiae spined. The ♂ stigma consists of a triangular part in the angle where the lower median vein rises and a longitudinal stripe below it.

D. clavus Erichs. (= ampyx Mab., corope H.-Schäff., angulis Plötz, cervus Mschlr.) (191 h). Blackish- *clavus*, brown, with a grey stigma, an oblong, yellow-hyaline cellular spot, 3 postdiscal and 3 subapical ones, which may also be absent. Beneath the apical half of the forewing, and the hindwings are tinted violet. Panama to the Amazon.

192. Genus: **Orses** G. & S.

Distinguished by very long antennae of more than $\frac{2}{3}$ the length of the costal margin, with a long, slender club and a long reverted apex. Forewing with a slightly convex costa; in the ♂ the upper median vein rises far before the lower cell-end, in the ♀ close at it, the submedian is in the ♂ somewhat angular. Hindwing analwards prolonged. Middle tibiae without spines; in the ♂ a scent-scale stripe extends obliquely from the rise of the upper median vein to the lower.

O. cynisca Snsn. (= catina Hew., poyas Reak.) (190 f) is a very easily recognizable species. Above *cynisca*, black, in the ♂ with 3 yellow discal spots situate close together, in the ♀ with a white oblique band; fringes and margin of the hindwing apically broad white, in the ♂ more yellowish-white. Beneath the same, but the discal spots are prolonged yellow as far as the costal margin. Distributed from Mexico to Colombia and Brazil.

O. iricolor G. & S. (191 b) is above similar, but on the body and base of the wings haired bluish- *iricolor*, green, particularly on the proximal margin of the hindwing. The under surface is quite different: on the hindwing with 2 oblique, parallel, sulphur-yellow bands from the apex to the distal margin and from the basal third of the costal margin to the anal angle; the hindwing is rather long extended. Venezuela.

O. itea Snsn. (190 f, g) above entirely resembles *cynisca* (190 f), but the very large, in the ♂ yellow, *itea*, in the ♀ white discal spots are of a rounder shape. Beneath very easily recognized by the light grey, black-veined wings, the hindwing showing 2 light yellow bands at the apical distal margin and from the base of the costal margin to the anal angle. Brazil.

193. Genus: **Oenides** Mab.

Antennae long and slender, with a long, pointed club; palpi appressed to the face, ascending, with a short terminal joint. Forewing triangular with a straight distal margin; cell shorter than two thirds of the costal margin. Hindwing rounded off with an oblique distal margin, at the anal angle not lobate. Posterior tibiae with long, slender spurs.

vulpina. **O. vulpina** Fldr. (190 g). Upper surface black, basally more brown, in the upper half of the distal margin lighter blackish-grey, with small white cellular and 3 discal spots, as well as 3 subapical dots; the larger proximal half of the hindwing is of a bright brownish red. Beneath duller blackish, on the hindwing with a white band from the middle of the costal margin to the anal angle; costal margin basally yellowish-white. Colombia.

194. Genus: **Chloeria** Mab.

Antennae and palpi as in *Oenides*. Apex of forewing prolonged, cell longer than in the preceding; distal margin above the anal angle concave; the middle radial vein rises almost from the same place as the lower; Distal margin of hindwing likewise somewhat concave and the anal angle lobate. Posterior tibiae only with terminal spurs.

psittacina. **Ch. psittacina** Fldr. (190 g, h). Above blackish-brown, on the forewing subapically lighter, above it with 4 small, very oblong hyaline spots, at the cell-end and below it with a very large, double hyaline spot and a greenish-yellow, semi-transparent, postdiscal spot on the hindwing; the submedian area of the forewing and the cell of the hindwing are greenish-yellow; fringes analwards white. Beneath the hindwing and a very large subapical spot of the forewing are yellowish-green, the hindwing with black veins, the cell in the lower half and the anal fold broad black. Colombia to South Peru.

195. Genus: **Thracides** Hbn.

The reverted antennal apex is very long. Hindwing at the anal angle very much prolonged, body very robust; middle tibiae in *phidon* spined, in the other species bare. The ♂ shows a long stigma extending from the rise of the upper median vein to the middle of the inner-marginal vein. Several species are without it.

phidon. **Th. phidon** Cr. (191 b). Above black, basally and on the body metallic bluish-green with 3 large, white, discal hyaline spots and sometimes a small submedian spot. Beneath red-brown, base of costal margin on the forewing and base of hindwing white; the discal spots of the forewing are broadly connected with the white anal area. Panama to Colombia, Guiana, Brazil.

peratha. **Th. peratha** Plötz (191 b) is above almost quite metallic greenish-blue, on the forewing with a very large, bipartite discal spot, the lower distal apex of which almost touches the margin. Beneath somewhat lighter more brownish, the anal part of the forewing broad white, the cell bluish-green, palpi beneath dark ferruginous-brown. Bahia.

luda. **Th. luda** Hew. (= *hundurensis* Mab., *nealus* Plötz) (191 c) has no stigma; the blue is less bright, the cellular spot large and double. Body beneath and legs beneath darker. Honduras to Guiana.

molion. **Th. molion** G. & S. (191 b, c) has only 2 spots, one in the cell and one between the median veins, the submedian one being absent; below the apex there are 2 small subapical dots. The under surface is lighter, the anal angle of the forewing light, the hindwing is whitish at the base of the costal margin. Mexico.

bajula. **Th. bajula** Schs. Coloured as *molion* (191 b, c), with 2 semi-transparent white spots, that in the cell being distally gnawed out, parted by a fine line, the second extending below the cell-end to below the lower median vein, being prolonged below the latter to the distal margin. Base of hindwing with metallic blue hair. Beneath brown, the basal third of the costal margin of the forewing white, at the base with some metallic blue scales, at the apex strewn with yellow; at the anal angle there is a large white spot. Hindwing in the basal third of the costal margin white. Expanse of wings: 41 mm. Novo Friburgo.

phidonides. **Th. phidonides** Mab. is perhaps only a form of *molion* (191 b, c) and resembles *bajula* from which it differs by the presence of 3 subapical dots. Beneath there is a bluish-white dot below the white costal margin of the hindwing. Ecuador.

joannisii. **Th. joannisii** Mab. (191 c). The jet-black wings show a metallic greenish-blue reflection, distally to the scent-stripe with 3 hyaline white postdiscal spots in a straight line, the stigma itself being whitish, bordered with black and tripartite. Beneath the wings are suffused with purple at the apex, costal margin and disc of the forewing as well as in the disc of the hindwing, whereas here the costal and proximal margins remain black. Fringes white. Described according to a ♂ from Panama (Chiriqui).

panimeron. **Th. panimeron** Drc. is above uni-coloured deep indigo-blue, in an oblique light in the inner-marginal part of the forewing and the basal half of the hindwing metallic ultramarine-blue and opalescent green. Fringes white, towards the apex brownish. Beneath dark greenish-indigo, apex of forewing, and the hindwing with copper-reddish scales. Proximal margin of forewing brown, in the cell a metallic blue stripe; at the base of

the median a greyish-brown, black-haired scale-stripe. Palpi and collar reddish-orange. From Bolivia (La Paz).

Th. cincia *Hew.* (191 c) resembles *molion* (191 b, c), but it is much darker and duller blue at the *cincia*, base, and the costal margin of the hindwing beneath is not white at the base; the ♂ exhibits long hair below the submedian.

Th. braescia *Hew.* is also very much like *molion*, but the bases of the wings are quite brown, without *braescia*, any blue nor subapical dots. Pará.

Th. uridon *Dyar* is above black, on the body and bases of the wings bright metallic blue; forewing *uridon*, with a white, distally pointed cellular spot. Beneath dark greyish-brown, the costal margins of both wings basally white, on the forewing an oblique white band, widened below, the ground-colour before and behind it darker; a subapical, bent, dark shade. Hindwing with bent dark median and postmedian bands. Expanse of wings: 49 mm. Mexico (Guerrero).

Th. hyas *Mab.* is above brown, at the thorax and bases of the wings metallic blue; the forewing *hyas*, shows 4 white hyaline spots beside the long scent-stripe: 2 dots in the cell end at the opposite edge each, two medium sized spots behind it, and a subapical dot. Fringes dirty yellow. Under surface red-brown, at the apex and distal margin of the forewing lilac; below the apex there is a brown band extending down to the lower median vein. The hindwing is lilac with 2 red-brown bands, one at the costal margin, the second in the middle; proximal margin and fringes are yellow. Expanse of wings: 43 mm. Cauca Valley.

Th. cilissa *Hew.* (191 c). Above black, body, basal half of forewing and almost the whole hindwing *cilissa*, metallic bluish-green; the forewing exhibits in the ♀ 3 white discal spots, in the ♂ only 2. Beneath light red-brown, the anal part of the forewing very broad white, the cell green. On the hindwing several green spots arranged band-like. Amazon.

Th. nanea *Hew.* (191 d as *nannea*) is above similar though much darker, the spots of the forewing *nanea*, smaller, hindwing without any green. Beneath the inner-marginal part of the forewing and the whole hindwing are deep blackish-brown with a violet reflection, almost without any marking; cell of forewing and the space behind it deep metallic greenish-blue. Palpi below orange. From Maranhão.

Th. henricus *Stgr.* (= *mardonius* *Mschlr.*) (191 d) is above without any discal spots, uni-coloured *henricus*, blackish-brown with a blue body and base of the wings. Beneath brown, the forewing at the anal angle yellowish, the hindwing at the distal margin broad bright orange, the fringes ochreous. Panama.

Th. aroma *Hew.* (191 d) is above like *henricus*, but the fringes are grey. Beneath the forewing is *aroma*, broad whitish at the anal angle. The costal area is greenish-blue in the basal two thirds. Hindwing in the disc with a dark transverse band. Costa Rica to the Amazon.

Th. seron *G. & S.* (= *saron* *Mab.*) (191 d) shows on the dark brown upper surface 2 oblique post-*seron*, discal spots, the cellular spot is absent. Beneath besides with a submedian spot. Hindwing monotonously brown, at the base green. Fringes ochreous-yellow. Honduras.

Th. aurifer *G. & S.* (191 d). Above blackish-brown with a grey stigma. Forewing in the distal *aurifer*, half steel-blue with a double cellular spot and 3 large white postdiscal spots, above them 2 small ones and angularly to them 3 subapical ones. Under surface red-brown, forewing spotted as above; hindwing with 7 golden spots: one in the cell-end and 6 in a row behind it; the proximal margin is ferruginous-brown, the eyes are bordered with red-brown. Costa Rica.

Th. theodora *Ehrm.* we only place here on account of a certain resemblance to *aurifer*; it is described *theodora*, as a „Pamphila“. Chestnut-brown with 6 yellowish subapical spots and 2 cellular hyaline spots, the upper being triangular, the lower quadrangular; a submedian, brownish, longitudinal patch, above it a golden yellow spot. Hindwing with 7 golden, oblong spots from the apex to the proximal margin. Fringes light yellow. Beneath as above, but instead of the subapical spots there is a broad white band tinted red-brown at both its ends; anal angle dirty white. Hindwing subcostally white, in the cell a black spot, instead of the golden spots a broad white band; anal part reddish-white. Expanse of wings: 48 mm. Venezuela (Suapure).

Th. polles *G. & S.* (191 e). Brown; on the median of the forewing a narrow cellular spot, 3 larger *polles*, ones obliquely behind it; 3 subapical, small, yellow hyaline spots. Under surface lighter, anal angle yellowish; hindwing grey with 3 indistinct, whitish discal spots. Nicaragua to Brazil.

Th. placens *Btlr.* (= *laurens* *Mab.*) (191 e). Above dark brown with a cellular spot and 4 behind *placens*, it, the uppermost being very small; 2 subapical small spots. Base of wings and the hindwing almost entirely ferruginous-brown. Beneath purple-brown, bases of the costal margin and of the hindwing broad yellowish white, the anal angle ferruginous-brown. Panama to Colombia.

Th. salius *Cr.* (= *antoninus* *Latr.*) (191 e, f) is distinguished by the light violet basal area of the *salius*, hindwing, which is concavely defined towards the broad, brown marginal area, in the latter there are 2 or 3 small light spots. From Mexico through the whole of South America to Argentina and Trinidad. — In f.

- matthiolus*. **matthiolus** *H.-Schüff.* (193 a) showing a more intensely green reflection the marginal area of the hindwing as well as the basal area are darkened blackish-grey, both scarcely contrasting with each other. Colombia.
- longirostris*. **Th. longirostris** *Sepp* (= *telegonus* *Hbn.*) (191 f) resembles *salius*; the cellular spot is much larger, C-shaped, the spot of the hindwing just as variable as in *salius* and it may disappear altogether. Very common from Mexico to Brazil and in Trinidad.
- orusca*. **Th. orusca** *Schs.* is above dark brown with a small semi-hyaline cellular spot, a quadrangular submedian spot, a large, oblique one between the median veins and 3 smaller spots above it; 3 subcostal punctiform spots; on the hindwing a subapical row of 3 yellowish-white spots. Beneath the forewing is brown, at the proximal margin grey, in the basal half of the costal margin Isabel-coloured; before the small subapical spots there is a reddish-brown spot, the apex is parted by a lilac stripe. The hindwing is at the base and proximal margin broad lilac, the basal part bordered by a light, inwardly curved line; costal margin apically olive-brown; before the proximal margin as far as the anal angle is a light brown area. Expanse of wings: 40 mm. Petropolis.
- hermesia*. **Th. hermesia** *Hew.* (191 e) is undoubtedly a distinct species, in which the anal angle of the hindwing is more extended in a flap-like fashion. On the hindwing beneath the light yellowish-brown basal part very gradually, without a distinct delimitation, passes over into the violettish-brown marginal part in which there are 1 or 2 small light spots. Ecuador, Colombia.
- fischeri*. **Th. fischeri** *Hew.* (191 f) is likewise a good species. Above little different from the preceding; the hairing of the body and of the bases of the wings is olive-brown; fringes of hindwing whitish. Beneath the costal margin and apical half of the forewing, as well as the hindwing with the exception of the anal angle, are of a peculiarly dull bluish-green with fine dark veins and thereby not to be mistaken for any other species. Colombia, Rio de Janeiro.
- chiomara*. **Th. chiomara** *Hew.* (191 f) resembles *salius* (191 e, f), but it differs by the apex and costal margin of the forewing and hindwing beneath being reddish-brown except the anal angle. Panama to the Amazon.
- nanneta*. **Th. nanneta** *Plötz* (191 e) is above brownish-black with 2 white cellular spots, 2 larger quadrangular spots below and behind them, and 3 small subapical spots. The hindwing also exhibits 2 white spots behind the lower cell-end. Beneath the same, but at the costal margin and apex of the forewing and in the marginal area of the hindwing reddish-brown. Rio de Janeiro.
- lesueuri*. **Th. lesueuri** *Latr.* (= *caesena* *Plötz*) (191 f) differs above by a submedian spot of the forewing and only one postdiscal dot of the hindwing which, however, shows another one in the cell. Beneath on the hindwing the apical half of the distal margin is lighter violettish-brown. Brazil.
- haworthiana*. **Th. haworthiana** *Swsn.* (190 h). Above almost like *O. cynisca* (190 f), but on the body and bases of the wings deep metallic green and of a different shape of the wings. Beneath lighter, more violettish-brown; hindwing darker with 2 green transverse stripes converging somewhat towards the anal angle. From Brazil, apparently very rare.
- ethoda*. **Th. ethoda** *Hew.* (190 h) is a very conspicuous insect; basal halves of the wings and fringes orange-brown, discal spots very large, yellow, also the hindwing with 3 postdiscal spots and one cellular spot. Beneath on the apically orange-brown hindwing there is a very broad, silvery white longitudinal band. Rio de Janeiro.
- biseria*. **Th. biseria** *Schs.* Above dark brown with a long, light grey scent-stripe on the submedian. In the cell of the forewing there is a double, long, hyaline white spot parted by a dark longitudinal line; below it a large one, a small, distally concave one above it, and 3 small subapical ones below the costal margin. Hindwing light ochreous-brown, costal margin broad violettish-brown; at the cell-end a small light spot, 3 postdiscal ones behind it. Beneath dark brown, forewing spotted as above; on the hindwing the spots are more distinct, in the disc strewn with violet. Expanse of wings: 37 mm. Trinidad.
- stupenda*. **Th. stupenda** *sp. nov.* (190 h). Above blackish-brown, hairing of the body and the base of the hindwing in a certain exposure to light with a green reflection. Beneath the bases of both wings are dark brown, on the forewing in the shape of a streak prolonged along the median and transverse vein; apical part somewhat lighter reddish-brown, between canary-coloured; on the hindwing 2 basal thirds are dark brown, the distal third being yellow; between the two colours in the disc of the wing 4 silvery white spots on the yellow ground; the middle of the distal margin is narrowly brownish. 1 ♂ from the Rio Aguaca (Colombian Western Cordilleras), taken at an altitude of 2000 m; in the Coll. FASSL.
- lotana*. **Th. lotana** *Btlr.* (193 a) is above purple-brown, towards the base blacker and haired greenish as on the body. Forewing with a white cellular spot, 3 postdiscal ones and 3 subapical ones, hindwing with 2 pale yellowish spots and yellow fringes. Beneath the distal margin of the forewing is lighter. The hindwing is yellow, at the base, costal-margin and a subapical costal-marginal spot black like the proximal and distal bordering of the hyaline spots; an antemarginal, blackish band. Amazon (Tocantins).
- xanthura*. **Th. xanthura** *G. & S.* (190 h) resembles *Rhithon anthracina* (185 h), but it has no scent-stripe, a longer antennal club and yellow anal-angular border of the hindwing; the yellow as of a very variable extent, changing from a narrow yellow marginal line to a large yellow anal spot. Under surface reddish-brown, the discal area of the forewing as far as the proximal margin blackish-brown, behind the cell tinted purple, the distal margin analwards narrowly yellow. The hindwing is in the middle of the cell broadly purple, at the distal margin and anal angle broadly yellow, the submedian fold striped blackish-brown; fringes of hindwings yellow. Honduras, Panama, Colombia.

196. Genus: **Alera** Mab.

Palpi and antennae as in *Thracides*. Apex of forewing somewhat stunted, distal margin running straight down to the middle radial vein, then very oblique to the anal angle; the two lower subcostal veins forked. Posterior tibiae with long hair.

A. furcata Mab. The very long, blackish-brown forewing shows in the middle an oblique band of *furcata*, 4 hyaline spots: the first at the costal margin yellow, the 3 others white; behind the lower cell-angle there is a smaller one, farther distally; fringes brown. Hindwing without spots, with yellowish fringes. Base of forewing beneath blackish, apex lilac-white. Hindwing at the base greyish-yellow, otherwise brownish-violet with a lighter part at the distal margin. Body above metallic blue. Expanse of wings: 56 mm. São Paulo.

197. Genus: **Perichares** Seddr.

Antennae long with a very long club and very long apex. Veins not different from the usual veins. Hindwing prolonged at the anal angle. Body strong; middle tibiae with short spines. The ♂ exhibits a strong scent-scale stripe from the rise of the upper median vein to the middle of the submedian.

P. corydon F. (= phocion F., dolores Reak., adela Hew., marmorata Seddr.) (192 a). This very *corydon*, common and widely distributed species is above brown with yellow hyaline spots, and beneath in the apical part of the forewing and on the hindwing marbled lilac; fringes distinctly speckled. Abdominal end beneath ochreous-yellow. From Mexico to Brazil, in the Antilles, Cuba, Jamaica, Hayti.

P. tripuncta sp. nov. (191 g) is above dark brown, at the cell-end above the median a narrow hyaline *tripuncta*, spot, below it and distally to it a V-shaped one, above it another small, quadrangular one. Beneath somewhat lighter, hindwing brown without any markings. Described according to 3 ♂♂ in the Coll. SEITZ from Honduras and Southern Brazil.

P. heroni Kaye. Above deep chocolate-brown, at the apex of the forewing narrowly white; in the *heroni*, cell a yellow spot strangled in the middle, below it 2 wedge-shaped spots; behind the cell-end another small, yellow, punctiform spot. Beneath the apex of the forewing and the costal margin are reddish-lilac, the rest dull black with the yellow spots. Hindwing reddish, suffused with brown, with 2 small yellow postdiscal dots. Expanse of wings: 48 mm. Trinidad.

P. trinidad Luc. (192 a) differs so much from *corydon* (192 a) with which it was confounded, that *trinidad*, we must better consider it to be a distinct species, at least as an especial insular form (from Cuba). From *corydon* it differs by only 3 spots of the forewing, a hook-like bent spot in the cell and 2 behind it. Fringes speckled; beneath not different from *corydon*.

P. agrippa G. & S. (191 g) is blackish-brown, at the base green, the stigma grey; 3 postdiscal white- *agrippa*, hyaline spots, a transverse one between the median veins and a smaller one behind it, before it in the cell a long, oblique, curved spot. Beneath somewhat lighter, costal margin of forewing apically lighter whitish; hindwing scantily dusted with grey, fringes ochreous. Nicaragua.

P. lotus Btlr. (192 a). The ♂ is blackish-brown, fringes of hindwings whitish ochreous. Body and *lotus*, bases of wings green; in the cell of the forewing there is a large, yellowish, distally concave spot, a triangular spot behind it, stigma grey. Beneath the same, apex of forewing, and hindwing marbled lilac-grey. The , has white spots, beside the cellular spot a large one between the median veins and one small spot each below and above it. Mexico, Panama, Colombia, Venezuela, Ecuador, Trinidad.

P. luscinia Plötz (192 c) resembles *corydon* (192 a), but differs by the absence of the white spot of *luscini*, the forewing above the submedian and by the hindwing beneath, where the dark spots flow together forming transverse shades which rest almost rectangularly on the submedian fold. South Brazil, known from the Colony of Blumenau in Sa. Catharina.

P. lindigiana Fldr. (= colenda Plötz) (191 f) is very easily recognizable by the broad orange proximal *lindigiana*, margin and anal angle of the hindwing. Forewing with 3 large white discal spots which are beneath prolonged to the costal margin. Apex of forewing, costal margin, and the hindwing lilac, mixed with brownish, with 3 brown transverse bands and a broad similar marginal band. Fringes of hindwing at the apical part yellowish-white. From Colombia and Venezuela.

P. crotona Hew. (= elisa Plötz) (191 g) has above 2 very large yellow discal spots and one smaller *crotona*, one, which are situate close together; above the submedian there is mostly yet a yellowish longitudinal patch which turns a large white spot on the under surface, extending almost to the proximal angle. Hindwing violet with large brown spots and a broad brown margin. Colombia, Brazil.

P. anitta Plötz (192 c) is rather similar to *corydon* (192 a) above, but in the apical part of the forewing *anitta*, there are 5 or 6 minute hyaline spots. Beneath the hindwing is uniformly coloured lilac-grey, only the cell and anal lobe are filled up with dark brown and before the margin are some narrow, small internerval spots. From Brazil.

butus. **P. butus** Plötz (192 b) is blackish-brown, towards the base and on the body green, with a small yellow cellular spot, a subapical spot and one behind the lower cell-angle. Beneath the hindwing is dark green with black dentate bands and spots, at the distal margin and proximal margin violettish-grey; on the forewing the cellular spot is enlarged and there is a green spot before the subapical spot. From Surinam.

triplaya. **P. triplaya** Schs. is above dark brown, on the body and bases of the wings metallic dark-blue; in the cell of the forewing there is a quadrangular, hyaline yellow spot, a triangular one between the median veins and a smaller quadrangular one above it; fringes at the anal angle yellowish. Hindwing unmarked with yellow fringes being dark brown at the anal angle. Beneath the same, above the cellular spot there is a yellow costal-marginal one; from the cell-end to the apex dusted with lilac. Hindwing at the costal margin, base and two thirds of the proximal margin light brownish, behind it dark brown, growing lighter towards the distal margin, before the margin with a lilac nebulous band. Expanse of wings: 49 mm. Castro (Paraná).

198. Genus: **Talides** Hbn.

Distinguished from *Perichares* by the broader, round shape of the wings, on the forewing a less oblique discocellular. Stigma the same, very distinctly developed.

sergestus. **T. sergestus** Clerck (= sinon Cr.) (192 b). Above dark brown, on the body and wings basally haired ochreous. Forewing with a cellular spot, 3 postdiscal and 3 subapical spots; hindwing with a small, round hyaline spot behind the cell; fringes orange-ochreous. Under surface suffused with red-brown, analwards on the hindwing before the fringes narrowly orange. The ♀ has much larger spots and one submedian spot besides, which may occasionally also occur in the ♂. — f. **adjunctus** Plötz (192 d) is above and beneath much darker. Mexico to Brazil and Trinidad.

199. Genus: **Pseudosarbia** Berg.

As the name indicates, the genus contains exact copies of the genus *Sarbia* Wts., from which, however, it is separated by the veins and very distinctly by the structure of the antenna the club of which is not reverted like a hook, but stretched forward like a fusiform knob. The larvae are quite different, too. All the species known live in Brazil and Argentina.

phaenicola. **P. phaenicola** Berg. (193 a) is such a true copy of *Sarbia pertyi* or *spixii* (164 f) flying in the same district that it is impossible to distinguish them in the open air. Both species have the same size, red ends of the bodies and the yellow, Y-shaped macular bands in the forewings. They chiefly differ by the patagia showing in the *Sarbia* a lemon-coloured, in the *Pseudosarbia* a red middle streak. Besides *phaenicola* has the head and collar as scarlet as *Sarbia*, but the end of the abdomen is decidedly fiery red or miniate. — The larva is unicoloured green, also the head which shows a shaggily yellowish-green haired face. The thoracal segments of the larva are also bristly haired. South Brazil and Argentina.

elana. **P. elana** Plötz (192 b as *elanus*). Above black with white fringes, a tripartite discal spot and a quinquepartite subapical spot of the forewing and a white postdiscal band of the hindwing; apex of abdomen white. Beneath the same, but the hindwing shows yet a yellow longitudinal band above the median, and the discal spot of the forewing is continued yellow to the costal margin. From Brazil (Chapada).

mitella. **P. mitella** Plötz (192 c) is very much like *elana*, smaller, of a more brownish ground-colour; fringes and the band on the hindwing are more yellowish, the latter beneath quite yellow and continued almost equally broad to the costal margin; the yellow longitudinal ray is absent. Apex of abdomen beneath ochreous-yellow. Brazil (Chapada).

200. Genus: **Pyrrhopygopsis** G. & S.

Antennae and palpi shaped as in *Perichares*. Cell of forewing attaining not quite two thirds of the length of the forewing; the middle radial vein at the base very much bent down and rising near the lower one. The genus is placed to the *Hesperinae* by MABILLE, but as the authors quite correctly recognized, undoubtedly belong to the *Pamphilinae* in the propinquity of *Thracides* and *Perichares*. In the exterior some species entirely resemble the *Pyrrhopyge* (p. 837—840, t. 162) from which they are immediately discernible by the antennae.

socrates. **P. socrates** Mén. (165 b, c) entirely resembles a *Pyrrhopyge*, above black with white fringes; head and anus red. Beneath the apical half of the forewing and the larger costal-marginal half of the hindwing except the black inner-marginal part are bronze-green with black veins. Brazil.

oratus. **P. oratus** Drc. (= *aviola* Mab., *socrates* Stgr.) (165 c) is above lustrous steel-black; beneath like *socrates*, but the basal area of the hindwing broad white. Head, palpi and anus red, fringes white. Panama to Peru.

P. igniculus *Drc.* is closely allied to the preceding species from which it differs by the reduction of the white basal area on the hindwing beneath, consisting only of a white spot above the costal vein and some white scales at the lower edge of the cell. From Peru (Pozuzo).

P. caninus *Drc.* is likewise closely allied to *oratus* (165 c), but coloured lighter, with a white border of the hindwing before the white fringes. Beneath the costal margin is white from the base to behind the middle of the cell. Head, palpi and apex of abdomen red, like the anterior hips and pectoral hair-tufts. Colombia (Rio Meta).

P. tenebricosa *Hew.* (165 c) likewise greatly resembles the preceding; above coloured the same as the preceding. Beneath of a more yellowish tint, with a yellowish basal area of the hindwing as far as the cell-end, gradually passing over into the bronze-green tint, being not so distinctly defined as in *oratus* (165 c). Shoulders red-brown. Peru.

P. lugubris *Drc.* Above uni-coloured jet-black with white fringes which, towards the apex on both wings and at the anal angle of the hindwing, are smoked grey. Beneath both wings are dark green, with black veins, the proximal margins on both wings blackish brown. Head, palpi and legs are black, posterior tibiae and sides of the chest with red-brown hair-tufts, abdominal end likewise red-brown. Bolivia (La Paz).

P. subvirescens *Schs.* Above bluish-black, fringes of the forewing apically brown, analwards whitish, fringes of the hindwing yellow. Beneath olive-green, with black veins, on the forewing the lower half of the cell and the proximal margin as far as the upper median vein are bluish-black, on the hindwing the inner-marginal part. Palpi red except the black terminal joint; the last 3 abdominal rings and the anus are red. Expanse of wings: 43 mm. Castro (Paraná).

P. quispica *Plötz* (= *reedii* *Weeks*) (165 c) differs from the preceding by the ground-colour above being more brownish-black, and the fringes orange-red or yellow. Beneath as *socrates* (165 b, c). Peru and Bolivia.

P. camposa *Plötz* (166 b, c) is above greenish steel-blue with whitish fringes and red anus. The under surface is of a bright green, the costal margin of the forewing yellow, the proximal part black; the middle of the hindwing is crossed by a broad black band, the inner-marginal part is likewise broad black, towards the base with a green spot in it. Brazil.

P. maraviha *Foetterle* (165 b as *camposa*) very much resembles *camposa*, but easily discernible by red shoulder-covers and beneath by the absence of the yellow costal stripe of the forewing; the colour of the hindwing is more golden yellow, and in the steel-blue inner-marginal part there are 2 oblong spots of the ground-colour. South Brazil.

P. cleantes *Latr.* (165 d as *cleanthus*). Above steel-black with 2 white discal spots, and on the hindwing white fringes being red at the anal angle. — f. **apicalis** *H.-Schäff.* is only a form of it with very small spots. Brazil. — f. **romula** *Drc.* (165 d) probably also belongs hereto and has larger, confluent, white discal spots. Colombia.

P. telmela *Hew.* (192 c) has a much more extensive white discal band, since beside the spots of the preceding there are yet a quadrangular cellular spot and a submedian spot; in addition often yet a distally remote 5th spot and a subapical one; these forms belong to f. **ochrope** *Plötz*. Brazil (Pará).

P. xanthothrix *Mab.* Sooty black with a violet reflection, forewing at the base lighter. Fringes yellow, at the apex of the forewing and anal angle of the hindwing blackish. Under surface as in the following *agaricon*. Shoulders anteriorly bordered with red, bases of palpi spotted red; the two last abdominal rings are margined with red, abdomen laterally spotted red. Expanse of wings: 50 mm. Peru (Hunyabamba).

P. agaricon *Drc.* (161 a) is above dark purple-brown, body and basal third on both wings tan-coloured. Beneath golden lustrous olive-green, with black veins, in the proximal part of the forewing and at the proximal margin of the hindwing brownish-black. Colombia.

5. Subfamily: Megathyminae *Mab.*

We append here this group of very much deviating species to the Hesperids, in order not to conflict with the opinions expressed in the works we have hitherto followed in general (especially *MABILLE's* Catalogue of the Hesperids and *WYTSMAN's* Genera Insectorum), which might prejudice the utility of both works. We remark, however, that the *Megathyminae* have, especially of late, been often quite correctly regarded as a separate family. A work as the „Macrolepidoptera of the Earth“, serving essentially a practical use has its main point more distinctly there where the single groups are to be inserted than in the rank that may be attributed to the single groups. We therefore do not try to correct *MABILLE*.

The head of the *Megathyminae* is much smaller than otherwise in the Hesperids. Antennae thick and fixed with a stout club and a very short point on it. Body long and stout. Middle and posterior tibiae with a pair of very short terminal spurs. Veins as in the last genera: the middle radial vein of the forewing at the base very much bent downward and nearing the lower. Peculiar, hairy insects externally reminding us of the *Castaia*. The larvae, as far as they are known, live in the interior of plants.

1. Genus: **Aegiale** Fldr. *Acentrocne* Scddr.

From the following genus only separated by 3 insignificant, morphological differences: the so-called *pulvillus* or „cushion“ on the ventral side of the last tarsal joint is strongly developed, forming a globular convexity. The 2nd palpal joint is long and uniformly narrow, the 3rd very short, conical, somewhat pointed; the basal covering of the palps consists of large, triangular scales, being towards the apex entirely covered by the long, rough hairing. On the ♂ forewing the upper median vein is at its base not bent down and nearing the lower. Only 1 species:

hesperiaris. **A. hesperiaris** Wkr. (= *kollari* Fldr., *agavis* Blasquirt) (193 c) is a large, monstrous insect very much like a *Castnia*. Above light fox-coloured, postdiscally somewhat paler with 3 whitish subapical hyaline spots, a black marginal band, postmedian subcostal spots and a dentate antemedian oblique band; hindwing with a blackish-brown border, an indistinct nebulous band at the cell-end. Beneath the hindwing is grey, with thick whitish hair and 2 or 3 indistinct blackish dentate lines; forewing lighter yellow than above. Mexico. The larva lives in the stalk of Agaves and is eaten by the Indians.

2. Genus: **Megathymus** Scddr.

The genus contains somewhat smaller, not so monstrous species. The wings in several species are covered with hair partly standing vertically on the surface of the wings. The *pulvillus* is not developed, only forming a short, conical projection between the terminal claws. The 2nd palpal joint is short and obtuse, the terminal joint not conical, obtusely rounded off; the scaling of the palpi is only intermixed with few hairs. The upper median vein is in the ♂♂ very much bent downward at the base and nearing the lower. The ♂♂ fly wildly and timidly about in the hot sunshine on sandy, hot places.

neumoegeni. **M. neumoeni** Edw. (= *aryxna* Skinn.) (193 b) above entirely resembles *cofaqui*, but on the forewing it exhibits yet a spot above the middle of the submedian, and instead of the marginal band a more proximally removed antemarginal band. Beneath the same, though greyer. Arizona, South California to Mexico. — f. *stephensi*. **stephensi** Skinner is above greyer in the colour, the yellow spots are distinct, especially the cellular spot. California.

aryxna. **M. aryxna** Dyar is extremely similar to the preceding and often also only differs by variable characters, so that only a precise examination of the genitals affords a guarantee: the distal valval end is shorter and obtuser than in *neumoegeni*, the processus basalis at the beginning much broader, the distal spining of the penis quite different, consisting only of 3 or 4 minute teeth at the distal edge, in *neumoegeni* on each side with a row of 5 or 6 teeth. *aryxna* is generally much larger, the spots are mostly larger, flown together to a band, the 2nd spot from the the proximal angle is proximally wedge-shaped; the yellow basal hairing is much less extensive; the under surface of the hindwings is darker, less abundantly strewn with white. From South Arizona.

polingi. **M. polingi** Skinner looks quite different, more like *A. hesperiaris* (193 c) and is above bright orange-brown with a black distal margin being broader at the apex, a large black subapical spot and a large, irregular discal spot. Hindwing bordered with black, before it with a broad, orange-brown band not quite reaching to the costal margin nor to the proximal margin. Basal areas of both wings orange-brown. Beneath the yellow colour is subapically whitish. The hindwing is grey with an irregular whitish band parallel to the costal and distal margins; in the middle of the wing 2 whitish spots, the lower being much larger. Expanse of wings: 44 mm. Arizona.

yuccae. **M. yuccae** Bsd. & Lec. (193 c, d) is a larger species; above brown, basally more intensely haired olive, with a yellow cellular spot and a band of 3 spots being removed far towards the margin and analwards; 3 or 4 subapical and farther distally below them 2 more whitish hyaline spots. In the ♀ the postdiscal band is much broader and united with the cellular spot, with another submedian spot, and the hindwing shows a yellow postdiscal band. Fringes of forewings grey, of hindwings yellow, speckled darker. Beneath more grey, on the forewing apically and the whole hindwing strewn lighter, the hindwing with a large, light costal-marginal and anal-angular spot. South Carolina, Georgia, Florida. — The larva is bone-coloured with a lighter lateral and greenish dorsal stripe; it lives in Yucca and changes in an inwardly white-spun cocoon into a white pupa. — f. *coloradensis* Streck. (= *navajo* Skinn.) is a scarcely different, smaller, less dark form from Texas, Colorado, Arizona.

cofaqui. **M. cofaqui** Streck. (193 b) is easily distinguished from *yuccae* by a much broader, yellow discal band cohering with the costal spot, by a short, squat shape of the wings, and by 4 white spots on the hindwing beneath which is strewn with grey, one at the anal angle, 2 at the costal margin and one in the cell. Hitherto only one ♀ seems to be known. Georgia; Florida.

ursus. **M. ursus** Poling seems hitherto only to be known in 2 specimens. Above brown with 3 yellowish-white subcostal spots and a band of 5 large orange spots from here to the proximal margin and a similar spot

near the cell-end. Hindwing without spots, with white fringes. Beneath the hindwing shows 2 white costal-marginal spots and 4 more in one line behind the middle. South Arizona (Pina County).

M. streckeri *Skinner* is very much like the preceding *ursus*, but of a black ground-colour and the *streckeri*. marginal band of the hindwing is absent. Colorado, New Mexico, Arizona. — f. **texana** *Barn. & Mc D.* (= *cofa- texana*, *qui auct.*) from South Texas differs little, the ground-colour being browner, the spots more orange-yellow and smaller.

M. smithi *Drc.* is above dark brown with light yellow spots, one in the cell-end, 3 subapical ones *smithi*. and a submarginal row of small spots as far as the proximal angle with brown and light yellow speckled fringes. The hindwing also shows a submarginal row of indistinct yellow spots, the fringes being here white. Hindwing beneath brown, at the proximal margin grey with 2 white zigzag lines from the costal margin to the proximal margin. Texas and Mexico (Guerrero).

M. indecisa *Btlr. & Drc.* (193 b). Above blackish-brown, towards the base with olive-brown hair, *indecisa*. and ochreous spots as in *neumoegeni*. Fringes whitish, speckled dark. Beneath apically and on the hindwing strewn with grey. Mexico, Costa Rica, Panama.

M. rethon *Dyar* (193 b, c). Black with a steel-blue reflection, on the forewing with but one minute *rethon*. white subapical spot, otherwise without marking. Fringes speckled white and black; hindwing from the direction of the distal margin somewhat bordered with white. Beneath the same, but with 3 minute subapical spots; hindwing strewn with grey, especially submarginally in the shape of small spots and at the margin itself which is separated from the fringes by a black marginal line which is not visible above. The ♀ has above in the cell-end a small light yellow spot and traces of a lighter, yellowish postdiscal band. Expanse of wings: 50 mm. Mexico (Guerrero).

Alphabetical List

of the forms of the American Hesperidae with reference to the original descriptions.

*) signifies that the form is also figured at the place cited.

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Additions to Vol. V.

Papilionidae.

Having transferred the newly described forms since the publication of the work to the supplementary numbers, we add here some statements about the *Papilio* which have been dealt with on p. 12 to 44 of this volume.

P. ascanius (p. 12). The larva is blackish-brown, powdered with grey, which is on the dorsum condensed into fine markings. The fleshy cones are very dark red, some (in front and behind on the larva) pale yellow. It takes the species from its oviform state 3 to 4 months to develop into the imago. (FERREIRA D'ALMEIDA).

P. perrhebus damocrates (p. 13). Larva stout, dark earth-coloured brown, the fleshy cones changing from yellow to red-brown; some of these cones, as well as an oblique band extending from the foremost ventral feet towards the dorsum, bone-coloured. On *Aristolochiae*, *Asarum* etc. Pupa with a widened abdominal part, an obtusely bituberculate head, green. I very frequently captured the imagines at the end of January and in February on blue-blossoming bushes in the Agricultural Park of Palermo near Buenos Ayres.

P. agavus (p. 13). According to FERREIRA D'ALMEIDA, the dull or lighter purple eggs are deposited on the leaves of *Aristolochia rumifolia*; larva in its adult stage similar to that of *nephalion*, reddish-brown finely dusted with a yellowish ashy brown, so that irregular markings across the dorsum are produced; with numerous red-brown, on the 2nd, 7th and 10th rings yellow fleshy cones across the dorsum and similar ones laterally, of which those on the 1st, 6th and 10th rings are yellow. A yellow lateral band ends at the dorsal cone of the 7th ring. Pupa green with a grey (ventrum) or yellow (dorsum) tint. The imago, though living in the forests, frequents also gardens on account of the food-plant; it flies singly all the year round, but near Rio it is of frequent occurrence especially from November till January and from May till September.

P. quadratus (p. 14; ♂ t. 2 b). In the meantime the ♀ has also been communicated by A. H. FASSL. The length of the forewings is 33 mm, and thus it is one of the largest ♀♀ of the *aeneas*-group. The white square spot is about twice as large in both the specimens taken, as in the ♂. The upper surface of the ♂ is much darker than in the ♀ of the form *spoliatus* Stgr.; the distal half of the forewing somewhat lighter, the black veins in it well visible; along the costa of the forewing beneath runs a greyish-white longitudinal patch extending almost into the apex. Hindwing with a roundish, undivided, yellowish-white discal spot about twice as large as in the ♂. Red oval spots of the dorsal side of the hindwing likewise present, somewhat lighter red and larger than in the ♂; the same is the case with the red collar and the red spots, beneath on the chest and anus. — Also all the ♂♂ captured quite constantly exhibit the square angular spot of the forewing, to which the species owes its denomination.

unimacula. *P. childrenae unimacula* J. & T. This form originates from Ecuador. From the typical *childrenae* the ♂♂ differ by a reduction of the green cellular stripe on the forewing; on the hindwing the red longitudinal spot is shorter and ends more remote from the margin. The ♀ forewing exhibits a single light spot behind the middle of the submedian space. On the hindwing the red colour is very much reduced.

dilutus. *P. cutorina dilutus* J. & T. from Ecuador is based upon a ♂ which is of a smaller than normal size and has shorter spots on the hindwing, the distal spot being pale pink.

P. nephalion (p. 18). The orange eggs are deposited on *Aristolochia brasiliensis*; the imagines fly in Southern Brazil particularly from January till May and from the end of August till December. (FERREIRA D'ALMEIDA).

P. zacynthos (p. 19). Larva dark brown, covered with grey, the light colouring being arranged into longitudinal strokes. The fleshy cones are anteriorly and posteriorly light yellow, on the middle rings mostly reddish-brown. The species, according to FERREIRA D'ALMEIDA, has up to 5 generations a year near Rio. Pupa similar to that of *P. agavus*; the eggs are singly deposited on *Aristolochia rumifolia* oblonga.

P. polydamas (p. 20) flies all the year round in South Brazil, but more frequently in May and October till December; the eggs are not singly deposited, but mostly some at one place or near *Aristolochia brasiliensis*. (FERREIRA D'ALMEIDA.)

P. polystictus (p. 21). According to FERREIRA D'ALMEIDA the larva of the form *janira* is grey, tinted yellowish, the fleshy cones are red, tinted dark; it flies more on grassy plains, not on marshy soil, as most of the other lepidoptera feeding on *Aristolochiae*.

P. lycidas. Specimens from Ecuador, in which the bone-coloured subcostal spot of the hindwing is joined by a series of some more minute internerval spots, were named **adlatus** Niep. — A corresponding form of *belus*, exhibiting such small internerval spots of an orange colour, the occurrence of which is mentioned already by JORDAN on p. 21, is named **chrysomaculatus** Niep. Ecuador. — Another *belus*-form is: **ingenuus** Dyar from Mexico.

P. zelicaon (p. 24). The larva may look almost exactly like that of *machaon*; but the black colour of the bands may also flow together in such a way that the green disappears almost entirely and that the larva then shows the thick red dots on an entirely black ground, like in *Parnass. apollo*.

P. lycophron v. **delunensis** is a form denominated by NIEPELT, in which the submarginal lunae of the hindwings are still more reduced than in *hippomedon* Fldr. Brazil.

P. androgeus (p. 26). FASSL bred on the Rio Xingu from larvae having been taken down from orange-trees, after a 100 days' pupal stage *androgeus*-♀♀, similar to those of *epidaurus* G. & S., which, however, did not show any trace of the yellow spot in the forewing; he denominated them **mira** Fassl.

P. anchisiades (p. 28). The larva in its juvenile stage lives gregariously and only later on forms the well-known „mirrors“ of numerous larvae being crowded together on the trunks of orange-trees. In their adult stage they are greenish-brown with numerous chased-like, intertwined markings on the dorsum. Pupae brown, in front and behind often tinted greenish. According to FERREIRA D'ALMEIDA, the pupa in Southern Brazil often rests for 4 months, during the whole winter. — According to FRUHSTORFER (Entomol. Rundschau, 1915, p. 70), specimens from Trinidad (the island) exhibit enlarged white spots on the forewings, as large as in *chianisiades* (10 d), though removed more proximally. FRUHSTORFER introduces for it the name **philastrius**.

P. hectorides (p. 29). Larva in its adult stage brownish with yellowish-brown and blackish markings and whitish, irregular lines and strokes; on the sides of the thoracal ring a light lateral band tinted yellowish or pink; in the shape similar to the larva of *thoas* (FERREIRA D'ALMEIDA). The imagines are particularly common near Rio in April and May and in August and September. Specimens from Paraguay (= **agordus** Fruhst.) show in the ♂ larger yellow crescents on the hindwing, whilst the ♀ has narrowed red crescents on the hindwing and a coherent white band on the forewing. — **lysirte** Fruhst. are specimens from Rio Grande do Sul and Sa. Catharina with a broader, mostly hued yellowish band on the ♀ forewing; in the hindwing also the white spots are larger.

P. zagreus (p. 31). Specimens from Pozuzo in Peru, according to FRUHSTORFER, differ from typical specimens from Colombia and Venezuela by the median spots being also in the costal part of the wing orange, not light yellow; the antimarginal spots are larger and lighter yellow (= **chrysoxanthus** Fruhst.).

P. bachus **belsazar** Niep. 1 ♂ from Cuscari in Ecuador. From *bachus typicus* chiefly different by the yellow spots filling up the radial spaces on the forewing being parted by dark embedments, and by the hindwing showing an orange band in front of the black marginal band.

P. neyi Niep. resembles *zagreus* (11 c), but it has rounder forewings, in the apical half of which the bone-coloured spots are much larger than in *zagreus*; in the hindwing the dark spots being situate around the lower cell-wall are combined to a black cloud. Ecuador.

As the ♀ of *P. trapeza* R. & J. NIEPELT describes a specimen of this species from Ecuador, which, however, shows entirely male wing-contours (on the figure in „Lepidoptera Niepeltiana“ tab. XII) and according to JOICEY and TALBOT is also in fact a ♂ in which the light forewing and the red spot of the hindwing are somewhat reduced. The ♀ of *trapeza* being unknown to me is presumably on the contrary more variegated than the ♂. — **concoloratus** J. & T. are specimens from Balzapamba in Ecuador, in which both sexes are without the spot of the forewing.

P. bitias. As v. **marcus** Niep. a form is described with a more deeply dentate margin and a broader band of the hindwing beneath; from Pozuzo (Peru).

P. cacicus **peruviana** J. & T. approximates the form *inca* R. & J., but the reddish (in the nominal form bone-coloured) discal band shows the spots in the cell 2 and 3 prolonged as far as the cell. Of the post-discal spots only the lower ones form 5 small crescents, whilst the upper ones are only oblong, not sharply defined. It replaces the form *zaddachi* in Peru. Described according to 1 ♀ from La Merced.

P. xynias **xisuthrus** Niep. The ♂ shows the red spot of the hindwing proximally prolonged; from Ecuador. NIEPELT figures as the ♀ of this form quite a similar lepidopteron with decidedly male wing-contours, in which the red spot of the hindwing is reduced to a faint trace at the proximal margin above the anal angle; this is presumably likewise a ♂.

P. euryleon. A ♂ from Ecuador is described flying together with the form *anatmus* R. & J., which scarcely differs from it; the margin of the hindwing is strongly dentate, behind the cell 3 red spots, before the margin a row of narrow white spots. The greyish-green colour of the forewing is extensive. NIEPELT denominates this form **punctata**.

NIEPELT figures the ♀ of *harmodius xeniades* Hew. with longer red spots of the hindwings, being otherwise similar to the ♀ of *androna* (13 d). — As **jarbas** Niep. a ♀ is described with a large postmedian white discoidal spot of the forewing; from Ecuador.

- gaesatus*. *P. ariarathes* **gaesatus** *Fruhst.* from Matto Grosso resembles the form *leuctra* from Goyaz, but the white demi-band on the proximal margin of the forewing as well as the red spots in the anal region of the hindwing are reduced.
- delunaris*. *P. turnus* ab. **delunaris** *Schultz* are specimens in which the yellow marginal lunae are almost dying away. — ab. **perfulva** *Schultz* are specimens with a dark yellow ground-colour. *delunaris* seems to correspond to the *machaon*-form *nigrofasciatus* *Rothke*, *perfulva* to ab. *aurantiaca*.
- subnigrata*. *P. eurymedon* ab. **subnigrata** *Schultz*. On the upper surface the light marginal spots are absent.
- lurida*. *P. cresphontes* ab. **lurida** *Schultz* has a creamy white instead of yellow ground-colour, and the light spots of the forewings are smaller.
- tockhorni*. *P. marcellus* ab. **tockhorni** *Oskar Schultz* denominated a specimen of the species with dull brownish-yellow and dull blackish bands. As in *marcellus* the ground-colour being in the living insect of a wonderful Nile-green invariably grows pale in the dead insect — the longer the more so —, this is probably a postmortal variation.
- anemos*. *P. dolicaon* **anemos** *Fruhst.* has the forewings like *deicoon* *Fldr.* from Paraguay and Southern Brazil, but the white subapical maculae are duller, the posterior part of the cell dusted with black; hindwing similar as in *deileon* *Fldr.*, but with a larger yellow subanal spot. From Matto Grosso.

Pieridae.

- suffusa*. *Neophasia menapia* **suffusa** *Wr.* is a more intensely marked form from the western coast of North America; especially the hindwing beneath shows broader markings of the veins and reddish marginal spots.

As to the most interesting biology of *Eucheira socialis* *Westw.* (18 a, 194 a) the following is known. „The small, bluish-white eggs are of an oblong shape and are deposited on the leaves of Madrono (*Arctostaphylos*); it has also been observed that the eggs were deposited within the larval nest, but this is only the case if the insects, for reasons explained farther below, could not find their way out of the nest. The larva is of a dark coffee-brown colour and clad with longitudinal rows of short soft hairs of white colour, which, however, are not nettle-hairs. The larva attains a length of 25 to 20 mm. Of the twelve not strongly marked segments the first thoracal ring and the anal segment are mostly somewhat darker. The head is black. The larvae feed at night and, like the processionary caterpillar, they come in the evening in long rows, one behind the other (not in double rows), out from their nest into which they return again towards the morning and where they spend the whole day. „The nest is a solid web, not unlike thick parchment which it resembles also in the colouring. It is about 20 cm long, of a somewhat oval shape, narrow at the apex which forms something like a neck and is fastened on a thin branch, without being able to swing to and fro, because it is built at the junction of two branches running along the neck of the nest. On the whole, this nest very much resembles those of French wasps, e. g. the wasp *Chartaria*. On making a longitudinal incision from the bottom of the nest, a peculiar sight is offered by no less than a hundred pupae being fastened at its interior upper surface on the upper half of the nest, as well as by the lower part of the branch passing through the neck of the nest. The size of the nest and the number of larvae and pupae therein are very variable. One may find small colonies of 4 to 6 specimens and then in all sizes with up to 100 occupants and more. The ingress is always at the deepest place of the nest towards the soil. This is of the greatest importance for the hygienic conditions of the colonies, since on the one hand the dead insects and excrements can easily fall out of the nest, and on the other hand dampness and rain cannot enter, so that in this way the mildew diseases spreading havoc among the larvae are avoided. There are often also bags found with two entrances.

HUMBOLDT denotes these larval nests of *Eucheira socialis* as „natural paper, and they have indeed also been used by the Aztecs as paper before the Spanish Conquest.

One question had not been cleared up to the present day: in what way the developed imago is able to get out through the narrow opening of the nest. Some asserted that the imago emerges when its wings are still soft, whilst others advance the opinion that the copula and oviposition takes place in the interior of the nest and the imago would not at all fly in the open air, and others again thought the imago to be able to get out owing to the wings being specially shaped. It has, for instance, been observed that from among those that had been bagged not one imago came out into the open air, and that, on opening the nest, it was found filled with developed imagines which were partly already in copula (ROB. MÜLLER, Mexico). The same is also the case in nature. A bag having been brought home after the flying-time of the imago, after having been opened showed quite a number of fully developed imagines lying dead on the ground of the nest, whilst a much greater multitude — judging from the number of pupae crept out — must have got into the open air.

Certainly the imago does not leave the nest, when its wings are still soft. It is only the insect being ready to fly that goes out of the bag. The oblong, peculiarly narrow shape and the somewhat proximally indented costal margin of the forewing enable the imago to appress the wings lengthwise close to the body and in this way to pass even narrow openings. Nevertheless a great number of imagines cannot get out of the comparatively narrow holes of the extremely tenacious nests. But now we must consider that, at the beginning of the flying-time of the *Eucheira* in the month of May, the rainy period sets in with heavy showers, so that the larval web is turned by the water into a most flexible and ductile state, and the imago is in this way able to leave its prison. That this theory is correct is manifested in a great number of the bags by the outlets of the nests having been enlarged from inside, which was only possible by way of dampness. From bags not having been moistened only single imagines will be able to get out, and in this case the eggs are deposited in the nest and only the small larvae pass out into the open air, as has likewise been observed. The whole structure of the wings shows that the imago is but a very incomplete and lazy flier.

Of great interest were also the experiments with imagines having been bred to test their flying-power. The insects, on having been set free in the garden, exhibited a wearisome, unsteady and tottering flight of short duration and had evidently great pains to reach by and by the height of the garden-wall near by (R. MÜLLER).

In May 1911 P. BÉNARD, on the Carboncillo Mine near Zacualpan in the State of Mexico, made the surprising discovery that *Eucheira socialis* regularly came to the electric arc-lamps of the mine at night (between 8 and 10 p. m.). We must remark thereby, that these lamps were in the immediate neighbourhood of extensive stocks of Madroño which always bear a great lot of bags of *Eucheira*. BÉNARD himself never observed lepidoptera in this district in daytime, as at any rate these specimens taken by him at night are the first flying *Eucheira* observed in nature, of which the entomologists and collectors known to me here are aware of. In my entomological practice I have often been able to observe Rhopalocera on electric arc-lamps at night, which is here in Mexico especially the case with Hesperids, but they were always only single insects having been scared up, which appears to be out of the question with the *Eucheira*. At any rate this nocturnal flight explains the remarkable absence of the insect in daytime, and we find in this most interesting diurnal lepidopteron the fact being quite unique for a Pierid, that both the larva and imago exhibit entirely the habits of a nocturnal lepidopteron, so that we must regard this insect to number among the most interesting features of the copious and multiform lepidopteral fauna of Mexico and even of the whole world. That the local (Mexican) collectors have not noticed this nocturnal flight before, may be chiefly due to the fact that the arc-lamps were too far away from the woods and food-trees as to be reached by the *Eucheira* with their limited flying-power, and that here in the Valle de Mexico, as in many other districts, the lepidoptera have disappeared in the immediate neighbourhood of the settlements, since the pupae are eagerly collected by the native Indians and eaten as a delicacy." (CARLOS HOFFMANN.)

As the figure on t. 18 a has been reproduced according to an old, faded specimen (fresh specimens were not to be obtained at that time), we produce the figure of a ♂ from a fresh specimen. In the structure of the veins of this species there occur extensive variations, in the subcostal and discocellular veins, which, however, are not confined to the single sexes, but are also found in one and the same specimen. CARLOS HOFFMANN also has ascertained an intense variability in the white marking, thus there occur ♂♂ with almost black hindwings, whereas the 5 ♂♂ and 9 ♀♀ exhibit but slight differences in this respect.

T. macrodice Stgr. (18 c, d) is declared by PEDRO JÖRGENSEN who edited a monography on the Pierids of Argentina and the neighbouring districts to be a separate species different from *microdice* Bleh. (p. 56), but owing to the lack of material the latter could not be figured. — *macrodice* also occurs in Argentina.

T. orthodice Weym. (18 e). Of this species PEDRO JÖRGENSEN also figured the ♀. It has a broad black margin of the forewing, into which the white border of the black sagittiform spots extends; the white veins of the hindwings are above and beneath rather broadly bordered with black, in a similar way as in *pyrrhomma* (18 d; the forewing beneath exhibits no other marking but the fine black scaling of the veins. It also occurs in Argentina (Salta, Caltamarca).

T. demodice Bleh. has been found again by PEDRO JÖRGENSEN in South Patagonia and Fuegia. The figured specimens (194 a) are from Patagonia (Chubut).

T. sagittata Rüb. (18 c) has been declared by PEDRO JÖRGENSEN to be a distinct species.

T. joergenseni sp. nov. (194 a) from Ecuador (Baur) is before me in a ♂. It resembles *sagittata* (18 c), *joergenseni*, but it has much fainter markings on the forewing above, and the hindwing is not marked except a fine black marginal line and insignificant black scaling of the veins; the yellow lines feebly show through from beneath. The palpi are below in *sagittata* yellow and black, whilst in *joergenseni* they are only black-haired, the antennae

in the latter being more intensely white-ringed than in the former, and in *joergenseni* the first two subcostal veins branch off at a greater distance from the end of the discocellular than in *sagittata*.

distincta. **T. distincta** Jörg. (194 a) has been discovered by the author in the Aemzuija Mountains (Argentina). The upper surface of the ♀ forewing is similar to that of *macrodice* (18 c), the upper surface of the hindwing is like that of the ♂; the forewing beneath shows a submarginal row of black hook-shaped spots.

punctata. *T. stigmadice* Stgr. (194 a) was declared to be a distinct species by PEDRO JÖRGENSEN. The figured specimens which I owe to his kindness, are from Esquina Grande; the species flies in November and March, thus in 2 generations. — *immaculata* Rüb. (18 e), according to PEDRO JÖRGENSEN, also occurs in Bolivia. — ab. **punctata** Jörg. differs from *immaculata* by the forewing being purely white and the hindwing slightly cream-coloured; the veins of the hindwing exhibit similar markings as the apex of the forewing, the yellow stripes of the under surface showing through; the black discal spot of the forewing is comma-shaped as in *orthodice* (18 e), but a little more bent, all the veins being fine black, in the apex there are triangular, black spots.

marmorata. *P. monuste* ab. **marmorata** Jörg. has yellow colouring at the apex of the forewing beneath, and beside the blackish colouring at this place of the wing also the same at the apex of the hindwing beneath. This race forms a transition to *orseis* in which, particularly in the female, there is mostly much dark marking on a yellowish or white ground.

P. itaticayae Foett. (19 d), according to P. JÖRGENSEN, has likewise been found in Argentina. According to ZIKAN's statement, it is merely a form of the extraordinarily variable *monuste* (p. 57).

gargara. *P. buniae* **gargara** Fruhst. „A relatively small race much more approximating the forms of the Lower Amazon than its Brazilian allies. It may therefore be rather inserted in *phaloe*. There are now ♀♀ before me with a much receding black border of the forewing and but insignificant grey dusting on the hindwing above, so that I presume that only the „dry season“ form is lying before me. The boomerang of the forewing is rather narrow. A ♀ is above almost white, another one almost entirely yellow. Patria: Matto Grosso. Under surface of hindwing yellow with a strongly parted discal brown band. Also here we must insert two more forms from the Coll. STAUDINGER: **artaxata** *subsp. nov.* being allied to *phaloe* and *gargara*, but still smaller, beneath still paler than the Obidos-race, and the brown discal transverse bands of the hindwing beneath remarkably narrowed. *gerosa*. It is questionable whether it is also a dry season form: Patria: Venezuela. (Type Coll. STAUDINGER). — **gerosa** *subsp. nov.* ♀ differs from that of *phaloe* from Obidos by the purely white discal region of the hindwing beneath and the more than twice as extensive and jet-black instead of brown transverse bands of the median and costal region of the hindwing. Patria: Amazon from Itaituba upwards. — **masinissa** *subsp. nov.* ♂: Above with a broader black apex than the form figured by GROSE-SMITH and the Ecuador form. ♀: beneath throughout pale straw-coloured with remarkably broad black circumcellular spots which are distally united like a band and extend up to the subbasal band. Patria: Bolivia, GARLEPP leg. Type in the Coll. STAUDINGER.“

pallida. **F. pallida** Scudd., according to WRIGHT's figure, is a form (of *napi*) entirely unmarked in the male, whilst the female is only above very little marked. Western coast of North America.

flava. **F. flava** Wr., from the western coast of North America, is a form of *sisymbrii* (19 c) being above and beneath light yellow.

nelsoni. **F. nelsoni** Wr. from the same region, according to the figure, seems to be a *beckeri* (19 c) exhibiting on the hindwing above black-hued veins and beneath submarginal dentate marking.

calyce. **F. calyce** Edw. is presumably a small, intensely marked form of *occidentalis* (19 c); from the western coast of North America.

bryonae. **F. bryonae** Wr. is a much lighter form of the palearctic *napi bryonae* (Vol. I, t. 21 c). Western coast.

castoria. **F. castoria** Reak. is a very light form of *napi* (vol. I, t. 21 b); western coast of North America.

marginalis. **F. marginalis** Scudd. is apparently a small, but little marked form of *rapae* (19 b). Western coast.

leucania. *P. pallida* Rüb. (p. 61). This name having already been disposed of in this genus, I denominate this subordinate species **leucania**.

P. pylotis Godt. (19 d) also occurs in Argentina (Corrientes) and *menacte* Bsd. (19 b) in Buenos Ayres. About *P. lactea* Burm. from Argentina I am sorry not to be able to make any statements.

diagnita. **Leptophobia diagnita** Jörg. (194 b) from Argentina (Prov. of Catamarca, 1640 m) flies in April and May and in November and December on the blossoms of *Oxalis* and other insignificant plants. It is closely allied to *elcone* (20 c); beneath less yellow than the latter, the marginal dots of the hindwing beneath scarcely noticeable, at the base no yellow spot, the anterior dot at the end of the discocellular only traceable.

Of *Perrhybris lorena* Hew. (20 f) A. H. FASSL captured a neuter on the bank of the Rio Estanzuelo (East Colombia, near the small town of Villavicencio). The female (right) half differs from typical ♀♀ by the median band being yellow in the distal half and by the subapical band being dusted with red; the red median band of the hindwing shows an admixture of yellow scales.

P. pyrrha F. (p. 64), according to BURMESTER, also occurs in Argentina (Misiones). Presumably one of the southern forms is meant by it.

Pereute swainsoni ♀ form. **albosignata** Niep. The description runs as follows: the transverse band of *albosignata*. the forewing above and beneath of a pure white, basal spots of hindwing beneath white, the costal-marginal spot, being otherwise yellow, is here also white and basally shortened. Length of forewings: 32 mm. Brazil (São Joao).

Archonias critias rubrosparsa Stich. from Ecuador (Macas) is a subspecies being almost monotonously *rubrosparsa*. black in both sexes; the hindwing above shows 3 small red discal spots and the under surface beside these 7 yellow marginal spots. — *regillus* Fruhst. (p. 67) has been withdrawn again by its author.

Charonias eurytele aurantiaca Fruhst. „Smaller than *eurytele* Hew. (21 e), the spot at the cell-apex and *aurantiaca*. the small transcellular stripes reddish instead of yellow and almost extinct. Patria: Ecuador, exact habitat not stated, but presumably from the Pacific part of the Andes.“

Appias drusilla ab. **nana** Ferr. d'Alm. is a minute ♀-form with narrowed black margins which are broken *nana*. up into spots on the hindwings; the yellowish colouring is also very much reduced. It flies in June. Rio de Janeiro. — **molpadia** Hbn. from Portorico is a ♀-form with scarcely any markings; it invariably shows a black *molpadia*. spot at the end of the forewing above and beneath, and sometimes a faint blackish hue at the distal margin of the forewing above.

Cathaemia hirlanda planasia Fruhst. „♂: forewing above white with a very broad, black subapical band *planasia*. extending along the apex of the cell. Hindwing above slightly light yellow. Forewing beneath of a pure white with a yellow cell and a darker yellow subapical spot. Hindwing light orange with a reddish-orange, complete submarginal band being on both sides only narrowly bordered with a greyish black. The black discal band without a basally emanating region as in *hirlanda*, *praeclara* etc. Patria: Matto Grosso, Cuyaba.“ — **minturna** *minturna*. Fruhst. „♂♀ with broader black subapical bands of the forewing than specimens from the Amazon, Colombia and Peru. Hindwing beneath yellow with very pale submarginal bands posteriorly dying away, but which in the ♀ turn orange. Patria: Venezuela.“ — **posidonia** Fruhst. „The darkest specimen of the Coll. STAUDINGER *posidonia*. is from Colombia and differs from *hirlanda* and its forms by the much broader black distal margin on all the wings and an especially broad reddish-yellow, complete submarginal band of the hindwing beneath proximally broadly margined with black. The median and postdiscal areas of a magnificent yellow. Patria: Colombia, Putomajo.“

Leodonta batzebina subsp. nov. has on the forewing above light yellow, on the hindwing dark yellow *batzebina*. colouring; the marking is about the same as in *dysoni* (21 e), but the submarginal spots are smaller; also the hindwing beneath has much yellow marking. Colombia (Muzo).

Catasticta rubricata Weym., described from West Colombia (Cauca Valley), seems to be the same *rubricata*. species as *Archonias pharnakia* (21 e), since it merely differs by a slight increase of the marking especially on the hindwing beneath. It is a matter of opinion to place this species to *Catasticta* or *Archonias*; in its exterior *pharnakia* agrees better with *Archonias* than with *Catasticta*. The name *rubricata* seems to have the priority.

Cat. hegemon G. & S. The description says: „Similar to *sisamnus*, but the band of the forewing *hegemon*. is broader and the margin of the hindwing much more extensive. ♀ similar to the ♂, scarcely coloured yellow. We have specimens of both sexes and it can scarcely be doubtful that the species differs from *sisamnus*. Not only the discal spots of both wings are larger, but those in the hindwing also flow together with the transverse band. Thereby the distal margin is much narrower and its proximal border very irregular, almost serrate. ♀ quite similar to the ♂, but as much as our specimens exhibit, the cellular band is white and not yellow as in most of the ♀♀ of the other species. Patria: Costa Rica, Panama, Veragua, Chiriqui, Colombia, Ecuador.“ *hegemon* is not known to me from autopsy, but it seems to me that **albescens** nov. (194 b) from West *albescens*. Colombia (Rio Agua, 2000 m, A. H. FASSL) represents a local form of this species; the discal spots of the forewing are smaller, and there are not 3, but 2, the dark border of the hindwing being more reduced; I cannot tell in what way the under surface differs. — It is doubtful whether **helle** nov. (194 b) from West Colombia *helle*. (Cauca Valley) belongs to this species or is a different species. — **chiricana** nov. (194 b) well agrees with *helle* *chiricana*. beneath, but it is larger and above rather different. Volcano of Chiriqui.

Cat. argolis sp. nov. (194 b), as the figures show, differs rather much from *pitana* (22 c). Before *argolis*. me are 3 ♂♂ and only 1 ♀ which exhibits a but very faintly yellowish discal band and a somewhat more abundant white marking. Peru (Pancartambo, S. Rosa) and „Colombia“.

cerberus.

Cat. cerberus *G. & S.* from Costa Rica which has remained unknown to me, has been described as follows: „♀ wings sooty, the usual white band (on the forewing broken up into spots) proceeds from the costal margin of the forewing behind the discal cell and extends to the proximal margin of the hindwing, almost disappearing fine (white) spots at the discal cell of the forewing, the usual row of submarginal and on the hindwing also marginal white spots; forewing beneath almost as above, the submarginal spots larger, with 5 yellow marginal lines, the discal bands of the hindwings running across the discal cell, parted by the veins, the other submarginal band distally deeply serrate, also parted by the veins, at the margin itself triangular and at the base of the wing white spots, between the veins small lines, that in the discal cell prolonged, the latter saffron-coloured like the marginal spots. ♂ hitherto unknown. We have but 1 ♀ of this species, differing from all the others known to us. It may be the most closely allied to *tomyris* *Fldr.* (22 f), but a comparison of the figures clearly exhibits the differences.“

Cat. pinava (22 b), according to LATHY & ROSENBERG, is said to be *boliviana* *Btlr.*

Cat. vapina (p. 70), according to LATHY & ROSENBERG, is said to be synonymous with *incerta* *Dogn.*

Cat. philomene (p. 71) which we figure on t. 194 c, is by no means identical with *colla* (22 b), as LATHY & ROSENBERG pretend.

Cat. hopfferi (22 c), according to LATHY & ROSENBERG, is said to be identical with *pinava* *Dbl.*, but they do not state what they think the insect to be figured on t. 22 b as *pinava*; also in this case, if the said authors are correct, the description is insufficient; the description, however, does by no means agree in every respect with *hopfferi*, for which reason the denomination of this species as *hopfferi* will have to be adhered to.

Cat. modesta (22 e) is said not to agree with the type and the latter to resemble *pinava* *Dbl.*; LATHY & ROSENBERG would have set a meritorious example by figuring the species which have been insufficiently described or not figured, since these species cannot be cleared up without any figures of the types. — The species figured on t. 22 e as *modesta* is said to be *strigosa* *Btlr.* (p. 72), but the description of the under surface does in no way fit the species figured by us as *modesta*. BUTLER compares it with *ctemene* (22 c), the correct determination of which has not been contested by LATHY & ROSENBERG.

Cat. affinis (22 d), according to LATHY & ROSENBERG, is said to be identical with *philone* *Fldr.*; the latter is said to occur in Venezuela and Ecuador, whereas *affinis* has been established from Colombian specimens; presumably there are nevertheless differences between both; a comparison with the type is not possible, since the latter is in England.

albina. **Cat. albina** *L. & R.* (= *zebra* *Fruhst.*) (194 b) is presumably a conspicuous local form of *hebra* (22 d);
zebrella. the under surface is lighter, and the light stripes of the forewing are more yellow. Bolivia. — **zebrella** *Fruhst.* is smaller and darker without any white apical stripes of the forewings. Peru.

scurra. **Cat. scurra** *Stgr. i. l.* (194 c) differs above and beneath to such an extent from *manco* (194 c) that it must be considered as a separate species. From the Upper Amazon (Peru).

bithyna. **Cat. bithyna** *Stgr. i. l.?* (194 c) differs above very much from all the other species, as the figure shows, whilst the under surface is very much like that of *pitana*. Colombia.

philonarche. **Cat. philonarche** *Fldr.* (194 c). We figure the two species lying before us, which presumably belong to this species. The descriptions by the authors FELDER are mostly of such a kind that the species described cannot be ascertained from them. The specimens figured vary a little from each other above and beneath, though not to such an extent that they would have to be considered as the representatives of different species. Habitat: Colombia (Cauca Valley?).

philais. **Cat. philais** *Fldr.*, **philone** *Fldr.*, and **potamea** *Fldr.* What we have said of the *philonarche*, also
philone. refers to the original descriptions of these species. There are no specimens before us that might correspond
potamea. with these species, not even in a questionable way. Patria: of *philais* and *philone*: Colombia; of *potamea*: Venezuela.

pieridoides. **Cat. pieridoides** *Fldr.* is presumably the somewhat darkened form of *pieris* (22 a), the patria of which is Colombia (as stated Bogotá).

hübneri. **Cat. hübneri** *L. & R.* (194 c) from Southern Brazil (Leopoldina and São Paulo) is a smaller form with narrowed white markings of *bithys* (22 d). The habitat stated by the authors, „Peru“, is presumably incorrect.

flavomaculata. **Cat. flavomaculata** *L. & R.* is the southern form (from Costa Rica) of *tentila* (22 g), differing beneath
zeneda. by orange instead of yellow markings. We cannot ascertain whether the following form differs sufficiently from it. — **zeneda** *Fruhst.* „♂ considerably smaller than *teutila* *Dbl.* (22 g) from Mexico, with a much narrower whitish median band above on both wings. The ♀, however, has a broader orange median zone. Habitat: Costa Rica.“

troezene. **Cat. troezeze** *Fldr.* according to the author's figure, is a species with a yellow upper surface, somewhat like *marcapita* (22 g), smaller, with small, yellow apical spots of the forewings, a distinct yellow patch in the cell of the forewing, hindwing with a black margin as in *paradoxa* (22 g), distinct yellow marginal spots and

black submarginal spots coherent with the black margin in the anterior part; under surface somewhat lighter, hindwing with black cucullate spots at the distal margin on a yellow ground and a black dentate median band. Colombia. LATHY & ROSENBERG denote FELDER's figure to be extraordinarily marred, and put stress upon the great resemblance of this species with *troezenides* (22 d) and positively assert both the subspecies to be one and the same species.

Cat. zande Fldr. (p. 73 as synonym to *cora*) has, according to the material of the British and Paris Museums, been recognized by LATHY & ROSENBERG (Trans. Ent. Soc. Lond. 1911, p. 521) to be synonymous with *cora* Luc. and *paradoxa* (22 d) likewise synonymous with this species. The said authors state that *cora* has hitherto not been correctly identified by anybody, what is due to the insufficient description. But as our figure of *paradoxa* corresponds with the description of *cora* Luc., it has to be regarded as the typical one, and the name *cora* has to be cancelled and replaced by the name *paradoxa* the description of which is accompanied by a correct figure.

Cat. manco Dbl. has likewise been mistaken hitherto. LATHY & ROSENBERG have described and figured the ♀ at the place cited above; we reproduce the figure (194 c). South Peru, 7000 ft. (LATHY & ROSENBERG); Bolivia, 3000 m (A. H. FASSL). The species figured by us on t. 22 a as *manco* is, according to the aforesaid authors, *incerta* Dogn. The work in which this species is figured (Lep. Loja II) is not accessible to us.

Cat. ochracea Bat., according to LATHY & ROSENBERG, is the Guatemala-form of *nimbice* (22 b); we could not obtain any specimens of it; it is presumably little different.

Cat. amastris Hew. is said to be the ♀ of *niobe* (22 d); *amastris* is unknown to us.

Cat. apaturina (22 f). LATHY & ROSENBERG remark that the specimen figured by us does not correspond with the type (in the British Museum), because the latter exhibits a white band of the hindwing, and that it apparently corresponds more with *truncata* having been described by the said authors. Our specimen originates from Ecuador, the habitat of the *apaturina* Btlr., *truncata*, however, from Venezuela. In our specimen the band of the hindwing is still darker yellow than in our figure, but still lighter than in the figure of *truncata*; the under surface of our specimen differs considerably from that of *truncata*: whilst the forewing does not show great differences beside its darker ground-colouring, the hindwing exhibits both in the distal and basal areas a light bluish shine and at the costal margin a white stripe which is only in the middle narrowly interrupted by black, and at the end of the discal cell there are 2 yellow dots. In case this specimen should belong to a separate species, it may be denominated: **xanthotaenia**.

Cat. tolima Fassl. „Allied to *C. incerta*, but the ♂ much more golden yellow with lighter marginal triangles on both wings; beneath still lighter, especially in the hindwing. The insect makes the impression of a *C. manco* (194 c) having turned entirely orange, but all the dark parts, also the base of the wing, the cell and the black-tinted veins are much less dusted dark. The ♀ presumably belonging to it is very much like that of *manco*, but all the marginal wedge-shaped spots are more pointed and those of the forewing more distinct, and the whole ground-colour is of a purer white, too.“ Monte Tolima in the Colombian Central Cordilleras at an altitude of 3200 m.

Cat. soccorensis Fassl. „Size, colouring and marking above very much like that of *C. semiramis* (22 d); but the yellowish-white oblique band passing through the middle of the hindwing is almost entirely absent. The costal margin of the forewing is still more indented; the hindwings are more sharply dentate. Quite different is the under surface which recalls the most that of *C. niobe* (22 d) but is still more distinctly marked. The yellow radiary rays thereby become much more distinct, so that they are, just like the median oblique band of the hindwing, situate on a bluish-grey ground (not light yellow as in *niobe*). The dense hairing of the head, thorax, and bases of the wings is of a lustrous black and much darker than in *niobe*. This new, charming *Catasticta* is a decidedly alpine insect of which I only captured a single specimen on the summit of Mount Socorro in the Colombian Western Cordilleras, at an altitude of almost 4000 m, where it was drinking in the company of the red *C. tricolor* in a snug, picturesque gorge at the bank of an icy brook. It probably represents the *C. niobe* of Peru and Bolivia in Colombia.“

Cat. modesta Luc. (22 e) ♀ ab. **rubricata** Fassl. „A form with a rosy instead of sulphur-yellow spot of the forewing, which also shows through beneath though somewhat paler. The insect looks above very much like *Archonias pharnakia* Fruhst. (21 c), but beneath it has the typical marking of *Cat. modesta*.“ Colombian Western Cordilleras, at an altitude of 2300 m.

Cat. apollinari Fassl ♂ „is a form of *modesta*, in which all the markings above are whitish-grey, not olive-yellow as in the type. It forms the transition between *modesta* and *troezene* (p. 105) and probably replaces these forms on the eastern slope of the Colombian Eastern Cordilleras; whilst farther to the south in Peru and Bolivia the *modesta*-forms are replaced by the still whiter, thus certainly closely allied *C. hebra* (22 d).“ Rio Negro, Colombia, Eastern Cordilleras, 800 m.

Cat. lubentina Fassl „approximates the red *tricolor* (p. 73), in the company of which I also captured it on the Quindiu Pass in the Colombian Central Cordilleras, at an altitude of 3800 m. The forewing shows

purely white markings in the shape of a large discal spot parted by the veins and an irregular submarginal band being in the ♂ but indistinct and consisting of dots and longitudinal streaks. The hindwing shows the very same fiery red marking as *C. uricoecheae* (22 f), but the marginal triangles are particularly in the ♀ much broader and distally bordered with snow-white. The under surface is very much like that of *C. uricoecheae*; the white spot of the forewing shows through beneath; the yellow radiary streaks are more incisive and somewhat longer. The insect flies in the forenoon in the sunshine on blossoming shrubs, especially on the extreme tops, where it is difficult to capture. I often waited for days in these high and cold regions eternally hidden in fogs for a glimpse of sunshine; sometimes the morning was so cold that even at noon all was still covered with frost in the shade, and I often had but quite short sunny moments during the day, immediately followed by rain intermixed with sleet and snow." (FÄSSL).

- dentata*. **Cat. dentata** L. & R. (194 d) from Southern Peru (Acopampa), at an altitude of 11500 ft., in February and March. According to the authors' opinions it is the Peruvian form of *amastris* (= *niobe*, 22 d).
- albofasciata*. **Cat. albofasciata** L. & R. from Colombia (Maganja), 9000 ft., February. It entirely resembles above our figure (22 f) signed with „*uricoecheae*“, but the dull grey-dusted spots in the discal area of the forewing are here almost purely white.
- seitzi*. **Cat. seitzi** L. & R. (194 d) from West Colombia (Guabinas on the Rio Cauca), January.
- watkinsi*. **Cat. watkinsi** L. & R. from Southern Peru (Uruhuasi), 7000 ft., March, April. Almost exactly like *seitzi*, but the basal part of the hindwing, especially in the cell darkened with brown.
- distincta*. **Cat. distincta** L. & R., Peru (Rio Colorado) 2500 ft. (La Merced), North East Peru (Huancabamba), August. Larger than the preceding, but otherwise above similar to them, the basal half of the wing darker, the submarginal spots of the hindwing larger. Beneath the marking is more uniform, the ground lighter, the brown postmedian band broader and more distinctly defined.
- leucophaea*. **Cat. leucophaea** L. & R. (194 d). Peru (Uruhuasi, 7000 feet), North East Peru (Huancabamba), 3 to 10 000 ft., March.
- lanceolata*. **Cat. lanceolata** L. & R. (194 e). West Colombia (Torne in the Cauca Valley), August.
- minor*. **Cat. minor** L. & R. Peru (San Ramon, 3000 ft., Rio Colorado, 2500 ft.), March, April. Very much like *watkinsi* and *distincta*, from the latter slightly different by the ground-colour above being more uniformly greyish-brown, the base of the forewing not being so very sooty blackish; beneath the base of the forewing is yellow, without the extensive blackish-brown dusting of *distincta*, and the brown postmedian band is narrower.
- subflava*. **Cat. subflava** L. & R. (194 e). North East Peru (Huancabamba) 3 to 10 000 ft.
- punctata*. **Cat. punctata** L. & R. Southern Peru (Uruhuasi, 7000 ft., Cuzco), March, April. Above almost exactly like *subflava* (194 e), but beneath the distal part of the wing is browner, especially the dark postmedian band broader and less interrupted.
- aureomaculata*. **Cat. aureomaculata** L. & R. Southern Peru, 7000 ft., March, April. Above somewhat like *suasa* (22 e), but the light parts more ochreous than sooty brown; beneath similar to *phile* (194 f), but the yellow spot in the cell-end of the forewing much larger, the small spots of the median band in the hindwing smaller, but whiter, the light, small marginal spots of the hindwing more distinct.
- suffusa*. **Cat. suffusa** L. & R. (194 f). North East Peru (Huancabamba), 3 to 10 000 ft.
- superba*. **Cat. superba** L. & R. (194 f). Southern Peru (Uruhuasi), 7000 ft., February till May.
- similis*. **Cat. similis** L. & R. Southern Peru, 7000 ft., April, May. Above similar to *subflava* (194 e), but the hindwing beneath of a bright and pure yellow, reticulated with blackish-brown like in *manco* (194 c).
- intermedia*. **Cat. intermedia** L. & R. „♂ very similar to *innuba* Rōb. (p. 70), but larger and lighter, the marking on the hindwing beneath much yellower. Southern Peru (Uruhuasi), 7000 ft., March till May.“ An intermediate form of *innuba* and *pieris* (22 a).
- suprema*. **Cat. suprema** Fässl. ♀. „The largest of the red *Catasticta*-forms and probably allied to *C. vulnerata* (p. 73) being unknown to me. All the median bands, also those of the forewings, brownish-red and only near the costal margin of the forewing turning somewhat orange. The submarginal dots of both wings and the small marginal spots of the hindwing sulphur-coloured; fringes narrow and white. Beneath similar to *uricoecheae*, but the red of the forewing, especially in the lower part, showing through; the yellow radiary streaks of the hindwing beneath very narrow, almost hardly traceable. Body densely haired black. A single ♂ from the Quindiu Pass, Colombian Central Cordilleras, 3800 m, where it was drinking from the blossom of a lilac-like shrub.“
- susiana*. Of **Cat. susiana** Hpff. (= *collina* Stgr. i. l., *calanga* Stgr. i. l.) (194 e) we reproduce the figure of the under surface. (Peru).

Cat. philothina *Stgr. i. l.* (194 c) is above much darker than *manco* (194 c) and beneath quite differently *philothina*, marked and coloured. Ecuador. — **incertina** *subsp. nov.* (194 d) from Colombia resembles *philothina* (194 c) *incertina*, above, but it is marked more grey, whereas the under surface is very different.

Cat. phile *Stgr. i. l.* (194 f) seems to be allied to *pinava hopfferi* (22 c), but the upper surface is less *phile*, marked yellow and the under surface very different. Peru (Chanchamayo).

Cat. zanclicides *Stgr.* has formerly been in the market by the name of *philonarche*. As the figures exhibit, *zanclicides*, it differs considerably from the latter. Colombia (Cauca and Aguaca Valleys).

Cat. zanclicoides *Stgr.* (194 f) differs from *zanclicides* more above than beneath; the under surface is *zanclicoides*, not so distinctly and less marked white, and on the discal band of the hindwing it shows less violet colouring. Peru. Similar to *watkinsi*.

Cat. subtoca *sp. nov.* (194 f) is before us in a female specimen. It is above entirely different from *subtoca*, *toca* (22 f), but beneath similar, though it is without the conspicuous yellow spot at the end of the discal cell of the hindwing. Venezuela (Merida). It also resembles *seitzi* (194 d).

Cat. scurra *Stgr. i. l.* (194 c) from Peru resembles *leucophaea* (194 d), but it is much darker, also in *scurra*, the marking, especially beneath, it is very different.

Cat. chelidonides *sp. nov.* (194 g). Of this species 1 ♂ from Peru (Chanchamayo) and 1 ♀ from Venezuela *chelidonides*, (Merida) is before us. We have figured the upper surface of the ♀ and the under surface of the ♂. In the ♂ the light markings above are more intensely yellow, also the marginal and submarginal spots more distinct; in the ♀ the markings beneath are more blurred and the colouring is paler than in the ♂.

Cat. variabilis *sp. nov.* (194 g) varies considerably in the extent of the greyish yellow colouring above, *variabilis*, and also beneath the markings, particularly the yellow marginal spots, differ in size. Colombia.

Cat. latiplaga *sp. nov.* (194 g). Two ♂♂ of it are before us; the specimen figured from beneath has a *latiplaga*, much narrower and very light yellow basal area of the hindwing; this difference is also present beneath. Colombia (Pacho, Eastern Cordilleras — the yellow specimen; the other specimen from Colombia without the exact habitat being mentioned).

Cat. pallens *sp. nov.* (194 g) resembles *zanclicoides* (194 f) above, but the yellow discal spots of the *pallens*, forewings are shorter, arranged in the shape of a uniform band, the submarginal spots are smaller and in the posterior two areas absent, the hindwing also with a uniformly broad discal band, the marginal and submarginal spots only traceable. Beneath different from all the species known by the pale colouring. Peru.

Presumably some of the species above mentioned as new species are identical with such that have been described in an irre recognizable way by older authors. As we have now figured them, it will no more be difficult to recognize them from the „types“ that may yet be extant.

Daptonoura daguana *Fassl* ♂. „A large *florinda*-form (23 b) with an expanse of 64 mm and a broader *daguana*, black border of all the wings; the hindwing towards the anal margin passing from the bright orange colouring over into an intense chrome-colour. Beneath with a much broader black cell-end spot of the sulphur-coloured forewings. Hindwing beneath intensely chrome-coloured (not sulphur-coloured as in the typical form). In the 2 mm broad black distal margin two, likewise deep yellow, long streak-shaped spots.“ San José (180 m above the sea-level) on the Rio Dagua in West Colombia, thus very close at the shore of the Pacific Ocean.

Dapt. caesarea *Fruhst.* „A distinguished species, allied to *florinda* *Btlr.* from Central America and *caesarea*, to *inaequalis* *Btlr.* from Peru, above magnificently light yellow with a very narrow black cell-end. Under surface of forewing sulphur-coloured, of hindwing orange. Cell-end broadly encircled with black, distal margin relatively narrow and as in *polyhymnia* *Fldr.* covered with small, yellowish maculae. West Colombia (Rio Magdalena). — Scarcely different from *polyhymnia* (23 b).

Dapt. vecticlusa *Btlr.* = *Appias drusilla* *Cr.* (21 f) — according to KIRBY, Catal. Diurn. Lepid. *vecticlusa*.

Dapt. flippantha *F.* is according to KIRBY's Catal. Diurn. Lepid. = *limnoria* *Godt.* (p. 75). *flippantha*.

Dapt. lycimnia narmia *Fruhst.* „Upper surface purely white, by the apical spotting allied to *maeotis* *narmia*, *Fruhst.* from Peru. The under surface, however, is absolutely identical with *pantoporia* *Hbn.* from Espiritu Santo and Minas Geraes. Another form, by the distal margin of the hindwing being covered with small white dots, somewhat resembles *phazania* *Fruhst.* from Bahia and forma *daulia* *Fruhst.* from Colombia, only the margin is like in *pantoporia* very narrow, but covered with white not with yellow as in *pantoporia* (forma *othoca* *othoca*, *nov.*).“ Patria? — **semiobscurata** *Weym.* from Ecuador (Macas) has very broad black marking above and beneath; *semiobscurata*, the larger distal half of the hindwing beneath is dark brown, the proximal bordering of this marking very irregular and faded. — *lycimnia* is said also to occur in Argentina (Misiones).

Dapt. florinda ab. **discocellularis** *Strand.* The original description runs as follows: „A ♂ without the *discocellularis*, patria being stated, distinguished by the forewing, according to the figure in Biologia Centrali-Americana, exhibiting also above a black discocellular band, which, according to the original description, is in the typical

form the case only in the ♀ (RÖBER in SEITZ mentions this band of the forewing above neither in the ♀).“ — We remark hereto that it was not necessary to state this difference from the ♂ in this species specially, because it is a general character of the ♀♀ of this genus; to my knowledge only *regnidas* (23 c) does not exhibit a discocellular band, but this is presumably an aberrative form, whereas the normal ♀♀ probably have such a band.

palaestra. **Dapt. palaestra** *Hpff.* (p. 76) has of late been regarded as a distinct species, for which reason we have
equadorica. figured it (194 g). — **equadorica** *Strand* from Ecuador (Sarayacu) has been described as follows: „Distinguished from the two types (♂♂) of the species lying before me by its larger size (expanse of wings: 57, length of forewings: 34, length of body: 22 mm), a broader marginal band (at the apex of the forewing 11 mm, along the vein 3 in the forewing 4 mm, in the hindwing 4½ mm broad) which is besides not proximally bordered undulately in the hindwing; besides by the whitish under surface and the narrower (in f. pr. triangular) discocellular spot.

loranthi. **Mathania loranthi** *Jörg.* (194 g) is much smaller than *leucothea* (23 b) and easily discernible by the much more taperingly extended hindwings. The indistinct marking beneath is entirely like that of *leucothea*. Common in the valleys of the Andalgalá at altitudes of 150 to 250 m, in February and May. Larva on *Loranthus eugenioides* Kth., of the usual Pierid shape; pupa remarkably bent.

carrizoi. **M. carrizoi** *Giac.* „Most closely allied to *M. leucothea*, but quite different; wings uni-coloured white with a faint greenish hue, less than in *leucothea*; more yellowish; this comparatively more on the upper surface of the wings. Forewing of *carrizoi* with a slightly yellowish or greenish apex which in *leucothea* is of a deep and very pure light green colour, and on the ground there is a row of small greenish clouds, forming a semicircle round the margins of the wings, concentric to them. This varies greatly in my 4 specimens, so that in one it is hardly visible, whilst in the others it is more distinctly marked; a yellow, faint, little visible dot is the dot, in the space of the two veins forming the disc of the hindwing; body haired, in one specimen at the base of the eyes a small dot as in *leucothea*. Antennae similar as in *leucothea*. Size variable, expanse: 44 to 58 mm. Catamarca (Sa. Cruz and El Saladillo, La Rioja, Tucuman) and Bolivia.“

melissa. **Hesperocharis melissa** *Ferr. de Alm.* Size approximately that of *erota* (23 e). The description says: forewing white or greyish-white, apex slightly fox-coloured. Hindwing light greyish-white. Forewing beneath above, hindwing beneath yellowish-white, often at the base with an orange spot. Thorax black with light stripes. Abdomen light yellowish. Antennae blackish, at the apex yellowish. It flies in July. Patria: Rio de Janeiro.

quichua. **H. marchali** ab. **quichua** *Jörg.* is a form more intensely marked above and beneath. Catamarca, 1640 m, in December.

lactea. **H. lactea** *Burm.* from Argentina seems to be extremely rare, since it has no more been discovered of late. The original description says: „This species has the size and shape of *anguitia*, but the forewing is a little obtuser. Body black and covered with long white hair; antennae black with a yellowish-red club, palpi and frons with black hair intermixed with white hairs; wings milky-white, the costal margin slightly yellowish towards the apex, beneath the forewing has a somewhat yellow costal and distal margin, of the same colour is the hindwing beneath, with a saffron-coloured dot at the base.“

meridionalis. **Teriocolias atinas meridionalis** *Jörg.* from Argentina (Aconquija Mountains), at altitudes of 1500 to 2700 m, is smaller than *atinas* (26 d) and above and beneath of a paler yellow ground-colour, and — especially
shiptoni. beneath — much less marking. — ab. **shiptoni** *Jörg.* shows brownish ground-colouring on the hindwing beneath, with a very indistinct marking. The imagines fly in November and at the end of May on the blossoms of Compositae, Loranthaceae, Acanthaceae, Verbenaceae and Labiatae. The larva lives on *Cassia hookeriana* Gill. The pupa is bent back, and the part of the wing-cases is bulging very much.

flavia. About **Terias flavia** *Burm.* occurring in Argentina (Tucuman) I cannot tell anything, as I neither possess specimens of it nor have access to the description.

T. arbela *Hbn.* (24 b) also occurs in Argentina.

formosanus. **T. thymetus formosanus** *Jörg.* from Argentina (Formosa), flying in November, has a somewhat broader black margin of the forewing and a diffuse, narrow, black border of the hindwing.

T. agave *Cr.* (24 f) also occurs in Argentina.

peruvicola. **Catopsilia rurina peruvicola** *Strand* from South East Peru has been described from a ♂ being very much marked beneath.

occidentalis. **Colias occidentalis** *Sedl.* from the western coast of North America resembles *chrysomelas* (27 a), but it has rounder wings and is lighter yellow, the black marginal marking narrower, the ♀ has only blurred, narrow, black marginal markings, no submarginal spots and a more or less distinct discal spot.

astraea. **Col. astraea** *Edw.* from the North American western coast is in the ♂ similar to *ariadne* (27 f), but a little larger, with more pointed wings and less orange-coloured. The hindwing has no discal spot. The ♀ is

very pale yellowish-white, without any markings except a distinct discal spot and some blackish dusting on the distal margin of the forewing.

Col. euxanthe nigerrima *Fassl* is the dark (sooty) form occurring in both sexes, but transitions to *nigerrima*. the normal form are more frequent. La Paz Bolivia, 3600 to 4000 m; Cuzco, Peru, 4000 to 4200 m. Very rare among the typical forms.

Col. tolima *Fassl*. „Similar to *dimera* (27 h) from the Eastern Cordilleras; forewing more rounded off. *tolima*. the black marginal band proximally rectilinearly defined and not extending to the proximal margin, but ending rectangularly in the middle between M² and SM². In the ♀ the black distal-marginal band differs quite analogously from the ♀ of *dimera*. The dark hue on the bases of the wings and on the border of the hindwing is much fainter than in *dimera*. One of the few diurnal lepidoptera which I discovered in exploring Mount Tolima, near the snow-limit at altitudes of 4200 to 4600 m. The insects were flying at a terrific speed along the lava-moraines. I mostly waited for a moment when the sun was hidden by nebulous clouds swiftly passing by and the insects at once dropped into the grass as if they were paralyzed, and were easily taken with the pincers.“

Col. weberbaueri *Strand*. The original description says: „♀ closely allied with *C. dinora* *Ky.* (cf. *weberbaueri*. Seitz, Macrolep. t. 27 g), but the forewing appears to be less tapering and its border more distinctly convex in its whole length (in *dinora* it is in the middle straight), the hindwing is more elongate with a still more convex resp. in the middle very bulgingly projecting border (the hindwing in this case being also slightly shorter [by 2½ mm] than the forewing). The discocellular spot of the forewing is larger and more rounded off. The dark marginal band extends to the anal angle, being in front about 7 mm broad, the proximal margin being proximally quite blurred by dark dusting, in the posterior half, however, proximally more distinctly defined, and only the veins there being dusted with black, along the vein 4 being 4 mm broad, along vein 2 about 2½ mm; the band encloses seven yellow spots, of which the four situate between the costal margin and vein 4 are a little larger and only parted by the veins, whilst that in area 3 is the smallest, and that in the anal angle indistinctly defined and sometimes not at all recognizable as an isolated spot. The ground-colour of both wings above is like in *C. dimera* ♀ (cf. op. cit. t. 27 h). Hindwing at the apex (in the areas 6 and 7) with a dark, about 2 mm broad marginal spot which, however, is almost removed by a lighter, enclosed spot. Besides there is an indistinctly lighter, scarcely recognizable marginal band of 3½ mm width. The fringes on the forewing are rosy-reddish in the anterior half, yellow like the surface of the wing in the posterior half, whilst on the hindwing they are uni-coloured rosy-reddish. Forewing beneath in the ground as above, in the costal area dusted darker, in the marginal area the markings from above show through; in the areas 5 and 7 there is at 3 resp. 4½ mm distance from the margin one small brown spot each, and the discocellular spot appears as a small, black transverse ellipse. Hindwing beneath dusted with a dark greenish-yellow, being the lightest in the marginal area, with markings as in *dinora*, the seven sublimbal spots, however, are darker and smaller, the discocellular spot is likewise darker and distally pointed in the shape of a wedge and enclosing a snow-white, oblong punctiform spot. Expanse of wings: 33, length of forewings: 19 mm. The ♂ slightly differs from the ♀, and is somewhat smaller: length of forewings 18, expanse of wings 31 mm, the ground-colour above being of a brighter yellow, the marginal band of the forewing deeper black, more distinctly marked, extending uninterruptedly and in the same distinctness to the anal angle, and enclosing before the middle three yellow spots which are quite distinct but still smaller than in the ♀, whereas the posterior half of the band shows only traces of three yellow spots. Both wings in the basal area, the hindwing besides in the dorsal area densely dusted with a pure black; the hindwing shows the same, though more distinctly marked marginal marking as the ♀. The under surface is likewise more profusely coloured yellow than in the ♀ and with more distinct markings, except the discal spot of the forewing, which is entirely absent.“

Col. strandi *sp. nov.* (192 d only the first figure) of which 1 ♂ is before me from Lake Titicaca, seems to differ from *weberbaueri*. The under surface on the hindwing and on the apex of the forewing is much distincter than in *euxanthe*-♂, thus considerably different from *dimera*-♂, the colouring of the other part of the forewing beneath, however, not yellowish as in *euxanthe*-♂ but dingy white with grey scaling, especially on the veins; the red-brown spots on the forewing and hindwing are much smaller, and on the forewing there are but 2 of them, one at the costal margin and the other subapically, in the three following areas of the wing there is one minute spot each scarcely recognizable with the naked eye. It was denominated in honour of Prof. Dr. EMBRIK STRAND.

Col. dimera ♀-f. **semperi** *Reak.* is the white ♀ form which, however, seems to be more common *semperi*. than the ♂-like ♀♀.

Col. blameyi *Jörg.* (194 d, second figure, as *strandii*) occurs in the Argentine Mountains (Aconquya) *blameyi*. at altitudes of 3200 to 3750 m and flies at the end of April on the blossoms of various Compositae, Verbenaceae and Malvaceae together with *Phulia aconquijae* and species of *Tatochila*. The under surface of the imago shows the same scheme of markings as in *euxanthe* (27 h), but in the ground-colouring it is much paler (yellowish-grey), and the discal brownish spots of the hindwing form a complete row; also the forewing shows 4 such spots.

Col. emilia *Edw.* is probably the Pacific form of *eriphyle* (27 e), somewhat smaller and paler and with *emilia*. narrower black distal margins.

Meganostoma bernardino Edw. (p. 94), according to WRIGHT's figure, is a form of *eurydice* (26 f) with *amorphae*. black distal margins of the hindwings. The ♀ does not differ from that of *eurydice*. — *amorphae* Wr. is a form of *eurydice*-♀ marked blackish.

citrina. **M. helena** ab. **citrina** Jörg. does not exhibit the orange colouring of the hindwing, but it is lemon-coloured; it is common in the Province of Tucuman from May till August.

coliaides. **Nathalis plauta** ♀ ab. **coliaides** Fassl is the ♂-like ♀ form; not rarely there occur transitions to the usual form. Bogotá, Colombian Eastern Cordilleras, 2600 to 3200 m. The insects are fond of drinking on a common, yellow blossom of *Hieracium* especially in sunny districts.

deserti. **Anthocharis deserti** Wr. from the western coast of North America is a small form of *cethura* (28 b) with scanty markings and colours.

flora. **A. flora** Wr. from the same region is a robust and more profusely marked form of *reakirtii* (28 a); *mollis*. the ♀ is above and beneath pale yellow; in **mollis** Wr. the subapical marking of the forewing above is reduced. *caliente*. Western coast of North America. — **caliente** Wr. which the author takes to be a separate species is presumably only a small and pale form of *pima* (28 a). Western coast of North America.

Of **Phulia nymphula** Btlr. (28 c) GIACOMELLI has discovered a new form in Argentina (in the Andes *reedi*. of Mendoza) and denominated it **reedi**. At present I do not know any further particulars.

aconquijae. **Ph. aconquijae** Jörg. (192 d) is common beginning from the middle of March in the Aconquija Mountains at altitudes of 3500 to 3750 m and flies together with *Colias blameyi* and species of *Tatochila*. It is above and beneath very much like *nymphula* (28 e), but the under surface is of a darker ground-colour and with a more intense and profuse marking. As there is no comparative material of *nymphula* from Chile available, it is still uncertain in what way the latter differs from the form figured on t. 28 c, which was considered by O. STAUDINGER to be identical with the Chilean form and from *aconquijae*; *aconquijae* may be synonymous with *nymphula*, in which case the Bolivian form would have to be newly denominated; it may then be called *joergenseni* in honour of the author of „Las Mariposas Argentinas“ (Buenos Ayres 1916), who has made himself very meritorious by the exploration of the Argentine Pierids.

limbalis. **Pseudopieris limbalis** sp. nov. (192 d) was discovered by Mr. A. H. FASSL, who had the kindness to send us the figured specimen; in January near Altamira on the Rio Hingu. The under surface is uni-coloured white except the yellow basal spot. If *penia* (28 e) would have to be considered as a separate species, this would also have to be done with *limbalis*.

citrinella. Of **Dism. citrinella** Fldr. (192 d) we are now able to reproduce figures of the ♂; the ♀ is still unknown to us. According to FELDER, this species occurs in Venezuela (Prov. of Merida) and in the Cordilleras of Bogotá (Colombia); before me are specimens from Western Colombia (Rio Magdalena) and Bolivia. *D. citrinella* is presumably a species scarcely different from *melite* (28 h).

core. **D. core** Fldr. is still unknown to me. The description says: „Wings above blackish, the inner-marginal band anteriorly broader with a discal, shortened oblique band of 4 yellow submarginal spots; hindwing yellow, the whole distal margin proximally above sinuate (or curved), blackish; beneath the marginal spots between the veins are of a deeper yellow, in a brown margin; the hindwing on the whole intensely brown, the basal part of the costa, 2 larger basal spots, and a broad, irregular discal band, traversed by the veins, mother-of-pearl white, in some places with an intense yellow tint, a circular subcostal macula, another one proximally and other thick maculae at the margin intensely yellow. Venezuela, in the Province of Caracas; also from Granada (Colombia). Allied to *D. medora* (29 b), but larger. The Colombian specimen shows the band of the forewing much broader and connected with the proximal band.“

albimacula. **D. albimacula** sp. nov. (192 c) from West Colombia (Rio Magdalena) resembles *medora* (29 b), but it is smaller, the yellow inner-marginal spot of the forewing larger, the yellow subapical spots are absent, but there is a large, white subapical spot situate farther posteriorly. The under surface, especially of the hindwings, as the figure shows, is likewise considerably different. I possess *medora* from the same habitat.

D. lygdamis Hew. The ♀ which was discovered by A. H. FASSL in Coroico, Bolivia, 1400 m, resembles the ♀ of *lewyi* (29 e) above, for the black distal margin of the hindwing is much cleft. The under surface corresponds to that of the ♂, but the yellow spots are larger.

Of *D. schausii* Dgn. (p. 101) we subsequently reproduce the upper surfaces of both sexes, of the ♂ also the under surface (192 e). The ♀ has beneath black hindwings, in the centre is a whitish spot, at the base there are 3 rather large red spots, and the costal margin is dusted with a sulphur-colour. The forewing is white with a black apical part in which there are 3 whitish-yellow subapical and 2 similar submarginal spots; the costal margin is also black. The figured specimens are from Peru (Pozuzo).

tolimensis. **D. critomedia**-♀ **tolimensis** Fassl are the ♀♀ of *critomedia* (29 f) from the eastern slope of the Central Cordilleras of Colombia (Cañon del Monte Tolima, 1200 to 1700 m), not showing white, but yellow ground-colouring above.

D. buchtieni Fassl. ♀. „A Bolivian form of *arcadia*; expanse: 55 mm, somewhat smaller than the Colombian ♀ of *arcadia*. All the yellow marking above, particularly the oblique median band of the forewing narrower, as well as the horizontal band of the hindwing narrower and interrupted at the veins. The main difference, however, is that the median band of the forewing is also above not sulphur-coloured, but of a magnificent orange-red, together with the yellow wedge-shaped streak extending along the median towards the base. Beneath analogous to the upper surface with a narrower marking, a very prominent red median band of the forewing, but less prominent silvery dots of the hindwing, the ground-colour of the hindwing not being bright yellow as in the type, but more silvery grey, against which the silvery dots stand out distinctly.“ Coroico, Bolivia, 1400 m; taken in the dense forests of the mountains „where the diurnal lepidoptera are at any rate rare.“ *buchtieni*.

Of *D. lycosura* Hew. (192 e, p. 101) we have subsequently figured the ♂; the ♀ is unknown to us. — **D. ecuadorensis** Niep. The description runs as follows: „Different from the figure as follows above. The white discal spot of the forewing is larger than in the type, and in the middle of the costal margin is a small, white, oblong, round spot. The white colouring of the hindwing is likewise more extensive and at the cell-end there are two white spots. Under surface lighter than in the figure of the type, particularly on the hindwing the light markings are much more extensive and whiter, in the anterior part of the distal margin yellow-speckled patches between the veins. Length of forewings: 28 mm. One ♂ from Oriental Ecuador.“ *ecuadorensis*.

D. macasana Strand from Ecuador (Macas), described according to a ♀, the author takes to be a separate species. The specimen differs from *leonora* ♀ (29 e) by its narrower wings, the discal spot being coherent with the marginal marking, and a somewhat broader black distal margin of the forewing; the under surface has more black and yellow marking than the two ♀♀ before me from Santa Inez (Ecuador). *macasana*.

D. niepelti Weym. ♀ (♂ p. 101) is above white with a broad black apical part of the forewing, in which there are 4 white spots; also the costal margin is broadly black as far as the longitudinal middle of the discal cell, in this black stripe there is a small white longitudinal stripe and before this (at the end of the discal cell) there are 2 small white spots. The hindwing has a broad black apical margin and its posterior half is of the same colour. The under surface corresponds to the upper surface, but is of a more fallow colouring, at the base of the hindwing is a yellowish spot emanating in rays.

D. ela Weym., described according to a ♀ from Colombia, makes the impression of a gigantic ♀ of *pinthaeus*, but the yellow band of the hindwing is very broad, sharply defined and greenish; the red band of the hindwing beneath is very distinct. *ela*.

D. spio Godt. (30 a, ♂). The ♀ has a paler (reddish-yellow) marking and the hindwing exhibits a broad, equally coloured median band, which is also anteriorly bordered with a broad black; the subapical spot of the forewing is parted.

D. astynome paulistana Fruhst. According to the author, the main difference is exhibited by the ♀♀ showing a much narrower reddish-yellow cellular stripe of the forewing and a longer subapical band of yellowish spots and being beneath of a paler greyish-yellow colour. Of the ♀ there exist two forms, one being above chiefly spotted reddish-yellow, as they also occur in Bahia, Espiritu Santo and Rio de Janeiro, and a rare aberration with a yellowish median area of the forewing and a yellowish circumcellular region of the hindwing (♀ form *donia* form. nov.). Patria: Casa Branca, São Paulo.“ *paulistana*, *donia*.

D. astyocha Hbn. (p. 103). FRUHSTORFER regards it to be a species separated from *astynome* Dalm. (30 c). We have therefore had it figured subsequently (192 f).

D. mercenaria versicolora Fruhst. „♀ above of a peculiar yellow hued with pink. ♀ either whitish-yellow or light flesh-coloured (*carnosa* form. nov.). Under surface faded reddish-yellow with two broad brown transverse bands. Patria: Pernambuco (Brazil).“ *versicolora*, *carnosa*.

D. dolorita Fassl. Only the ♀ is known. It differs from *lewyi*-♀ (= *nasua* Fldr., 29 e) by its smaller size, almost entirely black hindwings only showing a white stripe in the costal part, the forewing exhibiting a narrower, very irregularly defined black margin. The under surface is much darker, the large, somewhat dull silvery spots are reduced to the three foremost, the bright yellow wedge-shaped spot extends in a long point towards the base, but about 5 mm before the base it disappears in the dark ground-colour; 3 yellow basal spots are present as in *lewyi*; the other marking of the hindwing beneath is intensely darker and more indistinct than in *lewyi*. The author reports: like all the allied species also *dolorita* is a timid insect flying high up in the mountains and being fond to settle down on projecting twigs in the primeval forests, at sunny places where it basks in the sun with its wings spread out. Colombia, Western Cordilleras, at altitudes of 1800 to 2000 m. *dolorita*.

D. idae Fassl. Above the ♀ (only this is known) resembles that of *medora* (29 b), but the yellow median band of the forewing is narrower and also at the anal margin there is between the first median vein and the submedian a band of the same colour; the black distal-marginal band of the hindwing does not extend to the apex. Much more different is the under surface by the horizontal dark shades which, being connected by the veins, form single yellow ovals and somewhat recall the much smaller *theugenis* (28 h) from Bolivia. Alto de las Cruces, a little beneath the ridge of the Colombian West Cordilleras. In the beginning of January. *idae*.

negrita. **D. mirandola** (29 a) ab. **negrita** Fassl. This form has been established according to a ♂ having been captured during a thunderstorm [on the 3rd of October 1908]; this specimen shows a monotonously black upper surface of the forewing (St. Antonio, Colombia, at an altitude of 1800 m).

altis. **D. altis** Fassl is in both sexes similar to *mirandola* (29 a), but somewhat smaller. In the ♂ only the light (white) spots on the anterior part of the forewing are distinct, the others are dusted with dark, in the ♀ the black distal margin of the hindwing is uniformly broad. The under surface shows dull mother-of-pearl spots. Colombia, Western Cordilleras, at an altitude of 2400 m.

manuelita. **D. manuelita** Fassl is allied to *lygdamis* (29 f), both in the size and marking beneath which resembles that of the *Catasticta*-species. Upper surface white with broad black distal margins, also the discal cell in the ♂ forewing almost entirely filled up with black, in the ♀ with such a stripe along the subcostal; in the apex of the forewing 3 white spots. The under surface exhibits almost the same black marking, and is very much like that of *lygdamis* (29 f). Colombia, Western Cordilleras, at an altitude of 1600 to 2000 m.

D. dejone Hew. ♀ (192 f). The figured specimen is presumably a ♀ of this species. The under surface is blackish-brown with the same marking as above, on the hindwing, however, the brown colouring is much more diffuse. The antennae are coloured like in the ♂. Chiriqui.

jurua. **D. jurua** sp. nov. (192 g). It is not certain whether the specimens figured represent the sexes of one and the same species. The ♀ is very much like that of *tricolor* (30 b), of which neither the ♂ nor the patria are known. The under surface is in both specimens marked and coloured corresponding to the upper surface, though paler, in the ♂ forewing with the modification effected by the scent-organs; both sexes exhibit a series of white spots on the distal margin of the hindwing. From the Rio Jurua.

mechanitina. **D. mechanitina** sp. nov. (192 g). Before me is 1 ♀ from Matto Grosso (Rio Machados) which may belong to another species of which only the male was described. The under surface is like the upper surface, but paler, at the distal margin of the hindwing there is a row of rather large white spots. Antennae very light, in the distal part at the anterior side white, the club yellow.

xanthone. ~~Venez.~~ **D. xanthone** sp. nov. (192 h), the patria of which is unknown, is in the female similar to *mechanitina*; in both sexes the under surface is entirely like the upper surface, but the colours are duller and all the wings exhibit at the distal margin a row of white spots.

Of *D. laia* Godt. we subsequently figure the ♂ (192 g); it originates from Cayenne.

pellucida. **D. pellucida** sp. nov. (192 g) from Jurua may be a species not different from *erythroë* (30 f); the under surface does not show any essential differences. Presumably also *batesi* (30 f) of which a ♀ has been figured belongs to this species; the ♂ lying before me exhibits a complete yellow band of the forewing, a but very narrow yellow band of the hindwing, and besides on the hindwing markings similar to *erythroë*, but before the yellow band black, band-like scaling.

proxima. **D. pinthaeus** (?) **proxima** form. nov. (192 h), captured by Mr. A. H. FASSL in January near Teffé (Ega) on the Amazon River, exhibits a somewhat different shape of the bands on the forewings; the under surface has not a yellow, but white ground-colour, the black median band of the forewing extends uninterruptedly from the costal margin to the distal margin, and the submarginal band is not red as in *pinthaeus*, but yellow like the ground-colour. According to a ♂.

Danaidae.

1st Subfamily: Danaidae.

Hereto we must only add that the American *D. archippus* F. (= *plexippus* L.) has uninterruptedly penetrated in Eastern Asia since the family has been dealt with in this volume. On the Marshall Islands it has now become the most common lepidopteron.

Of *D. erippus* Cr. the larva is black, with broader or finer yellow belts, the thread-appendages black. On *Asclepiadeae*. The total development from the egg to the imago, according to FERREIRA D'ALMEIDA, lasts for about 1 month.

D. gilippus Cr. Larva likewise of a black ground-colour, in the adult stage with bright yellow belts. On *Asclepias*. Pupa different from that of *archippus* by the absence of the small golden tips in front at the thorax.

2nd Subfamily: Lycoreinae.

Lycorea halia. Larva whitish-yellow, with numerous brownish-yellow transverse belts; the appendices on the metathorax (3rd ring) are kept in constant commotion by the insect; it was also observed on *Carica popaya*.

3rd Subfamily: **Ithomiinae**.

The **Ithomiinae** in Tropical America are entirely subject to the laws governing all the groups of insects which do not like to fly or are bad flyers in this woody region: almost every greater part of a forest, the river-basin of almost every little river has a special mode of marking from which the members flying there and taken at exactly the same locality differ to a remarkably little extent. One may often travel for miles and miles without finding a certain species of *Ithomia* or *Pteronymia*, which may then be suddenly swarming in a surprisingly great number of specimens at an entirely circumscribed place. Thus I once saw on a bush only 2 m high near Santos more than 20 specimens of *Melinaea paraiya* of which I had before not discovered a single specimen in spite of having been roaming about for many days. Scarcely any specimen of this species flew away from the bush, until all of them were captured: such a behaviour is only met with in well-protected lepidoptera crowded together on confined habitats (in Europe in the genus *Zygaena*). The incredible laziness of these diurnal lepidoptera from the subfamily of the **Ithomiinae** may be concluded from a remark of FERREIRA D'ALMEIDA in his very nice and biologically most interesting book: „Études sur les Lépidoptères du Brésil“ (Mélanges lépidoptérologiques) on p. 71, according to which the imagines resting on the blossoms or tips of the branches may be simply taken away with one's fingers; an observation which I can substantiate for a great number of species of the group. A necessary consequence of this character is the so-called formation of colonies or subordinate races, as by the very rapidly succeeding generations (each generation mostly does not need more than a month for its development) a certain pattern of marking is quickly fixed at a habitat to such a degree that even minute deviations from it number among the very greatest rarities. We may then find at the next habitat of the species a somewhat different colouring, though it shows here the same constancy as the former at the other habitat. I have considered it incorrect to denominate these mostly insignificant though constant deviations, as it has been done by others in other cases (such as in the *Erycinidae*). This method if being consistently performed, would have to increase to an infinite amount, and in composing this chapter on p. 116 to 165 the compiler was also led to confine the denomination to notoriously zoographical races and to avoid the denomination of subordinate races. The compiler has carried this out very meritoriously, and it seems that up to this day this excellent example has also prevented later describers to corrupt his succinct delineations by hair-splitting processes. May this chapter be also in future exempt from the denomination of transitory forms effacing the exact boundaries, without checking the admittance of really maintainable races and species with the impending opening up of South America *).

Mechanitis lysimnia F. (34 b). Larva on *Solanum arrebenta*; anteriorly very much narrowed with a small head; adult larva 31 mm long, of a bright yellow, across the dorsum 2 greyish-blue or greyish-green longitudinal bands; head black.

Pseudoscada. For the form *Ps. adasa* Hew. p. p. (41 c) FERREIRA D'ALMEIDA introduces the name **diversivoca** and places the species to *Dismenitis*. — For the other figure of *adasa* by HEWITSON (Exot. Butt. Vol. 4) the same author establishes the species **pseudodiversivoca**: smaller, the forewing more pointed, the demi-band and marginal band straighter; the upper discocellular is absent, the lower more curved. Southern Brazil. *diversivoca.*
pseudodiversivoca.

Ceratinia euryanassa (35 b). Larva on *Datura arborea*, in the adult stage up to 3 cm long, with a yellowish-brown head, the body with bright transverse stripes, ventrum deep green; pupa yellowish-brown, the wing-cases of a dingy white, marbled with dark, the pupa itself with numerous small dark spots and markings. FERREIRA D'ALMEIDA bases a new genus on this species: **Placidula**.

For *Cerat. daëta* Bsd. the same author introduces the genus **Mansueta**. The ♀ lays the eggs singly on *Solanum argenteum*. The adult larva is 23 mm long, above of a dingy greenish or bluish grey, beneath whitish, on the sides with a yellowish stripe-like colouring, across the dorsum transverse wrinkles of a deeper colouring, particularly the anterior part of the larva very much wrinkled.

With the newly established genus **Rhadinoptera** Ferr. d'Alm. its author combines a number of species that were before ranged in various other genera to which they had been placed according to the neurulation, such as *Ceratinia*, *Ithomia*, *Hypoleria*, *Heterosais*, *Pteronymia* etc. The first form of this series is:

Cerat. eupompe Hbn. (35 d). Larva on a *Solanea*; in the adult stage 25 mm, above greyish-green, on both its ends whitish, with transverse wrinkles, thoracal segments spotted dark, ventrum lighter. — Pupa green with small metallic spots.

*) A similar behaviour as we have ascertained for the insularly confined habitats of the neotropical wooded districts for many resident or weak-winged species of lepidoptera, occurs in mountainous species at such places where the alpine habitats are isolated by interposed valleys impassable to the alpine inhabitants, as for instance in the *Parnassiae* everywhere where these dwellers of mountains are. The one species *P. apollo* was provided with more than 100 names, more than 80 of them with the statement of geographically defined habitats. If the denomination is not checked in analogous cases, certain groups in South America will be loaded with a ballast of names that renders the orientation difficult instead of facilitating it.

- ellariformis*. **Napeogenes ellariformis** Strd. is quite similar to *Ithomia ellara* Hew. (37 e) but the median hyaline band of the hindwing extends into the cell, the veins separating the hyaline spots are not so thick black, the white marginal band spots are larger. From Peru.
- anteëlla*. **Nap. anteëlla** Strd. is almost like *Ceratinia antea* Hew. (35 d), but somewhat smaller, the blackish marginal band relatively somewhat broader, more blackish-brown than jet-black, the small white spots embedded there in larger and increased in number, as there is another one in the anal angle of the forewing; the marginal band of the forewing forms a small tooth at the veins 3 and 4. Described according to 1 ♂ from South East Peru.
- hemisticta*. **Nap. hemisticta** Schs. from Costa Rica forms an exact imitation of the Costa Rica form of *Hyposcada adelphina* (38 c), exhibiting on the forewing likewise 2 red-brown basal rays and several rows yellowish-white spots in the distal half of the wing; it thereby also resembles *Ithom. plaginota* (37 b), *Nap. amara* (35 d), *Cerat. callispila* (35 a) and some more lepidoptera from Costa Rica in the company of which it flies there.
- Ithomia drymo* Hbn. (37 g). Larva likewise on Solaneae, in 2 forms, with a red-brown or metallic lustrous bluish-green ground-colour. Pupa light green, at the wing-cases lighter with but 2 small golden spots at the sides of the capsule of the head. (FERREIRA D'ALMEIDA).
- bolivari*. **Ithom. bolivari** Schs. is very much like *patilla* (37 f), but the black wedge-shaped spot in the centre of the forewing has such a broad base that it occupies a whole third of the costal margin. Costa Rica.
- Hypoleria oreas* Weym. (41 a). Larva on Solaneae, in its juvenile stage white, in its adult stage 22 to 23 mm, with a somewhat flat body, of a pure yellowish-green with a fine dorsal line, laterally lighter, on the ventrum whitish; head green, on each side with a short, curved longitudinal row of black granulations. Pupa green, very much like that of *Ith. drymo*.
- Heterosais edessa* Hew. (41 g). Larva dull bluish-white, with a somewhat flat body; on the sides of the dorsum rows of darker or blackish-spots; across the dorsum darker transverse wrinkles. Pupa uni-coloured green, at the head golden dents with a blackish tip; larva on Solaneae.
- peruvicola*. **Leucothyris peruvicola** Strd. Like *Leucoth. solida* Weym. (38 g), but the hyaline band of the hindwing not expanded towards the anal margin, equably 5 mm broad, the marginal band only showing traces of 1 small white dot. The light spots are mostly somewhat larger; in the apical part of the forewing 3 small white spots. *completa* Hsch. differs from it by the white dots in the black marginal part being distinct there. South East Peru.
- Pteronymia euritea* Cr. (40 d). Larva on various Solaneae, of a pure green, with a yellow lateral stripe, across the dorsum many black transverse lines. Pupa like that of *Episcada clausina* (39 d), of a lustrous yellowish green, across the dorsum silvery transverse spots with a golden lustre, sometimes there are brownish markings exhibited; pupal stage lasting for about 10 days.
- Pteronymia sylvo* Hbn. Larva above greyish-green with dark, oblong transverse spots, ventrum yellowish-white, dorsum and lateral line yellow; some specimens also exhibit on the dorsum darker transverse markings. Pupa brownish, of a green lustre, with small metallic spots. On *Solanum argenteum* and allied plants.
- fumida*. **Pteron. fumida** Schs. Colouring and markings something like in *Pt. laura* (40 d), but very much larger, about the size of *denticulata* (40 b), easily discernible also by the absence of the jet-black cell end spot of the forewing which is distinct in *laura*; the transverse vein is only situate in a dark shade. Thereby the species becomes similar to numerous other species flying at the same place, such as *Callithomia hydra* Fldr., *Dircenna klugii*-♂ (36 e) though more in its form *chiriguensis* Hsch. etc. From Carillo in Costa Rica.
- godmani*. **Pteron. godmani** Schs. According to W. SCHAUS the two figures of *simplex* Salv. 40 b are not the different sexes of one species, but the form figured as a ♂ with the narrow, comma-like bent cell-end stripe is a different species and is therefore denominated *godmani* Schs. Common in Costa Rica at altitudes of more than 3000 ft.
- Episcada clausina* Hew. (39 d). The larva spins together some leaves of its food-plants (Solaneae) and in this cover it also uses to pupate. In its adult stage it is 16 to 17 mm long, above greyish-green, laterally tinted yellow; lateral stripe whitish, interrupted by small yellow spots; head blackish, dorsum with transverse wrinkles. Larva sometimes with a blackish lateral band. Pupa green or red-brown with silvery wing-cases.
- nebula*. **Episcada hymenaea** Prittw. (39 e) ab. **nebula** Ferr. d'Alm. On the subcostal and beneath the lower cell-wall a rusty yellow longitudinal ray. — ab. **stratonicis** Ferr. d'Alm. The yellow ray below the costa is present, but that below the median is absent. — Larva of *hymenaea* (39 e) 22 to 24 mm long, above greenish-grey with a white lateral stripe, which is interrupted by small yellowish spots, above it a blackish longitudinal shade, the transverse wrinkles dark green; on Solaneae. Pupal stage 10 days. The imagines fly in Southern Brazil particularly in winter.
- umbraticola*. (*Rhadinoptera*) **umbraticola** Ferr. d'Alm. Colouring and marking of *Heterosais nephele edessa* Hew. (41 g), but the demi-band at the cell-end of the forewing wedge-shaped, the white spot behind it distinct, the mar-

ginal band of all the wings dotted whitish. Beneath this marginal band is rust-coloured, bordered with black. Described according to 1 ♂ from Rio taken in April. — For this species the group *Pigritia* was introduced by the author FERREIRA D'ALMEIDA. — **genytilis** *Ferr. d'Alm.*, for which the author has likewise established a group (*Languida*), is entirely like *umbraticola*, but somewhat smaller, the white marginal spots of the forewing well visible, but those of the hindwing indistinct. One ♀ taken in November in the State of Rio. genytilis.

Satyridae.

Antirrhaea ulei *Strd.* is a species from Roraima in Venezuela, with an expanse of 90 mm, with a dark band of the forewing extending through the cell, behind which there are 6 dirty white spots in a greyish band. ulei.

Taygetis weymeri *Schs.* (193 d) from Costa Rica somewhat recalls beneath *T. umbinata* (45 b), but it is easily discernible by the straight, not angled margin of the forewing, which extends like in the smaller *blanda* (45 d). As in *blanda* also in *weymeri* ♀ the postmedian transverse line is distally bordered with whitish, though bent in an obtuse angle, whereas in *blanda* it is almost straight. weymeri.

Tayg. celia. As f. *magna* *Ferr. d'Alm.* a large form is described beneath resembling *cleopatra* (45 c), approximating the form *haenschi* (45 b), according to a ♀ which probably originates from the State of Rio in Brazil; the exact habitat is not stated. magna.

Tayg. fulginia *Ferr. d'Alm.* has the size and approximate shape of *T. rectifascia* (45 a), but the under surface is not so monotonously dark brown, but with more abundant and brighter markings. Established according to a single ♂ taken in October at a swampy place in the State of Rio. fulginia.

Euptychia agnata *Schs.* (193 d) from Costa Rica, resembles *juani* (49 a), but it is much larger. The ground-colour beneath is more yellowish-brown, the discal bands are connected before the posterior margin of the hindwing, above the large eye between the median veins there is a bean-shaped spot. agnata.

Eupt. drymo *Schs.* (193 a) is easily recognizable by the yellowish-red lighter part in the disc of the forewing. The two large eye-spots of the hindwing beneath are proximally bordered by two dark arcuate stripes. Costa Rica. drymo.

Eupt. hesione *Sulz.* (46 d). Eggs black, globular. Larva on Gramineae, in its adult stage about 30 mm long, green, with white granulations and pinkish-red anal apices; the 3 first rings on the dorsum brownish. Pupa yellowish-green, yielding the imago after 12 days.

Eupt. byses *Godt.* Egg globular, whitish. Larva on grasses, whitish green with a more distinctly green median line, on the dorsum with transverse wrinkles and covered with whitish granulations. Pupa 13 mm long, on the thorax with a keeled hunch, greenish white with a slight lilac reflection. — **bimaculata** *Ferr. d'Alm.* is a female form of this species exhibiting beneath a yellow costal spot on the forewing, yellow instead of white apical dots, in the hindwing only extinct undulate streaks, but instead of it a white, dirty discal spot; described according to 1 ♀ (aberrative?). bimaculata.

Eupt. pavunae *Ferr. d'Alm.* approximates *harmonia* (48 b), but beneath it is darker brown, at least in the basal half, the two dark marginal lines slightly undulate. Forewing with 4, hindwing with 5 brown dots, the discal transverse lines straighter. Rio, in swampy places near the ocean, at some places not rare. pavunae.

Of *Eupt. herse* *Cr.* (49 e) a form is described: **bellatula** *Ferr. d'Alm.* from a swampy district of the State of Rio, the diagnose of which also fits normal specimens and is apparently only distinguished by a bright violet reflection above. This form as well as the type exhibit a remarkable harmony with certain species of the Erycinid genus *Euselasia*. bellatula.

Eupt. arnaea priamis *Ferr. d'Alm.* is a form from the State of Rio, in which the very bright lustrous blue of the hindwing passes over to the forewing across the proximal margin of it. Beneath the distal transverse line is slightly angular at the 1st median vein. priamis.

Eupt. suivalens *Dyar* (193 f) is apparently not particularly similar to any other *Euptychia*; in its size and exterior it is somewhat like *calixta* (48 c), but the under surface is differently marked, in the anal part of the marginal area discoloured ruddle-red, the ocelli scarcely recognizable except 2 at and above the middle of the margin, the transverse line of the hindwing coarsely dentate. Mexico. suivalens.

Eupt. pertepida *Dyar* (193 f). Above and beneath suffused with a dull purple brown; above there are only before the middle of the margin on the hindwing 2 small black punctiform spots, beneath there are besides 2 largely dentated transverse lines through the disc. Mexico. pertepida.

Chionobas osleri *Skinn.* is a newly described variety from the *alberta*-group of *Ch. tarpeja*. osleri.

Catargynnis macasica *Strd.* is very much like *pholoë* (57 d) and only differs by the orange spots of the forewing above being larger and the under surface being somewhat more variegated, especially decorated with larger silvery spots. macasica.

Catarg. dryadina *Schs.* (193 e) from Costa Rica is a little like *gigas* (57 c) or *loxo* (57 d), but the hindwing above has no orange margin, and beneath the ocelli are larger, more variegated, especially also on the forewing. dryadina.

roraimae.

Pedaliodes roraimae *Strd.* Beneath similar to *prosa* (53 f), but the ground-colour is darker, in the forewing almost black, in the hindwing very finely marbled with brown. Transverse band not so deeply dentated, but more finely serrate-dentate than in *prosa*. Expanse of wings: 49 mm. Venezuela.

maria.

Ped. maria *Schs.* Above dark brown with a still darker marginal line. Beneath the same, the lines darker; in the cell a median arcuate line, behind it a line being undulate before the proximal margin, somewhat oblique to the costal margin. In the hindwing an antemedian line slightly indented at the proximal margin, and a postmedian line being proximally bordered with dark red, behind which there are 3 black ocelli encircled by yellow and containing a white dot. — ♀ not quite so dark, the lines and 1 or 2 ocelli also above visible, the postmedian line proximally shaded with dark red. Hindwing beneath with a small ocellus towards the costal margin and yellow dots between the veins 4 and 6, the ocelli otherwise as in the ♂; ♂ 43, ♀ 45 mm. — From the Volcano Sa. Maria in Guatemala, taken at an altitude of 4500 ft. in April, July, October and November.

Erycinidae.

To the „Additions“ on p. 726 to 728 we add yet **Eucorma sanarita** (113 B e) which was in the meantime described by W. SCHAUS, having been discovered in the Brazilian Province of Minasgeraes and figured according to a specimen sent by Mr. ZIKAN. Under surface like above.

To *Lymnas thyateria* we have to remark that FASSL took in copula with a typical ♀ corresponding with our figure 131 h a similar lepidopteron (113 B e) as was hitherto ranged with the genus *Estemopsis* as being allied to *inaria*.

Nymphalidae.

Genus Colaenis.

Col. euchroia. The names of the forms *telesiphe* Hew. (p. 400, line 7 from below) and *tithraustes* Salv. (line 5 from below) have been mixed up with each other both in the text and the table belonging to it (84 d).

Genus Melitaea.

M. chara *Edw.* (88 f) COCKERELL considers to be the eastern form of the subalpine or boreal *minuta* which flies at much greater altitudes.

fulvia.

M. leanira fulvia *Edw.* forms a transition to *wrightii*; the hindwings are beneath whitish-yellow instead of tan-coloured. The form is mentioned by COCKERELL from New Mexico.

Genus Phyciodes.

dora.

Ph. dora *Schs.* from Costa Rica entirely resembles *levana* (88 h) above, but on the hindwing a chain of ochreous rings extends between the ochreous-yellow median band and the margin.

Ph. coela *Drc.* As the ♂ of this species, the figure (91 c) and description (p. 444) of which seems to represent a ♀, W. SCHAUS figures a lepidopteron from Costa Rica, almost all the specimens of which exactly resemble the ♂ of *sestia* (90 g) except the brownish-yellow transverse band of the hindwing being a little broader and of a more fiery colour.

Ph. phlegias *G. & S.* The ♀ of this species, the ♂ of which we have figured 99 b by the name of *platytaenia*, is somewhat larger, the spots and bands are broader and bone-coloured, so that it approximately resembles the upper surface of *tulcis*-♀ (90 c).

metharmoi-
des.

Ph. metharmoides *Fassl* (102 C a as *metharmeoides*) from Teffé (Ega) on the Amazon River, is one of the largest species of this genus. The under surface corresponds to the upper surface, but on the forewing the colours are duller, and the hindwing shows a series of white marginal spots.

pseudoccele-
mina.

Ph. pseudoccelemina *Strd.* in its shape and marking is very much like *ithomoides* (90 k); the marking of the forewing is almost the same, but it is without the yellowish-brown inner-marginal stripe, whereas the hindwing above is almost without markings. Colombia.

sticta.

Ph. sticta *Schs.* (192 h) is the exact image of *Napeogenes hemisticta* with which it flies together in Costa Rica. It approximates *Ph. nigripennis* (90 i), but it has the shape of the wings of *sestia* etc. The distal half of the forewing more intensely and abundantly spotted whitish, of the hindwing only the anal half is yellow.

Genus Nessaea.

juventia.

Nessaea obrinus faventia *Fruhst.* „♂. Above on the forewing with a green oblique band narrowed and rounded off both costalwards and analwards. The yellow area of the hindwing, however, is much more extensive than in specimens from Surinam. Under surface much paler green with quite unnoticeable brown longitudinal bands the distal (submarginal) one of which is altogether absent. Patria: Matto Grosso.“

Callithea boyi (102 C d). This new species was discovered by Mr. CARLOS BOY in September 1922 near Mujo (Lower Amazon); before me was a ♀ which has been figured. It is allied to *batesii* (99 f); the differences above are to be seen from the figures, the under surface of the hindwing, however, is not verdigris as in *markii*, but of a delicate grey which is lighter in the larger distal half; yellow colouring is only noticeable in a spot at the base of the wing and in a stripe not coherent with the basal spot, at the proximal margin; the four rows of black spots consist of almost equally large spots, the proximal three rows being composed of smaller spots than in *batesii*, whereas the submarginal spots are larger and distinctly crescentiform. The under surface of the forewing resembles more that of *markii* (99 f), but the basal yellow colouring occupies a larger space, the distal half is brightened up in the centre, and there are only 3 black spots, the anterior one of which is very small, whilst the posterior one is only indicated by some scales.

Callithea batesi munduruca Fassl. „An extremely eastern form of *batesi*. Mr. OTTO MICHAEL, already years ago near Itaituba, took 3 of it which Dr. STAUDINGER, owing to the absence of the ♂♂ belonging to them, determined to be questionable ... of *markii*, until I succeeded 2 years ago in capturing also ♂♂ at several places of the right and left banks of the Tapajoz. They are almost invariably one third smaller than those of the *batesi*-type from Teffé. Above much more reddish-violet; the verdigris margin on both wings is narrower, but more prominent and proximally more distinctly defined than in *batesi*, at the costal margin of the forewing extended more proximally. The yellow basal spot on the forewing above is bent more proximally, but in the hindwing it only fills up the base of the cell, whereas in *batesi* it almost occupies the proximal half of it. The violet hue on the yellow spot is less intense than in *batesi*, whereas the white fringes of both wings are much stronger. Distal half of the under surface lighter silvery, almost invariably the distal 4 marginal dots in the apex of the forewing well developed, particularly the lowest, whereas in *batesi* they are almost invisible and almost entirely covered by the verdigris tint. ♀: ground-colour above black, without any trace of a greenish reflection (in *batesi*-♀ always with it); the verdigris distal margins above and the under surface of a purer and lighter silvery lustre; body, particularly ventrum beneath almost purely white (in *batesi* grey; the other differences like in the ♂♂. — Itaituba, Miritituba, Cachcêra I, Concessão and Monte Christo on the Rio Tapajoz, in single specimens and rare; the ♂♂ extremely rare and always flying high up. Both sexes do not react upon any bait. „This *Callithea* is a double of the *Phalcidon*-form *Agrius anaxagoras* likewise occurring on the Tapajoz.” — **aimeeana** Fassl. „♂ mostly smaller than *batesi*, but invariably larger than *munduruca*-♂. Above similar to the latter, but the green marginal bands of both wings much narrower and more extinct, and the uppermost 3 submarginal ocelli in the apical part of the forewing showing through above from beneath, and the extreme apex of the wing shaded with black from outside. ♀ like that of *batesi*, but at once discernible from it by the double row of black submarginal ocelli of the forewing beneath. Manicore on the Rio Madeira, captured in small numbers; the ♀ is very rare.” (FASSL.)

Genus *Catagramma*.

C. discoidalis Guen. (p. 494) = *brome* Bsd. (101 B b).

C. mena Stgr. (p. 494). The original description entirely fits *aegina* Fldr. (101 B c). We were unable to ascertain whether it is a local form, because there are no specimens from Peru (Chanchamayo) at our disposal. — **lamprolenis** *subsp. nov.*, from Bolivia (Rio Songo, 750 m, discovered by A. H. FASSL) is somewhat larger than specimens from Ecuador (Macas), has a somewhat narrower yellow band of the forewing and a smaller blue spot on the hindwing exhibiting also a duller and deeper lustre. — In **bella** *subsp. nov.* from Eastern Colombia (Villavicencio, 400 m, A. H. FASSL) the blue spot on the hindwing is still smaller and the veins crossing it are remarkably scaled black. The ♀ has a rounder shape of the wings, the ground-colouring is duller, and the yellow band of the forewing is broader and lighter than in the ♂.

C. transversa *sp. nov.* (102 C e) is before me in a ♂ from „Bolivia”. The marking above is to be seen from the figure. The forewing beneath is like in *lyca* (101 B c) except the different shape of the yellow band, whilst the hindwing beneath is conspicuous for the great extent of the black colouring; all the yellow bands are narrower than in the allied species, particularly the otherwise very broad second band (counting from the margin) is very narrow and scarcely half as broad as the other yellow bands; the yellow marginal band is in the posterior half replaced by a greenish (not blue) one; the bluish-white median spots are very small, the anterior group containing two, the posterior group three spots, whereas the fourth (at the proximal margin) is replaced by a small blue dot.

C. hystaspes F. is on p. 494 misprinted into *hystaptes*.

C. platytaenia Rüb. (102 C b) is considerably different from all the other species of this genus by the shape of the yellow band of the forewing; the under surface resembles that of *denina* (101 B b). Western Colombia (Rio Dagua).

Cat. hydarnis Godt. (p. 496) we have subsequently figured (102 C a). About the ♀ of *C. excelsior michaeli* Stgr. A. H. FASSL writes: „The extremely rare ♀ of *michaeli* of which I only took 2 specimens is very much like *C. excels. mauensis*-♀ described above, except the yellow bow of the forewing being exactly as shortened and blunted off like a club as in the ♂. The forewing is without a reflection, the hindwing of a lustrous sky-blue colour.“ — The said author presumes that the red-banded forms of this species form a separate group the occurrence of which is confined to the northern bank of the Amazon River. — *coruscans* Rüb. (102 C c) differs from the other forms of it by the magnificent blue lustre of the whole upper surface and by the shape of the yellow band of the forewing. Matto Grosso (Carumba). — *inferior* Btlr. from Peru is quite similar to *speciosa* (p. 495), but the band of the forewing does not begin at the base of the wing, but the basal part of the forewing remains black. — *mauensis* Fassl. „The new *excelsior*-form from the Rio Maues has in both sexes a much narrower yellow bow notched by the veins. The magnificent blue lustre with a more violet tint is intensified in the distal margin of the hindwing, without being proximally distinctly defined to a light blue spot. The somewhat lighter ♀ with a black forewing without a reflection differs very much from *excelsior*-♀ by the hindwing being sky-blue and lustrous as far as the base and being finely interrupted by the black veins like a net. The magnificent blue colouring intensifies towards the distal margin. Several couples from Mauès and Massauary; a rare and most beautiful insect.“

C. arirambae Ducke *) from the Campos do Ariramba (to the east of the Central Trombetas), from an altitude of about 280 m, is „not rare in the little forests of the banks of larger brooks“. The ♂ on the black upper surface shows a deep blue reflection, the ♀ does not. The under surface of the forewing corresponds to the upper surface, but the colours are duller, and there is a blue submarginal line; the under surface of the hindwing is similar to that of *excelsissima* (101 B f), but the yellow bands are narrower; the white subapical spots are larger than in this and so near to each other that they almost form a band. — *albifasciata* subsp. nov. (102 C c), discovered by Mr. A. H. FASSL near Manaus, differs by the white subapical spots being confluent and forming a complete band only parted by the black veins.

C. sorana splendida Rüb. shows a more intense blue lustre above, and the red markings are more reduced: the band of the forewing is narrower, the red basal part shorter, on the hindwing stunted to a small spot parted by the black veins; the under surface corresponds to the upper surface. Bolivia (Rio Songo, 750 m).

C. strympli Fassl. „This new form belonging to the *texa-lepta* group is above most similar to the Central Colombian *C. texa* Hew. (101 B g), but the red discs of both wings are distally surrounded by a light blue reflecting zone, whereby it entirely resembles a miniature *Agrias claudia michaeli* from the same habitat. The under surface is at once and conspicuously discernible from *texa* by the red spot of the upper surface appearing beneath light orange, and by the rows of blue dots and the central ocelli being very distinctly visible in the black filling and much larger and of a light sky-blue colour.“ Habitat: on the right bank of the Tapajoz, above Monte Christo, a day's trip below Itaituba. — „On my Hingu-expedition I took, 30 km below Alta Mira, a ♀ of *Catagramma* which I might regard to belong to *strympli*-♀. All the red above is orange, the subapical band white; the disc of the hindwing is only indicated by an oblong discal spot of yellowish-brown scales. The under surface entirely corresponds to that of the ♂ described above, but it is in all its parts less intensely coloured and in all its light places much paler.“

C. astarte ab. *preta* Fassl ♂ ♀. „This aberration occurring amidst the types is very conspicuous by all the three blue ocelli parted by the radial yellow median streak on the hindwing beneath being entirely absent, whereby the insect looks beneath quite strange. 1 couple from Obidos, Amazon.“ — *obidensis* Fassl ♂. „Another conspicuous aberration which has a quite normal under surface except the entire absence of the yellow horizontal median stripe separating the 3 central ocelli of the hindwing from each other. I take also this form of which I took 2 equal specimens near Obidos only to be an individual aberration of *C. astarte*.“

*C. peristera coeliger*a Fassl ♂. „This insect looking like an „aberration of a cold climate“ has all the blue dots and the blue submarginal border of the hindwing beneath flown together, so that a large sky-blue disc is produced almost covering the whole hindwing, by which the insect looks very singular.“ Discovered near Santarem — Taperinha.

*) Mr. H. STICHEL, at Berlin, comments (in: Neue Beiträge zur Insektenkunde Vol. I, No. 2, p. 15, of June 30th 1916) upon my having left out this species in dealing with this genus on p. 493 seq., „although it has been published 2 years before the edition of the elaboration of this genus . . .“ (July 1915). At that time this description was indeed still unknown to me, but it seems that also Mr. STICHEL only knew it after the 1st of January 1916, or else he would have already expressed his critic in the No. 1 of his afore-mentioned journal which was published on that day. — Mr. STICHEL besides reproves the absence of „*Catagramma*“ *branicki* Oberth., although it is mentioned on p. 502 as *Callicore branicki* and also figured on t. 102 B. Mr. STICHEL only did not recognize the generic position of this species, or else he would not have missed it in the genus *Catagramma*.

C. texa-texotitania Strand. The author says: „A ♂ from South East Peru to a certain degree forms the transition from *C. texa* Hew. to *titania* Salv. Above like *texa* as it is figured in SEITZ' work, except the red basal area being in the costal half of the wing less far extended towards the apex, so that the costal margin of the area is here only about 9 mm long, whereas in *texa*-figure 101 B g in SEITZ it is about 13 mm long; moreover, the red area is besides diminished by a black dorsal-marginal band almost touching the anal angle. In the hindwing there are near the anal angle two minute, light blue sublimbal spots. — The under surface agrees better with *C. titania*; but from the figure in SEITZ it differs by the red area reaching the anal angle and a light costal band of the forewing being only present in the basal quarter and only linear, whereas in the hindwing of my specimen the metallic markings are more bluish, the yellow sublimbal band more distinct, the following yellow band distally not interrupted midway and being there almost contiguous with the oblique median transverse band. — It is rather a form of *texa* than of *titania*, since the contours of the wings are like in *texa*. Perhaps a distinct species.“ *texotitania*.

C. hydaspes aiaces Fruhst. „♂ above very closely allied to *hydaspes delmas* Fruhst. (p. 599) from Paraguay. The red band of the forewing, however, is broader, the blue area of the hindwing still more reduced. Under surface: the yellow preapical band of the forewing broader than in *hydaspes* from Espiritu Santo. The yellow parts of the hindwing still a little more extensive than in specimens from Paraguay, the black spots and bands accordingly reduced. The four pupils in the black median area of the hindwing predominantly yellow instead of blue. Patria: Rio Grande do Sul, to the north distributed as far as São Paulo in Brazil.“ *aiaces*.

C. pitheas pallescens Fruhst. „The red spots on the hindwing above longer, the oblique band of the forewing narrower than in *C. pitheas* Latr. (102 A b), the ♀♀ besides with a distinct, yellowish preapical band of the forewing, which is absent in *pitheas* from Colombia. The black ocelli of the hindwing as a rule smaller than in *pitheas*. Patria: Venezuela.“ *pallescens*.

C. codomannus paulistanus Fruhst. „♂ and ♀ very closely allied to *selima* Guén. (p. 494) from Minas Geraes, from which, however, it is at once discernible by the still more reduced red colour on the hindwing above and the almost disappearing reddish-yellow preapical spot of the forewing. The under surface is more different, e. g. the yellow preapical spot of the forewing is scarcely half as broad as in *selima*, the yellow submarginal band of the hindwing is reduced to about a third of the extent of *selima*, accordingly the black band is widened and the discal spots are contiguous. Patria: São Paulo.“ *paulistanus*.

C. lyca maroma Fruhst. „♂ differs from *lyca* as DOUBLEDAY and SEITZ-RÖBER figure it (101 B c) by a longer, more uniformly broad and more conspicuous orange band on the forewing above. The blue reflection of the hindwing, however, is considerably reduced. The under surface is most similar to *lyca acrias* Godm. (p. 598), . . . but the bluish-white pupils of the black discal area of the hindwing are larger. Patria: Colombia, no exact habitat mentioned.“ — **exultans** Fruhst. „Above most closely allied to *aegina* Fldr. (101 B c) from Ecuador with a much broader orange band of the forewing and a more extensive blue reflection on the hindwing above. The black submarginal band of the hindwing beneath narrower than in *aegina*, as FELDER figures it. Patria: Bolivia.“ *maroma*.

C. eunomia triteia Fruhst. „Distinguished from *C. eunomia* Hew. (101 B h) from „Quito“ by the narrowed red area of the forewing being confined to a vertical band of a finger's breadth, since a black basal zone advances as far as the middle of the cell. Patria: Ecuador, Hazienda Anna Maria, Querindo.“ *triteia*.

C. pygas catharinensis Strand. On the hindwing beneath the black postmedian band which otherwise exhibits blue median spots, is in the centre yellow like the ground-colour, at the proximal margin at most very slightly bluish. — ab. **sublimbalis** Strd. in the hindwing above does not show any bluish-white sublimbal spots, the length of the forewing is only 22 to 23 mm, and the light subapical marking of the forewing is very much reduced. Santa Catharina. *catharinensis*, *sublimbalis*.

C. pyracmon Godt. E. STRAND, in dealing with a ♀ of this species from an unknown habitat which he connects with the figure on table 101 B h having been done according to a ♂, proposes the eventual name **pyracmonides**. The specimen the upper surface of which has been figured originates from Surinam. *pyracmonides*.

C. aphidna aphidnella Strd. According to a ♂ from Peru showing slight differences from the original description, the author introduced this eventual name. *aphidnella*.

C. zerynthia Burm. Of this species I have neither seen a specimen nor obtained a description; it is presumably synonymous with another species; in KIRBY's Catalogue of the Diurnal Lepidoptera and its Supplement it is not mentioned. Mr. H. STICHEL in a letter presumes it to be a subspecies of *sorana*. *zerynthia*.

Genus **Perisama**.

Peris. insignis sp. nov. (102 C a) from West Colombia (Rio Dagua, 2000 m, A. H. FASSL) is distinguished by the broad golden green area of the forewing above. The hindwing beneath resembles that of *humboldti* (102 A e), but the yellow is much paler and the black dots are arranged in a straight line; the under surface

of the forewing is greyish-black, the basal half of the discal cell greyish-yellow, the apex of the wing yellow like the hindwing; at the costal margin in the centre of the black area a white, long-extended spot, and between this and the yellow discocellular spot a small blue stripe. Also similar to *tryphena* (102 A f), particularly above, but the under surface has no blue markings and on the hindwing the distal black line is much less dentate and stronger, and the centre shows 5 intense black dots.

P. eminens Obth., on p. 498, was considered to be an aberration of *oppelii*; in the meantime it was found out to be a distinct species and we therefore figure it (102 C b). The species occurs in Northern and Central Peru.

pseudolebasi. *P. lebasii* Guér. The form figured 102 A g has been denominated by EMBRIK STRAND **pseudolebasi**; the author presumes it to be a species different from *lebasii*. This would be correct, if — what is not proved — HEWITSON's figure represents a typical specimen. — Moreover, E. STRAND established the aberration of *lebasii*: **derufata** which he describes as follows: „The specimen before me differs from HEWITSON's figure, by the following marks; the band of the forewing is narrower (about 2 mm broad), on vein 2 narrowly interrupted, and the anterior proximal angle is extended towards the basal longitudinal streak which, however, it does not touch; on the hindwing beneath the red costal-marginal streak reaches to the distal transverse line; the forewing beneath is not marked red, but the terminal half of the cell is blue and separated from the greyish-whitish basal part merely by a small dark diffuse patch, the other blue markings of this under surface being similar as in the figure cited, though less distinctly defined.“ Colombia. — **dividens** *subsp. nov.* from Western Colombia (Rio Magdalena) has a very narrow magnificent band being broken up into single spots, and a broad marginal band of the hindwing.

zyxata. *P. diotima zyxata* Fruhst. „Peru, Pozzuzo. ♂ of a larger habitus and above with much larger, greenish-blue intramedian spots than *diotima* (102 B a). Under surface darker, the neat red submarginal line of the hindwing is brighter. — *zurita* Fruhst. Ecuador. An excellent form, recognizable by an ultracellular, supplementary blue intramedian spot of the forewing which is united with the bluish-grey cellular streak. Under surface: the red cellular spot of the forewing is smaller than in the Peruvian and Bolivian forms, sometimes almost extinct, but invariably faded. Forewing besides characterized by another white costal spot and two greyish-brown blurred intramedian maculae. — **demata** Fruhst. Ecuador, Macas. Whilst *zurita* most probably originates from the Pacific part of the Cordilleras of Ecuador, *demata* is a vicarious form from the Amazon part of the Andes of Ecuador. It originates from the Rio Upano, a source of the Amazon. The blue spots above as in *zurita*, but smaller, darker. The large cellular spot on the forewing beneath, however, again very large, equalling that of *zyxata* Fruhst. from Peru. The white preapical spot still more prominent than in *zurita*, the hindwing above, however, with a blurred marking.“

P. cardases Hew. (102 B b), according to FRUHSTORFER; is a species different from *diotima* (102 B a). Ecuador.

cecidina. *P. cecidas cecidina* Fruhst. „Peru, Cuzco. It differs from *cecidas* Hew. (102 B a) from Ecuador by larger blue intramedian spots of the forewing and an almost twice as broad light silvery grey instead of blue distal margin of the hindwing.“ — *yurapa* Fruhst. „Peru, Pozzuzo. It differs from *cecidas* Hew. of SEITZ' figure (102 B a) and from *cecidina* by the presence of a bluish-green complementary spot beyond the cell of the forewing, so that this species exhibits the same peculiarity as *P. diotima* from Peru.“

xynites. *P. morona xynites* Fruhst. „Peru, Pozzuzo. Much larger than *morona* Hew. (102 A d) from Bolivia, the green longitudinal band of the forewing narrower, the greyish-blue marginal zone of the hindwing much more extensive.“

plistia. *P. euriclea plistia* Fruhst. „Peru, Pozzuzo. ♂ identical with *euriclea* Hew. var. (Exot. Butt. IV t. 17 f. 90, 91); and different from the figure RÖBER-SEITZ (102 A h) by the green band of the forewing being parted in *plistia*. The greenish border of the hindwing in *plistia* narrower than in *euriclea* from Colombia.“

hilara. *P. hilara* Salv. (102 C c) from Peru (Chanchamayo) is allied to *cabirnia* (102 A d, e). Above it differs from it by the shape of the median band of the forewing and the marginal band of the hindwing, as is to be seen from the figures. Beneath the apex of the forewing is of a pure silvery white, in the black disc there is a blue band broken up into minute spots, and on the hindwing the proximal line almost extends to the proximal margin; between the two lines there are 4 black dots.

clara. *P. clara* sp. n. (102 C d) from Eastern Colombia (Upper Rio Negro, 800 m, A. H. FASSL) resembles *yeba* (102 A h). The upper surface exhibits at the end of the discal cell of the forewing a more strangulated and narrower marginal band. The differences beneath are exhibited in the figure.

marianna. *P. marianna* sp. (?) *nov.* (102 C b) from Western Colombia deviates above from *ilia* (102 A h) by the absence of the submarginal spots of the forewing, a more complete median and a narrower marginal band of the hindwing. The under surface shows the differences to be seen from the figures.

thryoessa. *P. cabirnia thryoessa* Fruhst. „Peru, Chanchamayo, Pozzuzo. An excellent form; the green basal ray of the forewing is not as in *cabirnia* Hew. (102 A d e) from Bolivia, united with the coherent and much broader submarginal band. The light green zone of the hindwing consists of single, proximally pointed spots.

The red zone of the forewing beneath is reduced to a relatively small spot before the apex of the cell — the black area thus covering the whole median space of the forewing.

P. vaninka philiatra Fruhst. „Bolivia, La Paz, Chulumani, Peru, *philiatra*. Chanchamayo. A well distinguished race figured already by RÖBER-SEITZ (102 A g h) and differing from *vaninka* Hew. from Colombia by the broader blue zone on the hindwing above. — *volara* Hew., from Venezuela, is not a species as HEWITSON and RÖBER consider it to be, but surely only a territorial race of *vaninka* Hew. — **gonalia** Fruhst. Venezuela. It is said to be another territorial race excelling *volara* in the size and extent of the bluish-green bands on the forewing and particularly also on the hindwing. In *gonalia* the black dotting on the hindwing beneath is also more prominent. It is not certain whether it is a form of *volara* from the rainy season or from the mountains.“

P. alicia paralicia Fruhst. „Peru. Of a larger habitus and of rounder wing-contours than *alicia* Hew. (comp. *ilia* 102 A h). The bluish-green band of the forewing is much more extensive, the submarginal band of the hindwing, however, scarcely half as broad. Under surface of hindwing with much thinner black lines and extremely small dots. It may be a form from the mountains or the rainy season.“

P. oppelii aisepus Fruhst. „Ecuador. The upper surface differs from *oppelii* Latr. (102 A e f) by an extremely reduced, sometimes only thread-like submarginal band on the hindwing above.“ — **angustifasciata** subsp. n. from Eastern Colombia (Upper Rio Negro, 800 m) has a very narrow marginal band of the hindwing and the yellow basal area of the forewing beneath is very much strangulated.

P. humboldti vestina Fruhst. „Venezuela. ♂ above recognizable by stunted greenish spots and bands on both wings and thereby forming a transition from *humboldti* Guér. (102 A e) to *humboldti tringa* Guér. (102 C b, c) from Peru. Under surface of forewing much more like *tringa* Guér. than Colombian specimens.“ — **exuberans** Fruhst. „♂ differs from *humboldti* Guér. by the carmine discal spot being broadly diffused as in *tringa* Guér. on the forewing beneath. This is the form figured as *humboldti* by RÖBER-SEITZ on t. 102 a. Patria: Colombia.“ — We remark hereto that *humboldti* varies so very much in the size of the red spot on the forewing beneath that it seems not to be justified to denominate the different forms. — **fasciata** subsp. nov. from Bolivia (Rio Songo, 750 m, A. H. FASSL) has a narrow, coherent magnificent band traversing the whole wing, but the equally coloured basal ray does not flow together with it. The red basal area of the forewing beneath is much larger, the black lines of the hindwing beneath are much closer together. The small insect is also smaller and makes the impression of a separate species. — **tenuifasciata** subsp. n. from Peru (Chanchamayo) has a still narrower magnificent band on the forewing above than the preceding, the basal ray is likewise isolated; the red area on the under surface is less developed than in *humboldti*.

P. tringa testacea subsp. n. from Venezuela has a brownish under surface of the hindwing; the same colouring is exhibited on the light parts of the forewing beneath. — **tringa** (p. 497) has been figured on t. 102 C b.

P. guerini aureilimbata subsp. n. from West Colombia (Rio Magdalena) has a narrower and broken-up magnificent band of the forewing and lustrous golden marginal band of the hindwing.

P. dealbata sp. nov. is presumably a subspecies of *compaspe* (103 a), much smaller (about the size of *diotima* 102 B a); beneath very much like *cardases* (102 B b), but the red markings of the forewing are coherent. Patria?

Peris. camelita Hew. (p. 498), *moronina* Rüb. (p. 498), and *jurinei* Guér. (p. 499) we reproduce subsequently.

Genus **Callicore**.

C. consobrina Guér. (102 C a). We have figured specimens corresponding with GUENÉE's description. Western Colombia.

C. gabaza stenotaenia subsp. n. from East Colombia (Upper Rio Negro, 800 m, A. H. FASSL) has a narrower band of the forewing, but a longer and much broader marginal band of the hindwing.

C. seropina sp. n. (?) (102 C a) has been discovered by Mr. A. H. FASSL near Alta Mira on the Rio Xingu, in January. Without a blue reflection; in the ♂ the band of the forewing is much narrower and somewhat shorter, in the ♀ the black spots in the „eights“ of the hindwing beneath are separated.

C. clymena ab. **patriotica** Strd. „A ♂, unfortunately without the habitat being stated, distinguished by a broad green band of the hindwing being midway 2 mm, at the end about 1½ mm broad, and a slightly broader (about 2½ mm) bluish-green band of the forewing, which is more regularly defined and more coherent than in the figure of SEITZ' work (102 B c), thus somewhat like in CRAMER's figure, except that it is excised on the proximal side in area 3 and forming otherwise proximally 2 or 3 small teeth. The marking on the forewing beneath as in SEITZ, that of the hindwing, however, more like in CRAMER's figure, since the black markings are of a deeper black and broader, and besides the light triangular area in an apical direction from the two „eights“ is, like in CRAMER's figure, almost reduced to a punctiform spot; of the two spots of the anterior eight the anterior one is large and circular, whereas the posterior (proximal) spot is almost entirely confluent

with it and about the shape of a comma; of the two white sublimbal bands of the hindwing the distal one is only half as broad as the proximal one. Expanse of wings: 39, length of forewing $22\frac{1}{2}$ mm.“ — The aberration figured 102 B c has been denominated by EMBRIK STRAND: *roeberia*.

bifasciata. **C. bifasciata** Weym. seems to coincide with *phlogaea* (102 B d). The specimen described (also from Colombia) only seems to differ from *phlogaea* by a more intensely green-scaled base of the forewing; it is therefore an aberrative form of *phlogaea*.

ditaeniata. **C. ditaeniata** nom. nov. (= *bifasciata* Fruhst. [nom. praeocc.]). „♂ above most closely allied to *euclides* Latr., the magnificent band of the forewing, however, slightly narrower and proximally with that magnificent azure reflection by which *eluina* Hew. and *eupepla* Godm. are distinguished, although it is not as extensive as in these forms. Hindwing with a submarginal band removed far proximally, of about the extent as we observe in *euclides* Röber (SEITZ t. 102 B e). Distally to this *euclides*-band we find yet another antimarginal stripe of a dull light blue, about of the extent as in *neglecta* (102 B e) Röber in SEITZ. The under surface in almost all the essential marks corresponds with *euclides* (102 B e) RÖBER-SEITZ. Patria: Colombia.“

C. coelinula Guén. (p. 503). FRUHSTORFER declares it to be merely an insignificant local race of *eluina* Hew. (102 B e).

teana. According to FRUHSTORFER, *C. carmen* Guén. (p. 504) is „an absolute synonym of *C. candrena* Godt. (102 B g), whereas the much smaller race from Rio Grande do Sul may be denominated without hesitation (*teana* Fruhst. i. l.).“ This form may be identical with that figured as *candrena* on t. 102 B g. But as *carmen*, according to the material before us, exhibits differences and may be a distinct species, we have subsequently figured it (113 B e).

wernickei. **C. wernickei** Niep. „An intermediary between *gabaza* (102 B f) and *eupepla* (102 B f). Upper surface as in *gabaza*, but black and without a blue reflection. The metallic transverse band of the forewing is green as in *eupepla*, but towards the posterior margin broader and without the ray to the base. The metallic spot of the hindwing as in *eupepla*, but smaller and more lustrous blue. The metallic band at the distal margin is absent, the fringes are hardly noticeably white. Under surface as in *gabaza*; in the forewing the distal part is broader black, the white apical part lighter. The costal margin at the apex more feebly margined with black. The middle black line traversing the apex in its length with a fine white median streak. Hindwing as in *gabaza*, but somewhat lighter. Length of forewing: 23 mm. 1 ♂ from Colombia.“

C. ceryx Hew. (193 f) (p. 502) of which we could not yet obtain a specimen and which we reservedly declared to be an aberration of *euclides* (102 B e), is declared to be a distinct species by DOGNIN, as well as by E. STRAND according to a ♂ from Llanos in Ecuador not quite agreeing with the original figure and description. We therefore reproduce the original figure.

plumbilimbata. **C. gabaza plumbilimbata** subsp. nov. from East Colombia (Upper Rio Negro, 800 m, A. H. FASSL) is distinguished by a leaden-blue marginal band of the hindwing ($1\frac{1}{2}$ to 2 mm). Similar specimens also occur in Venezuela.

Genus **Dynamine**.

motacilla. **D. motacilla** sp. n. (102 C d) from West Colombia is above similar to *pieridoides* (101 A b) and *anubis* (101 A b c), but at the costal margin of the forewing it has a much more lustrous blue colouring; the broad dark distal margin of the hindwing is conspicuous. The hindwing beneath also exhibits the same broad dark margin which, however, is brightened up by the limbal lustrous blue line and by a submarginal whitish band ending anteriorly and posteriorly into a lustrous blue line; the hindwing being otherwise white shows a sub-basal blackish-brown band. The forewing beneath resembles that of *pieridoides*, but it does not exhibit a yellowish, but blackish-brown marking and a much more lustrous blue reflection. According to a ♂.

luisiana. **D. luisiana** Fassl. ♂. „This new *Dynamine* is one of the most splendid surprises of our whole Amazon expedition up till now. The insect forms the intermediary between *gisella* Hew. (101 A i) and *zenobia* Bat. (101 A i). Both wings above predominantly jet-black. In the basal angle of the forewing there is a large spot as in *zenobia*, but of a more light steel-blue colouring; besides the forewing only exhibits a submarginal band being above parallel to the apex proximally indented, 2 mm broad, reaching to the costal margin as well as downward to the posterior margin of the forewing. The hindwing being otherwise quite black is solely decorated by a submarginally placed long reniform spot extending from the anal margin to beyond the distal half of the hindwing. These submarginal bands of both wings are of a dark violet colour (similar to the blue in *gisella*), thus much darker than the more greenish-blue (*zenobia*-like) basal spot of the forewing. The under surface resembles that of *gisella* and of *zenobia*, but it exhibits the orange-brown spot in the basal angle of the forewing which is absent in *zenobia*.“ Patria: Manicoré on the Rio Madeira and Teffé on the Rio Solimoens.

Genus **Chlorippe**.

Chlorippe burmeisteri G. & S. (p. 546, t. 110 B a, ♂). For a ♀ being figured 102 C e I am indebted to the kindness of Mr. P. JÖRGENSEN. It differs to such an extent from the ♀ of *cyane* that the presumption of *burmeisteri* and *cyane* being separate species is thereby more substantiated.

Genus **Agrias**.

(By A. H. FASSL †.)

Since 1916 when the genus was treated upon in Vol. V, p. 566, by the late H. FRUHSTORFER, a considerable number of new forms have been discovered in the districts of the Lower and Middle Amazon River and its affluents having before been little explored entomologically, so that also the systematic division and natural position of many forms can now be arranged according to these results and the much more copious material from much different points of view.

Although our present knowledge of the genus can by no means be regarded as exhaustive, the surprising result is deduced that the Amazon River and the Rio Negro divide the whole enormous range of the genus to the east of the Cordilleras with respect to its forms into two well separated regions; still vast important districts are up to this day entirely unknown with respect to their *Agrias*-races, above all the whole of Venezuela and the enormous plains of the Llanos of East Colombia, as well as the easternmost and central parts of Brazil.

A. claudia. The northern forms, thus the races homed in the Guianas and to the north of the Amazon and Rio Negro differ from all those occurring to the south of the Amazon by their smaller size and more uni-coloured grey under surface, particularly in the band in which the row of eye-spots is situate. Most of the subordinate forms of *claudia* described often occur as aberrations at the same place and time, which fact will be affirmed by every collector of series of *claudia* from well explored habitats, such as the Maroni River in Cayenne, Obidos and Manaos. Both typical *claudia* and all its transitions as far as *amazona* exhibiting the least red colour, as well as those with a proximally notched red bow of the forewing (f. *sahlkei*) are found together at either of the 3 habitats, just like the same forms with a more or less bluish-violet decoration of the fore-and hindwing (*vesta*-forms). Specimens with an intense preapical blue lustre of the forewing have in the meantime been described as **imperialis** Lathy, and an otherwise typical *claudia* (from Manaos and Obidos) the large red spot of the hindwing of which is situate in a still larger bluish-violet spot, thus being the most variegated of all the northern *claudia*-forms, we have denominated: **tuschana** form. nov.

Most interesting are the forms of *claudia* to the west. From Manaos no *Agrias* had hitherto been known; Dr. HAHNEL merely once saw the supposed *sardanapalus* flying, and OTTO MICHAEL obtained an entirely desolate specimen from a settler, which was said to have been taken near Manaos. Among the 40 red *Agrias* I captured near Manaos there is no *sardanapalus*; all of them are forms of *claudia*, of which all the ♂♂ and most of the ♀♀ exhibit rich blue decoration which often entirely removes all the black tints above, whilst the red disc of the hindwing is rather much reduced or entirely absent. Thereby a *claudia*-form is produced near Manaos especially resembling a *sardanapalus*, distinguished from its southern double *sardanapalus* by its remarkably small size and a duller lighter blue of the hindwing being distally bordered by a uniformly broad (almost 1 cm) black edge; the preapical blue spot of the forewing is much more metallic and lustrous sky-blue; the under surface is duller blue but with a more whitish margin than in *sardanapalus*; we denominate the interesting new insect **ninus** form. nov. A form quite similar to it, likewise without a red disc on the hindwing, resembling also *sahlkei*, occurs near Manaos, with a deeply indented red bow on the forewing, of which 4 couples are before us, which are quite constantly coloured and marked and which we denominate *claudia* **biedermanni** form. nov. (t. 113 B a ♂ and ♀) in honour of Mr. ROB. BIEDERMANN, the well-known collector at Winterthur, since the same name having before been applied to a form of *pericles* becomes vacant for reasons to be discussed hereafter. This magnificent new form of *Agrias* in the ♀ already shows distinct attempts of the red band being distally broken up, where it is partly crossed by the black veins.

We now come to the forms occurring to the south of the Amazon River. We do not wish to discuss the question whether *sardanapalus* is justified to be regarded as a distinct species, still we must state the fact that all the forms from the Southern Amazon District that were formerly placed to *claudia* combine certain common marks which are absent in the genuine races of *claudia* from the Northern Amazon District and the Guianas. Beside the larger size, the rounder shape of the wings and the much brighter ochreous-yellow under surface we miss here above all every approach to the aberration *sahlkei* being of such frequent occurrence in the north with the basally angular excision of the red bow of the forewing. The different forms denominated are much more bound to the locality; the discovery of a genuine *sardanapalus* on the Rio Madeira with a large red disc of the hindwing proves the complete gradual transition of the most abundantly red eastern

form *croesus* into the entirely constant form *sardanapalus* of the lowlands of the Central Amazon District. The row of transitional forms from Pará to the Rio Madeira is at present so complete that a separation of *croesus* and its similar forms from the northern *claudia* is no more possible.

I took the typical form *croesus* in very fine and large specimens on the Rio Xingu as well as with *vulcanus*, a somewhat shortened red disc of the hindwing on the Rio Tocantins, from where also the figured form **vulcanus** (113 B a ♂) originates with a blue reflection towards the base and anal part on the hindwing. This is already a transitional form to *A. claudia* (from Rio de Janeiro to Bahia), and still more so is a smaller and more insignificant form from Alcobaca, the first of the rapids of the Tocantins, in which the quite trans-cellular red spot receding towards the apex of the hindwing, encompassing yet the cell, extends in fine red lines along the veins into the disc of the wing: **loki form. nov.** On the Rio Xingu I captured in numbers only the typical form *croesus* Stgr., the legitimate ♂ of which does not exhibit any blue bordering of the red colouring. On the Rio Tapajoz, however, there occurs already a form with a *sardanapalus*-blue anal edging of the red disc on the hindwing and sometimes also blue colour in front of the red bow of the forewing which was placed by STAUDINGER as a ♂ to RIFFAERT's genuine ♀ of *croesus* from Chaves (Island of Marajo). I denominated this form of *croesus* decorated with blue of which I possess beside several ♂♂ also the very rare, likewise anal-wards blue ♀ from the Tapajoz, according to its discoverer: **A. michaeli**.

Cachoeira I, the first of the rapids of the Tapajoz, already has a form with a very small and along the veins dissolved red spot of the hindwing, which is situate in a larger bluish-violet spot (**godmanides Fassl**).

On the Rio Mauès we find a somewhat smaller, very constant local race with carmine magnificent spots hued with violet without a blue bordering, which is more oval in the hindwing and distally less dentate than in *croesus*: **pulcherrima Fassl**.

From the next large tributary of the Amazon, Rio Madeira, finally comes the typical *sardanapalus*; but besides there occur specimens poor in colours, in which the blue in the forewing is entirely absent. My collector H. STRYMPER, however, also succeeded in capturing here 2 genuine ♂♂ of *sardanapalus* which in the midst of the blue disc of the hindwing exhibits yet the large red disc of *croesus*. I denominate the magnificent new form completing an unexpected transition from the east from *croesus* over *michaeli*, from the south from *godmani* to the genuine *sardanapalus*, as **belsazar form. nov.** (113 B a ♂).

Among the greatest number of the ♂♂ of *sardanapalus* lying before me from the Central Amazon lowlands from Madeira to Peru, which are almost quite constantly coloured, I do not possess one specimen with any trace of red in the hindwing; but instead of it the hitherto unknown ♀♀ of the genuine *sardanapalus* are most surprisingly of a quite unexpected variability, to such an extent that often all the analogies of colouring which in the aforementioned eastern forms are bound to certain, far remote localities, occur here in different ♀ forms of *sardanapalus verus* at the same place and time. As a typical ♀ form among the 35 ♀♀ lying before me I denote the form with a uni-coloured greyish-black hindwing without any trace of blue; since it had been observed by collectors already before, but not captured. **rubrimediana** I denominated ♀♀ with red-hued medians of the hindwings; ♀-ab. **purpurea** those in which these lines are condensed to a red discal spot of the hindwing; ♀-ab. **brunhilda** those specimens where the red in the hindwing is replaced by a blue disc, sometimes yet with a blue distal bordering of the red bow of the forewing; thus a retrogression to the colouring of the ♂. Finally I denominated ab. **suprema** (113 B b ♀) an extraordinarily variegated ♀ from Teffe exhibiting in the blue *brunhilda*-spot of the hindwing yet the red spot of the form *purpurea*. Two ♀♀ in which the apex of the forewing is ferruginous which occurs in no other *Agrias*-form above known to me, I described as ♀-ab. **coccinata**.

As to the Andine forms of *sardanapalus*, we may supplementarily add after a consultation with H. LATHY, that his form *hades Lathy* has black hindwings without any blue, so that *decyanea*, which was later on described by NIEPELT (p. 570), is to be cancelled as the synonym of it. Moreover, we must insert yet in FRUHSTORFER's description of the races of *sardanapalus* on p. 570 the form **intermedius** FASSL (from the Eastern Cordilleras of Colombia) which was before described by me; it is the northernmost and most scantily coloured form of *sardanapalus* at any rate, with a dull upper surface as in *Agrias aedon* to which, however, it does by no means form a transition.

A. narcissus does not range as in the previous work of FRUHSTORFER between *phalcidon* and *hewitsonius* but directly after *aedon* to which it is very closely allied and perhaps connected with it by transition in hitherto unexplored districts (Venezuela?). The type occurring to the north of the Amazon invariably shows a red band almost rectangularly touching the costal margin. On the western frontier of its range known hitherto, to the north of Manaos, I discovered to my surprise only ♀♀ with a magnificent ochreous-yellow instead of purple-red band, whilst the ♂♂ were normal; ♀-var. **chrysotaenia** (t. 113 B b).

A still greater surprise on my Amazon exploration was the discovery of a most magnificent, considerably different race of *narcissus* in the southern Amazon District — from the Rivers Xingu, Tapajoz and Mauès — which in contrast with the very constant northern form varies so much at the same place and time that the extreme forms, on their upper surface, do no more resemble in the least the exterior of *narcissus*. All the representatives of this new southern race are considerably distinguished from the type by the red bow of the

forewing never touching the costal margin in a right angle but extending in a flat bow along the costa into the base of the wing, and by the blue colour of the hindwing extending to the distal margin; besides all the southern *narcissus* are much larger, and often the cornflower-blue also covers the red areas which produces a coloristic effect excelling even that of the most variegated *sardanapalus*; all the following coloristic varieties (except the yellow form) are common to both sexes; the under surface of all the forms is marked and coloured as the typical *narcissus*. — The form **tapajonus** Fassl (113 B b ♀) is the southern race being the most closely allied to the type. In the form **dubiosa** (113 B b ♂) — which I took to be a form of *claudia* according to the quite old specimen taken first on the Tapajoz — the red bow is downwards widened as far as the submedian. A couple of *dubiosa* from the Rio Xingu besides exhibits a red pupil in the hindwing in the shape of a carmine transcellular spot. The form **porphyronis** Fassl (113 B c) represents the transition for which I had long been searching to the most variegated form *narcissus illustrissimus* Fassl (113 B c ♂) which almost entirely resembles above a *claudia michaeli*, whilst another specimen resembles *sardanapalus belsazar*. On the Rio Maurès I finally captured beside the typical *narcissus tapajonus*-♀ also a magnificent aberration with a golden yellow band of the forewing — ab. **icterica** Fassl being in the colouring analogous to the northern form *chrysotaenia icterica*. from which, however, the Maurès-insect differs considerably by exhibiting the characteristics of the southern races, the flat bow of the forewing and the blue colour being spread across the whole surface of the hindwing.

Of the forms of *A. amydon* the following are to be ranged in the species *pericles* as they have in common with it a rust-coloured yellow or red body, a similar base of the hindwing and the inclination to a blue preapical embedment in the forewing which blue colouring is in variegated specimens like the blue of the hindwing distally besides bordered with green festoons. Thereby the *pericles*-group differs from the purely Andine forms of *amydon* in which these marks are always absent; the races of *pericles* are besides almost invariably much smaller, the very long apical strigae of the forewing always show through above also in the ♂♂ as 2 or 3 very large yellowish-white dots.

In case my present expedition *) should be successfully completed, probably all the non-Andine forms having hitherto been combined with *amydon* will have to be rearranged in *pericles* by the discovery of the very rare variegated transitions to the latter species, so that the eastern foot of the Cordilleras would then form the natural frontier between the range of *A. amydon* and *pericles*, as is also the case with many other closely allied species of lepidoptera, e. g. *Papilio harmodius* and *ariarathes* the range of which is divided by the same line.

It has hitherto been proved for certain that the northern forms *A. aurantiaca* and *trajanus* belong to *pericles*, the former representing merely a coloristic variety of the latter, since both forms fly at the same time and place near Obidos as well as to the north of Manaos. Beside a ♂ of *trajanus* from Obidos with a faint dark blue preapical reflection of the forewing, I possess a ♂ of *aurantiaca* from Manaos with a blue embedment at the same place but also already a dark blue disc of the hindwing. Still more than these specimens do, the figured form **praxiteles** (113 B c ♂) proves the relationship to *pericles*, representing nothing else but a ♂ of *trajanus*, in which the preapical spot of the forewing already exhibits a tendency to a green bordering as in *pericles*; I took the insect near Manaos.

The typical *trajanus* shows the same orange-red colour as the figured *praxiteles*. By FRUHSTORFER speaking in his description of *trajanus* on p. 573 of a purple spot of the forewing and dark red powdering on the hindwing it happened that I described *trajanus* once more as *pericles biedermaani* which name has now to be placed as synonymous to *trajanus*, since also Mr. LATHY (Paris) has indisputably identified the types of *trajanus* in an English collection. The white wedge-shaped streaks of the hindwing on which FRUHSTORFER in his diagnose lays such great stress, are moreover sometimes absent in specimens from Obidos, almost invariably in those from Manaos.

Of the *pericles*-forms from the South Amazon the Rio Tapajoz unites the most shades at the same place. Here we meet with variegated red-banded specimens allied to the typical *pericles* of the Solimoes, and in which the distal bordering of the blue areas exhibits bright green festoons, as well as all the transitions to quite scantily coloured specimens showing but minute traces of blue and green; the very same gradation is exhibited by the cell-banded forms there (*xanthippus* Stgr.), in one of the specimens I captured there we even notice no trace whatever of blue and green, and this plain blackish-yellow specimen recalling the ♀-colouring is at any rate and presumably the most poorly coloured of all the ♂♂ of *Agrias*, which I denominate *pericles* ♂ ab. **tristis**.

Whereas formerly only a ♀-form of *pericles* being similarly coloured like this was known, I succeeded in taking besides several ♀♀ being alike, in which the black preapical zone of the forewing is profusely strewn with golden green scales; sometimes the veins traversing this green area are besides hued dark blue — ♀ ab. **chlorotaenia** Fassl. Still more singular is a ♀ which I at first mistook for *phalcidon-anaxagoras*, before I knew the legitimate ♀ of the latter, which, however, certainly also only represents a variegated ♀ form of *pericles*: **mirabilis** Fassl (113 B d ♀); it exhibits a subapical embedment similar to *chlorotaenia*, though of a blue colour in which on the contrary the veins are hued green. In the hindwing the orange-powdered base is followed

*) The author of these lines, A. H. FASSL, has unfortunately died in the meantime at Manaos.

tapajonus,
dubiosa.

porphyronis,
illustrissimus.

icterica.

praxiteles.

tristis.

chlorotaenia,
mirabilis.

by a black discal area, then comes a broad, dull dark blue submarginal border distally defined by a fine equally broad green silvery line; the most peculiar feature, however, in this insect is the strangely shortened yellow bow of the forewing, almost looking like a transition to the basal spot of *anaxagoras-hewitsonius*.

mauensis. The Rio Mauès yielded a much more constant race of *pericles* — **mauensis** Fassl — in which there is no green festoon at all, the fore-and hindwing being profusely violettish-blue; the magnificent bow of the forewing may be purple-red, orange or yellow. The ♀ is without decorations like the normal one of the Tapajoz-forms, but it invariably has a dark metallic green reflection in the hindwing at the place where the strigae are in the northern forms. Only a single ♀ from Mauès is more variegated with a similar though much duller blue decoration than the ♂ and a light orange-red band; I denominated it ♀ ab. **coronata**.

coronata. The Rio Madeira has by no means supplied a transition from *mauensis* to the typical *pericles*, but a very peculiar lepidopteron which one might almost take to be the ♂ of *pericles mirabilis*-♀; it looks above and beneath very much like the figured *hewitsonius jounierae*-♂ from the same habitat, and has likewise an orange basal spot of the forewing not extending beyond the cell; then follows a dark blue zone ending in a narrow green border at the distal margin; just as dark blue with a fine green bordering which, however, is more intense analwards, are the hindwings. Particularly the latter circumstance, besides the remarkably long apical strigae beneath showing through towards the apex of the forewing as 3 purely white dots, the rust-coloured yellow base of the hindwing above and no less the small size of the insect are certain proofs that it belongs to *pericles*. I name this new form **ahasverus**; it has been discovered by my collector A. LUIZ STRYMPL, and it is the only representative of *pericles* known hitherto from Madeira. Its great resemblance to a form of *hewitsonius* flying at the same habitat is by no means a sporadic occurrence in the variations of well separated insects of the same genus; I only mention as similar examples: *Heliconius melpomene* and *vesta viculata* near Santarem, *Morpho-hecuba* and *metellus* near Obidos, *Morpho cisseis* and *perseus crameri* near Parintins etc.

gloriosa. That also *A. ferdinandi* Fruhst. and its recently described variegated form **gloriosa** Lathy — with a profuse blue preapical embedment in the forewing — are nothing else but southern forms of *A. pericles* resp. of its Matto Grosso forms, is easily to be made out from the aforementioned common marks of the races of *pericles*. But also *tryphon* Fruhst. and *amydonius* Stgr., of which we have at present too little material, seem to belong to *pericles*.

On p. 576 we have to insert in *A. mapiri* in the 8th line from above after the word „*Agrias*“ the word „*pericles*“.

phalcidon. **A. phalcidon**. I must premise that the range of this species as well as of the close allies and of the *hewitsonius* being connected by transitions, is probably only confined to the Southern Amazon District in spite of some contrarious statements. Both myself and my collectors were for a long time active at different places to the north of the Amazon and Rio Negro without ever beholding a blue *Agrias*. An entirely typical ♂ in the Paris Museum, which merely exhibits a somewhat greyer scent-pencil and is labelled as „Obidos“, I most positively consider not to originate from there.

xinguensis. Two geographical forms are also known from the east of Itaituba on the Tapajoz, both of which invariably exhibit as the principal mark red basal marking on the hindwing beneath. **xinguensis** Fassl (102 C f), which is besides somewhat more bluish steel-green, exhibiting smaller ocelli beneath and mostly a large metallic lustrous steel-green spot in the distal half of the forewing beneath, was discovered by me on the Rio Xingu, whereas **rubrobasalis** Fassl forming the transition to the typical form occurs on the northern frontier of the Amazon District from the mouth of the Xingu upwards as far as Santarem and from here the right bank of the Tapajoz upwards as far as Monte Christo.

rubrobasalis. In the blue *phalcidon*-form *paulus*, on p. 576, we must remark that the specimen taken by Dr. HAHNEL near Parintins is not a ♀ but a ♂. I took the very singular ♀ probably belonging to *paulus* on the Tapajoz in a single specimen (113 B d ♀).

The type of *phalcidon anaxagoras*, according to its discoverer H. OTTO MICHAEL who also furnished us with a drawing, by no means exhibits almost entirely black hindwings as FRUHSTORFER writes on p. 576, but analogous to my two more ♂♂ taken near Itaituba it is like a normal *phalcidon*-♂ also in the hindwing profusely decorated with blue and green. The ♀ of *anaxagoras* (113 B d ♀) having hitherto been unknown, which I took on the Tapajoz in 2 rather similar specimens, is very much like the ♀ of *A. hewitsonius* (113 B d).

We likewise figure here the ♀ of the genuine *A. hewitsonius* (113 B d) from Teffé, which was hitherto unknown; all the specimens I captured are entirely constant. The figure of *hewitsonius* ♂ beneath on t. 114 c is of a somewhat too bright green colour; besides the ♂ above mostly exhibits a much more extensive green marginal line almost invariably reaching the posterior margin of the forewing and being in some ♂♂ even rudimentarily continued in the apex of the hindwing.

Although my prior presumption that *A. phalcidon* and *hewitsonius* are merely local races of the same species had been very strongly opposed, the discovery of an extremely magnificent intermediate form on the Rio Madeira, *A. fournierae* Fassl (103 C f ♂) must be considered as a confirmation of my opinion. The blue colour above is of a still much more magnificent and lighter metallic lustre than in the genuine *hewitsonius*-♂; a narrow, green border only occurs in the figured specimen; in 4 other ♂♂ of *fournierae* it is entirely absent; a rather broad black distal margin likewise recalls *hewitsonius*. Beneath there is no trace whatever of a green colouring or of a basal bordering; instead of it the yellow colour is spread across the whole light tints of the under surface, which is not the case in any other of the *phalcidon*- and *hewitsonius*-races known hitherto. *A. fournierae* has 2 different ♀ forms; the typical most magnificent form on both wings resembles the ♂; it is by one third larger, the blue is lighter, metallic light violet and without any trace of green. The other very different ♀ form — ♀ ab. **calliste** — is somewhat smaller and less variegated, it only has a duller blue before the orange spot, turning soft steel-green towards the apex and costa; the hindwing likewise only shows a dull discal blue decoration.

At the same time and place I also took 2 quite constantly aberrant ♂♂ of *fournierae* in which the orange basal spot of the forewing is reduced to a narrow longitudinal stripe dissolving towards the lower cell-margin into fine yellow atoms in the blue ground-colour: form. **viola** Fassl (113 B).

Whilst *A. fournierae* looks like an enlarged form of *Callithea batesi aimeana* from the same habitat, the form *viola* involuntarily reminds us of the magnificent *Catagramma excelsior michaeli* Stgr. occurring at the same place.

Although we may be in doubt whether the new magnificent insect is to be placed to *phalcidon* or *hewitsonius*, probably already the nearest future will yield some more interesting intermediate forms connecting *phalcidon* with *hewitsonius* also with respect to their very different under surfaces.

Genus **Siderone**.

Sider. marthesia Cr. (p. 577) has been found again by Mr. A. H. FASSL near Itaituba on the Tapa-joz; we had 1 ♀ from FASSL's collection figured (102 C f); the under surface corresponds to that of *confluens* (116 a), but the forewing shows a yellow ground-colour.

Genus **Anaea**.

A. suprema Schs. (= *zikani* Rbl.) (102 C e) is one of the most remarkable and most magnificent species of this genus and has only recently discovered by Mr. J. F. ZIKAN near Fazenda dos Campos near Passa Quatro in the southern Minas Geraes at an altitude of 1600 m, the small insect in the male has about the shape and size of *falcata* (120 D e), but the body is less robust; the upper surface is bluish-black with a slight reflection and has a broad, almost golden red costal-marginal band, but the costal margin itself is bluish-black beginning from the middle of the discal cell, the distal margin of the forewing is, like the apex of the wing, somewhat broader and reddish; the hindwing has a somewhat paler red distal-marginal band of about 3 mm width. The under surface resembles that of *tyrianthina* (118 e). The ♀ forewing above shows a ground-colour similar to that of the ♀ of *Chrysophanus virgaureae* (Vol. I, t. 76 a), the costal margin is black, in the centre a broad black band growing broader in front towards the rear and with unequal margins, being particularly distally sharply dentate in the areas of the wing; in this black band there are three large spots of the ground-colour; the hindwing is black with large, yellow, coherent spots and with an antemedian row of equally coloured, sharply defined spots. The under surface shows a more distinct black marking than in the ♂, at the end of the discal cell of the forewing there is a black spot. As to the early stages, F. ZIKAN has published the following account *): „The globular egg, being somewhat flattened at its upper pole, is feebly corroded, of a lustrous greenish-white, and has a diameter of scarcely 1 mm. It is singly deposited on the underside of leaves of a tree-like species of *Croton* (according to Dr. RECHINGER *Croton gossypifolium* H. R. K., called „*Sange di Drago*“ by the natives), mostly at a considerable height. The total amount of eggs of a ♀ is about 200. The small larva leaves the eggs 11 days after the ovipositing. It is then 3 mm long, dingy green, with a dark brown, black spotted head and one subdorsal and one lateral row each of scanty bristles. After about 2 weeks the first casting of the skin takes place. After this the small larva is about 10 mm long, dingy green, with the characteristic, quadrangular, red-brown spots (of the *Anaea*-larva, of which the saddle-spot is the most conspicuous. Below the stigmata the larva is coloured yellowish. Its skin is densely covered with low, yellow tubercles with short black bristles, the head showing a crown of spines. After the second skinning the ground-colour of the larva has turned cinnamon-red. The red-brown, interrupted dorsal line and the lateral spots of the same colour already correspond with the adult larva, and so do the spining and colour of the head, whereas the integument (the skin) exhibits the former state.

*) Zeitschr. Oesterr. Ent. V. Wien, Jahrg. 1921, No. 1 and 2.

After the third skinning the larva shows the same exterior. The adult larva (after the fourth skinning) is 50 to 55 mm long and exhibits a pink ground-colour turning lilac on the dorsum. The first four segments are slightly covered with spine-like, small yellow tubercles on a greenish ground, arranged in longitudinal rows, whereas on the other segments, particularly on the sides, they are but scantily arranged, so that the ground-colour is visible there in rectangular lustrous spots. The head exhibits a three-coloured demi-crown of dingy green spines with yellow tips, the two middle ones which are the largest and singly forked. The dark frons with two pink lateral stripes. Before the pupation the larva turns green. The young larva begins to feed on the apex of the leaf which it prolongs by a web mixed with clods of dirt, which it only leaves during the first two stages of skinning in order to feed. After the second skinning the larva makes itself a bag by rolling up the edge of the leaf which is also on the inside clad with a web. The larva in day-time sits in the bag with its head turned towards the opening and mostly only leaves it at night for feeding. The third and fourth skinning takes place in the bag which is several times made larger on a new leaf. In spite of the bag the larvae are sometimes infested with parasites (*Tachinae*, *Microgaster*). The worst enemies, however, are birds which pick open the sides of the bags. The pupation takes place in a leaf being joined together, but mostly not on the food-plant. The immovable pupa is short and compact, 18 mm long, 13 mm broad, green, with a silvery white (sometimes orange-reddish) longitudinal line on both sides of the dorsal carina and such lateral oblique stripes as far as the proximal margins of the wings. The ventral side of the pupa is uni-coloured green. The discoloration of the pupa takes place 6 to 8 days before the imago is yielded and shortly before it already shows the sex in the transparent marking of the wings. The pupal stage of the summer generation lasts for 30 days (November to December), that of the spring generation hibernating as a pupa for 60 to 94 days (May to July-August, exceptionally to September). The generation of the hibernating pupa needs, in order to develop well, dampness and cold temperature (sometimes as much as 5 degrees below zero)."

A. xenocrates Ww. ♀. „The ♀ is but slightly larger than the ♂ of the species (120 D d) and of rather the same shape of wings, thus also without tails. All the steel-green spots of the ♂ are in the ♀ golden ochreous, whereby the female assumes quite a different appearance. The finely watered under surface does not exhibit, as in the ♂, a slate-coloured greyish-blue, but ochreous-brown ground-colour. According to several rather similar ♂♂ from Teffé (Ega) and to the north of Manaos.“ (FASSEL.)

demaculata.

A. xenocrates demaculata subsp. nov. was discovered by FASSEL in August in Manicoré (Amazon River). It is smaller than *xenocrates typica* (120 D d), the blue spots of the forewing are reduced to 4 being scarcely half the size of those in *xenocrates*, the marginal band of the hindwing consists of small isolated spots, and the ground-colour beneath is lighter.

A. porphyrio Bat. (119 a). We had subsequently also the ♀ figured (102 C e). This species does not only occur near Pará (on p. 585 misprinted into „Peru“), but probably also on the whole Lower Amazon River; it flies from July to September.

Of *A. eribotes* F. (p. 585) we figure a ♀ (102 C d) having been taken by Mr. A. H. FASSEL near Manaos. Perhaps it forms with *porphyrio* (119 a) and *testacea* (119 a) a single species occurring in various shapes.

polyxena.

A. polyxo polyxena subsp. nov., captured by A. H. FASSEL in some ♂♂ near Manicoré on the Rio Madeira in August, is remarkably smaller than typical *polyxo* (120 D a b), the markings are not verdigris, but blue with a purple reflection and the marginal band of the hindwing is not sharply defined, but it gradually turns proximad, and only extends from the proximal angle to the anterior radial.

anceps.

A. anceps sp. nov.? (102 C d e). Mr. A. H. FASSEL, in January 1922, captured some ♀♀ of it near Manaos (Lower Amazon) and presumes them to belong to a species the ♂ of which has not yet become known. But it is neither impossible that they belong to a species from the *glauca*-group, may-be *felderi* (119 d), the under surface of which is similar to that of *anceps*.

A. basilis Cr. (p. 589, 193 e). Of this species Mr. A. H. FASSEL has discovered the ♀ near Mauès (102 C f as *basalis*). The under surface is grey with blackish and whitish speckles, two white, black-pupilled spots near the base of the tail-appendage, a black median stripe across both wings, which, however, neither reaches to the costal margin of the forewing nor to the proximal margin of the hindwing, and black spots at the costal margin of the forewing, particularly a large spot at the end of the discal cell.

caucana.

A. rosae caucana J. & T. from the Cauca Valley (West Colombia). „Forewing with rather small subapical spots, as they are reduced towards the base, and the bands correspondingly indistinct. Fringes of a bright brown and slightly dusted with the same colour. Hindwing with traces of a bluish costal spot. Distal margin of a bright brown, which colour gradually disappears in the ground-colour. Under surface with reduced white markings and the spot in cell 7 of the hindwing fainter.“ — Synonymous with *laura* (p. 590, t. 120 A d)?

discophora.

A. discophora sp. nov. (102 C e) from Peru (Pozuzo) is remarkable by a large, very scantily scaled and therefore semi-transparent spot of the forewing occupying almost the whole distal half and only leaving free

the proximal angle and a stripe at the proximal margin; it might be taken as a scent-scale spot, if such formations would not be uncommon in this genus. The under surface resembles that of *plantes* (120 A c), but the ground-colour is darker and the light band of the forewing is complete and extends into the apex of the wing, expanding near the proximal angle into a light triangle.

Lycaenidae.

The „Check-List“ having in the meantime been published by WM. BARNES and MC. DUNNOUGH, as well as personal reports by Mr. W. T. M. FORBES, Ithaca, N. Y., to whom we are greatly indebted, necessitates some alterations in the elaboration of the North American *Lycaenidae*.

Th. publica Rôb. is very much like the ♀ of *paphia*, but it has narrower wings; the black distal margin of the forewing is narrower and turns proximad on the veins in a dentate shape; the tail-appendage on the 1st median vein is broader and at the borders broadly covered with green lustrous scales. Beneath on the forewing the green marginal scaling is reduced, the black median band of the hindwing is narrower, irregularly defined, in the middle broader than in front, not sharply angled, but softly bent, the distal parallel band is absent, but instead there are two black submarginal cucullate spots, behind them yellowish-greenish dusting. Abdomen beneath loam-coloured yellow. According to 1 ♀ from West Colombia (Rio Magdalena). — This form is to be inserted on p. 746 behind *paphia*. *publica*.

Th. polios Cook & Wts. (p. 761) is not a synonym to *mossi*. The latter species is uniformly chocolate-brown above, whereas *polios* is browner towards the margin on the hindwing. On the under surface the distal margin of the hindwing of *mossi* is contrastingly red-brown with six more or less distinctly visible, small internerval spots, whereas the forewing has no marginal part contrasting by a different colour. In *polios* the hindwing shows a broad light grey distal-marginal part, lighter than in *irus*, and the forewing exhibits a whitish, 1 mm broad margin before the fringes. *polios* originates from Maine and Colorado, *mossi* from the western half of the States and from Pennsylvania.

Th. dumetorum Bsd. (p. 763). The typical form in the ♂ exhibits a blackish grey upper surface, occasionally tinted with a faint brownish red, in the ♀ more distinct. Beneath the sexes are similar, with rows of white at least on the hindwing, in about 90 percent on the forewings and hindwings. Range: California. — f. **perplexa** Barnes and Benjamin, a geographical race from San Diego (California), differs by the entire or almost entire absence of the small white spots beneath; the coppery grey area at the proximal margin of the forewing almost extends to the costal margin and parts a green basal area from the green apical area; the fringes are not quite purely white. It was usually mixed up with the Colorado-race of *apama* and the *sheridanii*-race from Utah. *perplexa*.

C. affinis (p. 763) in both sexes shows a constant red-brown ground-colour above; the forewing exhibits beneath at the proximal margin only a slight darker shade. Fringes distally purely white.

C. apama (p. 763) is in the typical race from Arizona above grey, often with an intense coppery tint, in the ♀ in the disc coppery red-brown, with fine black veins. The under surface in the colour resembles the race *perplexa* of *dumetorum*, the white markings are still more prominent and usually bordered with a red-brown band. The white band of the hindwing consists of white, crescentiform confluent spots, in the centre very much distally angled, proximally bordered with black, behind it with a red-brown band. Fringes quite dark, at the anal angle of the hindwing white. — f. **homoperplexa** Barnes and Benjamin is the race from Colorado. Above the ♂♂ are redder than any other species or race except *affinis* from which it is easily discernible by the coppery or red-brown spot on the forewing beneath extending from the proximal margin to the costal margin. Beneath the white markings bordered with black and brown are reduced to single small spots, and may occasionally disappear altogether. *homoperplexa*.

C. sheridanii in the typical form shows dark grey wings above and is beneath darker green than the other species; both wings are beneath crossed by bands of small white punctiform spots, on the forewing almost, on the hindwing entirely confluent, so that they are here no more discernible as single dots, proximally bordered by a distinct black line. Fringes purely white. Denver (Colorado). — f. **neoperplexa** Barnes and Benjamin is the race from Utah which is above lighter grey and does not exhibit any purely white fringes. Beneath the white dots are reduced, on the forewing occasionally disappearing altogether, on the hindwing forming a thin line. *neoperplexa*.

C. xami (= *blenina*) (p. 772), as well as *rhodope*, *loki*, *spinctorum*, *johnsoni*, *castalis*, *siva* and *nelsoni* ought to be placed with *damon* (p. 798) together into the subordinate genus *Mitoura*: *siva* Edw. must be eliminated as a synonym to *xami*, the type is very closely allied to *nelsonii* or its form *muirii*, to which it may belong as a synonym according to Barnes and Benjamin. — *castalis* belongs to *damon* and has the priority of its form *discoidalis* Skinn. (p. 798). We add another form to it: r. **patersonia** Brehme, a seasonal form, being dark sooty brown ♀♀. *patersonia*.

Habrodais (not *Habrodias*) *grunus* Bsd. (p. 773) is no real *Theclina*; it has a forked apical vein and enlarged anterior tarsi like some allies of the African *Lycaena*.

Crysalus Edw. (p. 773) belongs into the genus *Zephyrus*.

Th. lorata Grt. & Rob. (p. 773) is an artificial produce; the diagnose is not correct; it is a typical specimen of *calanus* on the under surface of the wings of which a black subbasal line has been painted.

Th. ontario Edw. (p. 773) is the northern race of *autolytus* and to be ranged there (p. 774, line 1 from above). It is a small form without the small orange marginal spots. Very rare, also from New York and Massachusetts.

Th. aurette Bsd. (p. 774). We must insert here as synonym *tacita* Edw. (p. 772, line 10 from below) and *tetra* Behr (p. 774). — *spadix* Edw. (p. 773) is only a southern race of *aurette* without the small orange anal spots; the ♀ is above broadly rust-coloured yellow in the disc. The under surface is more ochreous-yellowish with extinct markings.

Th. laeta Edw. (p. 783) from eastern habitats of North America is beneath greenish-grey, similar to *quaderna* (155 i) from Mexico.

According to clause 36 of the international nomenclatural rules, the species denominated *damon* on *smilacis*, p. 798 would have to be called *gryneus* Hbn., *damon* becoming synonymous. — f. **smilacis** Bsd. & Lec., mentioned as a synonym of this on p. 798, is the eastern form with a dark brown, almost monotonous upper surface (sec. Barnes and BENJAMIN), but according to the kind information by Mr. FORBES it is the long-tailed southern race. Beside the races *castalis* Edw. (= *discoidalis* Skinn.) and f. *patersonia* Brehme *brehmei*, (p. 1043) having been already mentioned before, we must yet insert: f. **brehmei** Barnes & Benjamin as the Texas-race of the form *castalis* Edw. with its under surface, but like *smilacis* with a darker upper surface.

Th. titus (p. 811). Add to it: f. **immaculosus** Comst. with an unspotted under surface.

Ch. del Sud Wright (p. 812) becomes synonymous to *hermes* Edw.

Th. mariposa Reak. (p. 813), according to BARNES and MC. DUNNOUGH is to be provided with the synonym *zeroë* Bsd., *nivalis* Bsd., however, with the synonym *ianthe* Edw.

The form *florus* Edw. (p. 813) belongs to *helioides*, not to *dorcas*.

Th. fuliginosa Edw. (p. 814) is no *Lycaenid* but a *Theclina* beside *Callipsyche behri* (p. 774).

Lycaena heteronea Bsd. (p. 814) to which *clara* Edw. belongs as a form is no *Lycaena*, but it belongs to the *Chrysophanus*-species beside *rubidus* (p. 813) with which it is closely allied in spite of the blue ♂!

L. icarioides Bsd. (p. 815). According to the latest investigations, the synonymy and forms are quite differently arranged: ♀ = *maricopa* Reak.; synonyma of it are: (= *phileros* Bsd., *fulla* Edw. [of p. 814], ? *mintha* Edw.). The typical form flies in the Californian mountains. The forms are: ab. *daedalus* Behr (144 b, p. 815), f. *helios* Edw., f. *evius* Bsd. from South California, f. *ardea* Edw. from Nevada, Utah and Colorado, f. *lycea* Edw. (= *rapahoe* Reak.) of p. 814 from the Western Rocky Mountains and finally f. *pembina* Edw. from Manitoba and the northern Rocky Mountains to the south as far as Wyoming and Montana.

L. hilda Grimm. is to be placed as a synonym to *achaja* Behr which comes as a form to *saepiolus* Bsd. (line 19 from above), not as a synonym.

L. kodiak Edw. is to be placed as a form to *scudderii* Edw. (p. 817). *mela* Streck. is to be eliminated and becomes a synonym to *cyna* Edw. (p. 819).

L. pardalis Behr (= *erymus* Bsd.) (p. 815) has nothing to do with *icarioides* Bsd., but belongs into a quite different group otherwise not at all represented in America, to *Lycaena* in its proper sense with *arion* as the most closely allied species. Above entirely like *icarioides*, beneath on a deep brown ground with intense black spots with fine whitish rings. California. — The third synonym mentioned in *icarioides* (p. 815), *mintha* Edw., most probably belongs to *ardea* Edw. (a form of *icarioides*).

L. antiacis Bsd. (p. 816) belongs as a form to *xerxes* (p. 815), as well as *meritula* Edw., whereas *behrii* Edw. belongs to *lygdamas* Dbld. to which also *couperii* Grote is to be placed.

L. sagittigera Fldr. becomes a synonym; insert as the correct name: *piasus* Bsd. of p. 818.

L. speciosa Edw. is not a *Phaedrotes*, but it comes to *Philotes* beside *sonorensis* Fldr.

L. podarce Fldr. and *rustica* Edw. (p. 816) are to be placed as forms to *aquilo* Bsd. (p. 816).

L. enoptes Bsd. (p. 816). With respect to this group and *battoides* the studies of BARNES and MC. DUNNOUGH have resulted in entirely different opinions which we state in the following. Above all the species belong into the 5th subordinate genus: *Philotes*, and not to *Rusticus*. *enoptes* and *battoides* have quite different genitals, whereas *glaucon* is not to be separated from *battoides*. Those being especially interested in these difficult questions may compare: Contr. Nat. Hist. Lep. N. Amer. Vol. III, Nr. 2, p. 116; Vol. III, Nr. 4, p. 213 seq., and Vol. IV, Nr. 2, p. 77 seq.

The arrangement of the forms is accordingly as follows:

P. battoides Behr is an alpine form from altitudes of 7 to 11 000 ft. and characterized by intense quadrangular black spots beneath on a very light whitish ground which is very much strewn with black, with a broad black marginal line on both wings and a broad, red submarginal band of the hindwing; the fringes of both wings distinctly speckled. Above the ♂ is very variable in the development of the orange-red spots on the hindwings, some specimens are without, others with a distinct band as beneath. A much smaller race: f. **bernardino** B. & McD. of about 20 mm expanse flies on low mountains in California (S. Bernardino Mts. and S. Diego) with a decidedly lighter ground-colour and less interne black markings beneath, particularly on the hindwings which are hardly strewn with black. — Another race: f. **oregonensis** B. & McD. originates from Oregon and is characterized by a much broader black border on both wings above in the ♂, which may occasionally cover the whole half of the hindwing; beneath the space between the postmedian row of spots and the orange marginal band is in both sexes larger than in other forms, the spots are less quadrangular, the ground shows a slight greenish tint. — A third form, the under surface of which forms the transition to *enoptes*, is f. **intermedia** B. & McD. occurring in the valleys of the North and Central Californian mountains. The spots of the hindwing beneath are much smaller, the orange submarginal band divided into small lunae, the dark marginal line as fine as a hair. Above in the ♂♂ the black border is moderately broad, the fringes of the hindwings are white, not speckled, at the anal angle of the hindwing slight orange spotting. The ♀♀ have a much broader orange band than the very similar ones of *enoptes*. In the Rocky Mountains of Colorado and Utah there flies a similar race: f. **centralis** B. & McD. with a broader dark border of the wings above and intense orange spotting at the anal angle of the hindwing in the ♂♂; beneath the ground is browner, the spots are larger, distinctly ringed white, the orange band more coherent, at the anal angle of the forewing dark shading. According to the very latest investigations and after having discovered the type of *glaucan* Edw. the latter has now proved also to belong to *battoides* and not, as was originally supposed, to *enoptes*; the genitals entirely agree with *battoides*; in the exterior the type is very much like *centralis* and *intermedia* by the intense black basal band of the fringes beneath.

The *enoptes*-form having hitherto been regarded as *glaucan* had therefore to be renamed: **ancilla** B. & McD. which thus entirely resembles *glaucan* Edw. above; beneath the scaling is somewhat rougher, and the black marginal line of the hindwing is stronger; the ♂♂ exhibit above at the anal angle of the hindwing but traces of orange scaling. From *enoptes* the form differs by the coherent orange band on the hindwing beneath which in *enoptes* is invariably divided into spots; besides the black spots are more prominent. Utah and Colorado. Insert after it:

Ph. spaldingi B. & McD. very much resembles *ancilla* above, but the anal angle of the ♂ hindwing is very intensely spotted orange, the under surface is lighter, the black spots of the hindwing much smaller, whereas on the contrary those of the forewing remain large and intense; the forewing shows a broad orange submarginal band not reaching to the costal margin and growing narrower towards it; on the hindwing this band is divided into small moon-spots by the veins and proximally very faintly, towards the costal margin at most, defined by blackish. The ♀ is dark brown, the orange marginal band of the hindwing is continued on half the forewing. The genital organs are very different from those of *enoptes*. Apparently rare and confined to but few mountainous districts of Utah.

Ph. rita B. & McD. is likewise closely allied to *enoptes*, but distinguished by its whiter ground-colour beneath with a broader orange band; the black spots are much stronger and the blue of the upper surface of a more violet tint. The genital organ is very different, but still most similar to *glaucan* from which it differs by a much longer terminal spine on the valves. Expanse of wings: 23 mm. South Arizona.

L. minnehaha Scddr. (p. 817) is not to be placed as a synonym of *shasta* Edw. (p. 817); it represents a good form different by much narrower black borders without orange, but with a white marginal line and distinct black marginal spots on the hindwing above. At greater altitudes in Colorado.

To *scudderii* Edw. (p. 817) add *aster* Edw. (p. 144 g, h) as the race from New Foundland. Two more forms of this species are: *annetta* Mead. (144 g) line 14 from below and *kodiak* p. 815 (144 c).

The arrangement of forms of *acmon* Dbld. & Hew. is to be altered as follows: *acmon* remains with the synonym *antaegon* Bsd. As the only form we add to it: f. *cottlei* Grinn. about which, however, we were at present not able to ascertain anything. — *monticola* Clem., *chlorina* Skinn., *emigdionis* Grinn. (= *melimona* Wright), *neurona* Skinn. are all said to represent good species. We have to add hereto as another species: *lupini* Bsd. about which we can at present not say anything and which is therefore to be eliminated as a synonym of *shasta* Edw.

Genus **Lycacenopsis** Fldr.

This name is to replace *Cyaniris* on p. 818. The species is not called *ladon*, but *pseudargiolus* Bsd., with *violacea* as synonym.

Genus **Everes**.

Add to *E. comyntas* Godt. (p. 818, t. 144 i) as synonym: (= *sissona* Wright), and as its form: f. *herrii* Grin. which belongs hereto, not to *amytula*.

Genus **Hemiargus**.

Add to *H. gyas* Edw. (p. 819) as synonyma: (= *astragalus* Wr., *florencia* Clem.), and f. *zachaeina* Btlr. & Drc. as the form from South Texas, Mexico and more to the south.

Add to *H. cyna* Edw. (p. 819) as synonym: (= *mela* Streck.).

H. hanno Stoll (p. 819). Of the synonyma mentioned here *hamo* Luc. and *artenides* Bsd. are to be eliminated, both presumably belonging to a West Indian species which is at present not to be identified for certain and which is mentioned by HÜBNER as *hanno* (Exot. Schmett. I, t. 98), though it has nothing to do with *hanno* Stoll and much rather resembles *gyas* Edw.

Hesperiidae.

The most difficult chapter of the diurnal lepidoptera has in the meantime gone through many far-reaching alterations which makes our whole work appear to require a revision.

Particularly the North American fauna has, by the indefatigable studies especially of BARNES, MC. DUNNOUGH, BENJAMIN and LINDSEY so entirely been overthrown in contrast to the basis used in DYAR's Catalogue, that it has an entirely different aspect now. The types of many species have quite wrongly been determined. Thanks to the kind aid of the gentlemen mentioned above — especially Mr. FOSTER, H. BENJAMIN in a most disinterested way put at our disposal a great deal of literature and typewritten notes. — we are able to-day to supply a considerably better survey. Still we are aware that many, particularly of the tropical species, being but insufficiently known or described according to single specimens, have been wrongly ranged with us or are synonyma. For corrections that may serve for later supplementary data we shall always be obliged.

Genus **Pyrrophyge**.

For *P. araxes* Hew. (p. 839, t. 162 e) together with *arizonae* G. & S. a new genus has been established by LINDSEY: **Apyrrothrix**, chiefly founded on the somewhat different shape of the wings.

Genus **Mimoniades**.

chanchamayonis. *M. pityusa* Hew. (p. 846, t. 164 a). — The f. **chanchamayonis** Strd. has on the forewings somewhat broader, on the hindwing narrower light discal bands; both are anteriorly not connected. Near the margin of the hindwing 4 or 5 bluish sublimbal spots. From the Chanchamayo (Peru).

mapirica. *A. pardalina* Fldr. (p. 847, t. 164 g). — The form **mapirica** Strd. is distinguished by a narrower, uni-coloured, bluish-black marginal band of the hindwing and more distinctly separated subapical spots of the forewing. From the Rio Mapiri.

Genus **Myseelus**.

rogersi. **M. rogersi** Kaye is to be inserted on p. 848 after *M. orthrus*. It forms the intermediary between *orthrus* Hew. and *phoronis* (165 a), being more allied to the latter from which it differs by white instead of yellow hyaline spots. The veins are scarcely marked, black, beneath the yellow scaling is strongly reduced; by a broad black band the lemon-coloured basal part is separated from the quite brown distal half. Expanse of wings: 57 mm. Trinidad.

perissodora. **M. perissodora** Dyar is to be inserted after *M. pegasus* (p. 848, t. 165 b) near which it belongs. Above with a faint bronze lustre, dark red-brown, with black veins and 3 large hyaline spots through the disc, a large, quadrangular one in the cell, a somewhat larger, rectangular one below it, and a triangular submedian one. A subapical bent row of 5 small spots, below them two more. Hindwing with a darker median band. Hindwing beneath black, in the basal half light yellow, at the proximal margin with a black spot. Expanse of wings: 52 mm. Described from Mexico (Misantla, in June).

Genus **Phocides**.

Ph. lilea Reak. (p. 850, t. 165 d) is said to have been taken in 1 specimen in Texas.

To *Ph. batabano* Luc. (p. 851, t. 165 d) add as another synonym: (= okeechobee Worth).

Genus **Eudamus**.

For this genus (p. 852 to 858 and t. 160, 161), according to the more modern conception of the rules of priority, the older name of the genus: **Goniurus** Hbn. ought to be placed, with the type *simplicius* Stoll, which the American authors only apply for the group of *proteus-dorantes-simplicius-eurycles*. — For the group of *albofasciatus-zilpa* LINDSEY established the name of the genus **Chioides**, whereas *alcaeus* beside *melon* is placed into the new genus **Codattractus** Lindsey (*Heteropia* nom. praeocc. H. CARTER [*Sponges*]).

E. dorantes Stoll (p. 853, t. 160 a). — **rauterbergi** (not *rautenbergi*!) is a small dark form from Texas *rauterbergi*, and Arizona.

E. simplicius Stoll (p. 855, t. 160 e) and *E. eurycles* Latr. (ibid.) are 2 separate species, *simplicius* with and *eurycles* without a costal fold.

Genus **Epargyreus**.

E. tityrus F. (p. 860, t. 166 e). Add to it: ab. **obliteratus** Scddr. has instead of the discal band *obliteratus*, only 3 small roundish spots and only 1 subapical spot; beneath on the hindwing the silvery colour is more extensive.

E. zestos Hbn. (p. 861, t. 166 g). Hereto add as synonym: (= oberon Worth.). The species flies in Florida in August and September.

Genus **Acolastus**.

The genus must be named **Polygonus** Hbn., since *Acolastus* is preoccupied (Coleoptera).

A. amyntus F. (p. 862, t. 166 g) occurs in the form **arizonensis** Skinn., being above and beneath lighter *arizonensis*, to the north as far as Texas and Arizona.

Genus **Telegonus**.

T. elorus Hew. (p. 863, t. 167 b). Here another synonym (= subblasius Strd.) is to be added as well as another habitat: Argentina.

T. hahneli Stgr. (p. 863, t. 167 b, c) is also mentioned from North America (Arizona).

Genus **Protopenes**.

P. extrusus Fldr. (p. 865, t. 172 d). The species is to be eliminated in this volume. It is described from the Aru Islands and has been dealt with at large in Vol. IX. MABILLE's statement, mentioning the species from Colombia, is certainly a mistake.

Genus **Telemiades**.

T. perseus Mab. & B. (p. 868, t. 172 a). Insert after this species:

T. mnemon Schs. Above dark brown, in the basal half with thick yellowish-brown hair, also near *mnemon*, the anal angle before the margin and behind the cell, in the discal area below the cell tinted bluish-black. Hyaline spots yellowish, a large distally concave one in the cell-end, below it a narrow one, a small one above it farther distally; 3 small subapical spots, below them before the margin 2 more. On the hindwing only the costal margin, a blurred postmedian macular band, and marginal spots remain dark brown, the rest is densely dusted and haired yellowish-brown. Beneath dull blackish-brown, at the proximal margin grey, hindwing dull yellowish-brown with a dark distal margin. Expanse of wings: 28 mm. Costa Rica.

Genus **Rhabdoides**.

Rh. cellus Bsd. & Lec. (p. 871). According to the more modern conception *pseudocellus* Cool. is a distinct species.

Rh. casica H.-Schöff. (p. 871, t. 169 b). Add as synonym: (*orestes* Lintn.)

Genus **Naseus**.

Insert after *N. phocus dianina* (p. 873):

phintias. **N. phintias** Schs. Hereto belongs as the ♀ the insect figured as a variety of *phocus* in the supplement of the „Biologia Centrali-Americana“. Above dark brown, basal area and proximal margin dusted with orange-brown. Spots as in *phocus*, though with another small one between the radial veins. Hindwing quite orange-brown, but at the costal margin and narrowly at the distal margin blackish-brown. Otherwise, also beneath, like *phocus*. Expanse of wings: 55 mm. Costa Rica (Guapiles).

N. euribates Cr. (p. 873, t. 170 a) has recently also been reported from North America, the correct name of the species being *hesus* Ww. & Hew. (nec. Dbl.); *euribates* Cr. is very doubtful. As another questionable synonym add: *etias* Hew.

Genus **Murgaria**.

Insert after *M. albociliata* Mab. (p. 875, t. 170 c):

coyote. **M. coyote** Skinn. In the exterior hardly discernible from the preceding species; fringes of hindwings more or less intensely striped brown, in *albolineata* only at the apex and anal angle, in the centre they are always purely white. The genital organ, however, is quite different in both. Texas and Arizona.

Genus **Cogia**.

Insert between *C. hippalus* Edw. and *C. calchas* H.-Schöff. (p. 877, t. 170 e):

outis. **C. outis** Skinn. Ground-colour dull brownish-black like in *hippalus*, the forewing usually with 2 postdiscal hyaline spots between and above the median veins and distinct subapical spots whereby the species differs from the otherwise very similar *calchas*. Texas in August.

Genus **Thorybes**.

nevada. **Th. nevada** Scddr. being on p. 880 placed as a synonym to *Th. mexicana* H.-Schöff. has of late been regarded as a distinct species with *aemilea* Skinn. as synonym. In the exterior both are quite the same, but the genital organ is said to be constantly different. The valve of *mexicana* has a convex end and is only very feebly serrate, that of *nevada* has a concave end and is strongly dentate. Furthermore add after *mexicana*:

confusis. **Th. confusis** Bell. resembles *pylades* Scddr. so much that it is hardly discernible, and mixed up with it in most of the European collections; the ♂ is easily distinguished by the absent costal fold. The genital organ is very different by *confusis* having the bipartite uncus of the *pylades*-group and the penis of *Cogia calchas*, thus connecting the two genera to a certain extent.

Th. mysie Dyar (p. 880, t. 171 b, c) is also known from Arizona and is placed to the genus *Phaedinus* by LINDSEY.

immaculata. *Th. pylades* Scddr. (171 b) being on p. 880 placed to the genus *Cocceius* belongs to *Thorybes*. Add hereto yet: ab. **immaculata** Skinn. in which the hyaline spots are almost extinct. Also the species following *pylades* (p. 880): *drusius* Edw. has of late been placed to the genus *Thorybes*.

Genus **Hydraenomia**.

nebulosa. **H. nebulosa** sp. n. (178 b) is to be inserted after *H. orcinus*, p. 881. Larger and with broader wings than *orcinus*, but in the anatomical marks well fitting to it. Light greyish-brown, covered with long olive hair-scales, rather thinly scaled, disc of the hindwing partly sem-transparent. Forewing almost with the same hyaline spots as *orcinus*, but the cellular spot is divided into 2 long parallel ones, the one behind it is ⊔-shaped with very long, narrow sides. Beneath the same, but without the long hairing. The hindwing in the disc shows a large white, semi-transparent spot extending from the costal margin to the inner-marginal fold. 1 ♂ from the Songo (Coll. FASSEL).

H. zelotes *Hew.* (178 b) has longer hindwings than *orcinus* with a large, creamywhite discal spot; *zelotes*. in the marginal area, being covered with long, greyish-yellow hair-scales, there are black submarginal spots. On the forewing the similarly arranged hyaline spots are almost three times as large as in *orcinus*. Brazil (São Paulo).

H. aberrans *spec. nov.* (178 b) is on the whole somewhat like *zelotes*, the discal spot of the hindwing *aberrans*. much smaller and rounded. On the forewing the cellular spot and the spot below it form a broad band, the inner-marginal spot is reduced to a dot; the other hyaline spots are quite similarly arranged. The abdomen is white-haired as in *zelotes*, as well as the proximal margin of the hindwing. Described according to 1 ♂ from Tefé of the Coll. SEITZ.

Genus **Ate.**

Insert after *A. proxenus* (173 g) on p. 889:

A. canace *Schs.* (189 a). Similar to *proxenus*; the blackish-brown wings exhibit only subcostally in *canace*. the middle one minute hyaline dot and 2 subapical ones, the lower of which is removed proximally. The distal margin of the hindwing is broad blue from the upper radial vein to the proximal margin; costal margin and apex dull blackish-brown; a similarly coloured arcuate stripe from the lower median vein to the anal angle. Expanse of wings: 23 mm. Carillo (Costa Rica).

Genus **Pellicia.**

Insert after *P. dimidiata* (174 c) on p. 892:

P. olinda *Strd.* Distinguished from *dimidiata* by the palpi being also beneath dark and by quite *olinda*. black legs and tarsi. From Olinda (Brazil). It is doubtful whether it is a separate species.

Genus **Cyclosaemia.**

Insert between *C. elelea* and *luthaea* (174 i) on p. 895:

C. subcaerulea *Schs.* is likewise allied to *jacobus* and *elelea*, easily recognizable by the upper surface *subcaerulea*. showing metallic lustrous green costal margin, distal margin and veins in the apical part on a greyish-brown ground; marking as in *jacobus*, but without the 3 subapical spots; the discal eye-spot contains 2 bluish-white pupils. Beneath the forewing shows a green reflection, at the proximal margin it is grey. Hindwing of a bright blue, at the costal margin, apex and fringes brown. Expanse of wings: 31 mm. Costa Rica.

Genus **Echelatus.**

Insert after *E. sempiternus* (175 a) on p. 896:

E. depenicillus *Strd.* is easily separated from *sempiternus* and *varius* by the anal part of the hind- *depenicil-* wing beneath not being lighter. Described according to a ♂ from Colombia. Probably the insect corresponds *lus*. with *robigus* *Plötz* (175 a).

E. lucina *Schs.* (192 a) is easily separated from the other species by its metallic lustrous green head and *lucina*. collar. The blackish-brown forewing with a purple reflection exhibit dark antemedian and postmedian nebulous bands, the latter being bent above the lower radial and from there straight vertical to the proximal margin. Hindwing similar, but less reflecting purple, more intensely only in a stripe below the cell from the base to the distal margin. Beneath lighter brown with a whitish-grey base of the proximal margin. Expanse of wings: 37 mm. Guapiles (Costa Rica).

Genus **Mylon.**

Insert after *M. lassia* *Hew.* (175 c) on p. 897:

M. puncticornis *Strd.* differs from the allied species by only 3 subapical dots. Ground-colour dingy *puncticor-* white, dusted with grey and brown, only in the discal area of a purer white. Basal area black, with yellow *nis*. hairs and scales, distinctly dentately defined with a black cell-end streak, behind it blackish with 2 or 3 quite blurred lighter macular bands; in the cell with a small dark spot and below the transverse vein traces of a grey blurred band resting vertically on the proximal margin. Marginal area of hindwing 2 mm broad light greyish-brownish, with a darker marginal line and similar small submarginal spots, before them another darker, blurred, broken transverse band. In the middle besides 2 grey lines. Beneath white with fine dark transverse streaks corresponding with the markings above. Antennae black with light dots. Expanse of wings: 30 mm. According to 1 ♂ from Colombia.

Insert after *M. pelopidas* F. on p. 897:

brasilicola.

M. brasilicola Strd. (? = *decens* i. l.) (178 b, as *decens*). Whitish, densely dusted with grey, on the hindwing less so; the forewing shows a deep brown antemedian band being broader at the costal margin and ending pointed at the proximal margin, distally undulate; a postdiscal transverse line is proximally defined on the lower radial vein and above it inside broadly dusted with brown; in front of it below the costal margin a small white hyaline dot; an antemarginal brown line is towards the apex broadly triangular. Hindwing in the basal quarter more densely dusted with grey, distally bordered by a dark line, with a fine postdiscal transverse line and faint traces of an antemarginal line. Beneath somewhat lighter, marked the same, but the forewing is without the brown antemedian band, and at the anal angle of the hindwing is a round dark spot. South Peru, Brazil.

Genus **Xenophanes**.

H. tryxus Cr. (p. 898, t. 175 c) has also been taken in Texas (Brownsville) in July.

Genus **Eantis**.

E. thraso Hbn. (p. 902, t. 176 b). We add hereto as synonym: *tamenund* Edw. The species was also taken in Texas in May and July.

Genus **Staphylus**.

St. brenus G. & S. (p. 905, t. 176 f) is said to occur also in the southern part of North America. *arizonensis*. — The form **arizonensis** Mab. & B. will probably be the northern form, but unfortunately no particulars about it were to be obtained.

Add to p. 905, line 8 from below:

sodalis.

St. sodalis Schs. (189 a) is very closely allied to the preceding, it is smaller, also the spots are smaller, the distal ones in a dentate, oblique line. Expanse of wings: 29 mm. El Alto (Costa Rica).

Add to p. 906, line 19 from below:

machuca.

St. machuca Schs. (189 i) seems to be allied to the preceding, but it has 3 small subapical dots; in the lighter distal margin of the forewing there are between the veins darker marginal spots. Beneath the costal margin is scaled iridescent green; basal half and proximal margin of hindwing strewn with whitish. Throat white. Anterior femora grey. Expanse of wings: 26 mm. Costa Rica.

Genus **Timochares**.

T. trifasciatus Hew. (p. 907, t. 177) also occurs in the southern part of North America.

Genus **Miltomiges**.

Add to the end of the genus on p. 911:

verticalis.

M. verticalis Plötz. Above brown with a broad chestnut-brown costal margin in the basal half and anterior body, fringes reddish-brown. On the forewing a strangulated cellular spot is fused with the postdiscal spot below it, farther distally above it 2 more spots. Beneath the apex of the forewing is broad red-brown like the hindwing; the latter is densely strewn with a lilac grey at the distal margin and in the basal half except the costal margin, so that a broad median band remains brown. Brazil.

commodus.

M. commodus Plötz is similar, the spots are smaller, the cellular spot is absent. Also beneath very similar, but much more variegated, of a brighter red and violet with the smaller spots. Brazil. SCHAUSS in describing *Carystus subrufescens* (p. 981) states that the species is closely allied to *commodus*, both may therefore belong to *Carystus* or to this genus.

Genus **Pholisora**.

Add to *Ph. alpheus* Edw. (p. 913, t. 177 i) as synonym: *oricus* Edw. — For *alpheus*, *libya* and its *lena*, paler though intensely spotted form **lena** Edw. a separate genus was established by DYAR: **Hesperopsis**.

Genus **Chiomara**.

Ch. gesta H.-Schöff. (p. 913, t. 178 a). As another synonym *llano* Dodge is yet to be added. — This species is now placed to *Thanaos*, next to *lacustra* (178 i) and *burgessi*.

Genus **Heliopetes**.

H. domicella Erichs. (p. 914, t. 178 c). Another synonym is to be added: *nearchus* Edw.

H. nivella Mab. (p. 914, t. 178 d) also occurs in Texas where it flies in June.

H. laviana Hew. (p. 915, t. 178 e) also flies in Texas in June and July. The genus *Heliopetes* is, moreover, cancelled by LINDSEY since there are no anatomical marks of distinction from *Hesperia* F. (which has recently been named *Erynnis* Schrk.). The species would therefore have to be combined by the latter name. — To *ericetorum* Bsd. (178 f) add as synonym *alba* Edw. But *ericetorum* itself is to be regarded as a distinct species.

Genus **Thanaos**.

Instead of this name the older name of the genus **Thymele** F. would have to be placed.

In *Th. icelus* (p. 916) the author's name *Lintn.* is to be changed into *Scddr. & Burg.*

Th. somnus Lintn. (p. 916, t. 178 g) is to be placed as a form to *brizo* Bsd. & Lec. (178 f). — *callidus* Grinn. (part.) is the synonym of it. — Insert after *somnus*:

Th. burgessi Skinn. is very similar to *lacustra* Wright (p. 917, t. 178 i) which has to be ranged here, *burgessi*. it is on an average somewhat larger and has beneath at the apex of the forewing a light violet patch distinctly contrasting with the ground-colour and being absent in *lacustra*. The genitals are in both very different. Arizona, New Mexico.

Th. lucilius Lintn. (p. 916, t. 178 g) is a form of *persius* Scddr. (ibid.), as well as *afranius* Lintn. (ibid.) and **pernigra** Grinnell nec Wr. (p. 917) being the very dark race of the Pacific coast. Insert after *pernigra*. *lucilius*:

Th. callidus Grinn. (= *lilius* Dyar) is in the female marked like *brizo* (178 f), whereas the ♂ shows *callidus*. a very small white discal spot, 3 small white subapical spots and a rather large white spot in the middle of the marginal area. The genital organ resembles that of *pacuvius*. Brit. Colombia, California.

P. 916, line 25 from above: place *ausonius* as „aberrat.“ to *zarucco* (line 19 from below).

Th. juvenalis F. (p. 916, t. 178 g). Add as another (doubtful) synonym: *plautus* Scddr. & Burg.

Th. propertius Lintn. (p. 916, t. 178 h). Hereto add as synonym: (= *tibellus* Scddr. & Burg.); and besides: f. **borealis** Cary as a dark race with very much reduced light spots, from the Mackenzie. *borealis*.

Th. petronius Lintn. (p. 916, t. 178 g) is to be placed as a synonym to the following *horatius* Scddr. (178 h), and

Th. naevius Lintn. (p. 917, t. 178 h) belongs as a synonym to the preceding *terentius* Scddr. (p. 916). — Insert after *pacuvius* Lintn. (p. 917, t. 178 h):

Th. scudderi Skinn. (= *pacuvius* G. & S. nec Lintn.) in its exterior is not discernible from *pacu-* *scudderi*. *vius* Lintn. The genital organ is very different: the right valve has outside an almost twice as long and broad appendage and on the inside there is only a very small projection, in *pacuvius* a very long distally bent hook. From Texas and Arizona (July, August).

Th. clitus Edw. (p. 917, t. 178 h). Add hereto as synonyms: *maestus* G. & S. (p. 917) and *tatius* Dyar nec Edw. — *tatius* Edw., however, is to be placed as a form to *tristis* Bsd. (p. 917) as well as *clitus* Dyar nec Edw.

Genus **Melanthes**.

M. brunnea H.-Schöff. (p. 918) from the Antilles has also been taken in Florida.

Genus **Hesperia**.

As the name of the genus for the species belonging hereto, the name *Erinnys* Schrk. has been of late proposed.

H. syrichthus F. (p. 918, t. 178 k). As has been mentioned in the first passage on p. 919, *montivagus* Reak. (= *fumosa* Rev.) (178 k) has to be placed as the synonym or perchance as an insignificant, somewhat darker form to *syrichthus*, as the type in the Coll. STRECKER shows.

H. centaureae Rmb. (p. 918). Here the name *ruralis* Bsd. as a synonym is to be eliminated and placed behind the latter as a distinct species with the synonyms: *caespitalis* Bsd., *ricara* Edw., *petreius* Edw. (p. 919). It is a smaller and darker species than the preceding, distributed from Alberta to Texas.

H. xanthus Edw. (p. 919, t. 179 a). Insert here: f. **macdunnoughi** Obth. is only half as large with somewhat smaller spots slightly more distinctly and clearly contrasting with the purer dark ground. From Arizona.

The species called *H. montivaga* (p. 919) must be named: *tessellata* Scddr.

Insert between *D. gyrans* Plötz (p. 924, t. 180 a) and *microsticta* G. & S. (p. 925, t. 180 a):

Genus **Dalla**.

D. pirus. *D. pirus* Edw. (= *semicaeca* M. & B.). Above dull blackish-brown, marked as in *polingii*, but with smaller, partly quite absent spots. Hindwing without spots. Beneath lighter brown, the forewing in the disc somewhat blackened; 3 minute subapical spots close together in one line with 2 below the lower cell-angle. Utah, Colorado.

Genus **Pamphila**.

BARNES and MC DUNNOUGH propose to replace this name by: *Carterocephalus* Led.

P. floridae Mab. (p. 926) is to be cancelled here; the name is to be placed as a synonym to *Lero-dea eufala* Edw. (p. 941, t. 182 k).

Genus **Oarisma**.

O. edwardsii Barnes. To this species the description has yet to be added. Above bright golden yellow, fringes proximally dark brown, distally lighter. Beneath the forewing is yellowish, except the proximal margin being shaded with blackish. Hindwing greyish-yellow, in the anal third yellow. Described according to 1 ♂ from Denver (Colorado).

Genus **Ancyloxypha**.

A. longleyi French (p. 927) is to be placed to the preceding *numitor* (p. 927, t. 180 e) of which it is merely a form with a lustrous bluish-black upper surface.

Genus **Copaeodes**.

C. wrightii Edw. and *eunus* Edw. are to be placed into the following genus *Chaerephon*; before *Ch. rhesus* Edw. (p. 928, t. 180 e).

C. myrtis Edw. is to be cancelled as a species and the name to be placed as a synonym to *Ancyloxypha arena* Edw. (p. 928, t. 180 e).

To *C. singularis* H.-Schäff. (p. 928, t. 180 d) add as another synonym *nanus* Wts., and insert after this species:

C. rayata. **C. rayata** B. & McD. (= ♀ *procris* Edw. (part.), *waco* Plötz nec Edw., *aurantiaca* G. & S.). This small species resembles *arene* (180 e) above, but beneath it is easily discernible by a white ray of the hindwing extending from the base through the cell to the distal margin, the other cell-spaces being also striped whitish. Expanse of wings: 18 to 20 mm. Texas to Mexico.

Genus **Chaerephon**.

Beside the above mentioned species *Copaeodes wrightii* Edw. (180 d) and *eunus* Edw. (180 e), also *Erynnis carus* Edw. (p. 930) and *Stomyles simius* Edw. (p. 943, t. 193 b) have recently been inserted in this genus.

Genus **Erynnis**.

As the name *Erynnis* has to supersede the genus having hitherto been known as *Hesperia* in the literature, BARNES and MC DUNNOUGH have proposed to designate the former *Erynnis* as genus *Hesperia*. The arrangement of the species differs so entirely in the position and synonymy from the former arrangement by DYAR that we prefer to follow the arrangement stated by A. W. LINDSEY and according to the latest researches by Mr. F. H. BENJAMIN; in order to facilitate this, we add the number of pages and lines of our former treatment.

H. uncas Edw. (= *ridingsii* Edw. [p. 930, line 24 from below], ♀ *axius* Plötz [p. 930, line 20 from below]).

H. lasus Edw. p. 930, line 25 from above.

H. licinus Edw. p. 930, line 4 from below.

H. meta Scddr. p. 930, line 24 from below.

H. morrisoni Edw. (= *morrisoni* Plötz) p. 931, line 1 from above.

H. columbia Scddr. (= *sylvanoides* Scddr. [p. 934, line 1 from above], *california* Wright, *crynnoioides* Dyar (p. 931, line 6 from below)), p. 929, line 2 from below.

H. cabelus Edw. p. 930, line 29 from above.

H. harpalus Edw. p. 930, line 12 from above.

H. comma L. p. 929, line 14 from below.

— f. *colorado* Scddr. (line 4 from below). Under surface bright green, the band purely white, short, the basal spots united in the shape of a U.

— f. *manitoba* Scddr. (= *laurentina* Lyman [p. 930, line 2 from above]) p. 929, line 13 from below. Beneath golden brown with white spots.

— f. *idaho* Edw. p. 929, line 6 from below.

— f. *assiniboia* Lyman p. 930, line 1 from above.

— f. *oregonia* Edw. p. 929, line 1 from below. Beneath like the preceding but the band yellowish instead of white.

H. juba Scddr. (= *comma* Bsd.) p. 929, line 9 from below.

H. woodgatei Willms. was described as a form of *juba*, but it seems to be a distinct species which is very similar to *juba*, but shows much smaller spots; the under surface is generally dark, scantily strewn. Arizona, Texas, New Mexico, taken in September and October.

H. viridis Edw. p. 929, line 10 from below is a distinct species.

H. nevada Scddr. p. 929, line 7 from below, is also a distinct species; it flies from North Canada to Arizona.

H. ruricola Bsd. p. 939, line 16 from below.

H. attalus Edw. p. 930, line 15 from below.

— f. *seminole* Scddr. (= *quaiapen* Scddr., *slossonae* Skinn., *attalus* Holl.) is above and beneath very dark; the ♂ has smaller spots and on the forewing beneath but very little reddish-yellow; the ♀ has quite whitish spots and beneath no reddish-yellow at all.

H. horus Edw. (p. 968, line 2 from below) owing to the stout antennal club with a short point does not belong to *Lerema*, but hereto; as, however, only 1 ♀ is known, its position remains uncertain; it is perhaps merely a melanotic specimen of another species (*attalus* or *leonardus*).

H. leonardus Harr. p. 934, line 19 from above.

H. meskei Edw. (= *straton* Edw.) p. 934, line 23 from above.

H. ottoe Edw. p. 930, line 21 from above.

H. pawnee Dodge (= *ogallala* Leussler) p. 930, line 17 from above.

— f. *montana* Skinn. (line 19 from above).

H. sassacus Harr. p. 930, line 6 from above.

— f. *dacotae* Skinn. p. 930, line 9 from above.

— f. *manitoboides* Flesch. p. 930, line 4 from above. *napa* Edw. p. 930, line 25 from below belongs to *Augiades* as the Colorado-form of *sylvanoides* (p. 934, t. 181 f, g); it is larger and beneath less variable.

yuma Edw. p. 930, line 11 from below, likewise belongs to *Augiades* (p. 939) with the synonym: *scudderi* Skinn. (p. 936, line 6 from below).

carus Edw. p. 930, line 8 from below, as stated under *Chaerephon*, belongs to this genus (p. 928) after *Ch. rhesus*.

Genus **Thymelicus**.

brettus Bsd. & Lec. (p. 931, line 16 from below) is placed to the genus *Politis* (p. 932) by BARNES and MC DUNNOUGH, also the following species *mystic* (line 9 from below) with *dacotah* Edw. (= *pallida* Skinn.) (p. 930, line 25 from below) as a form of it. — ab. **weetamoo** Scddr. and ab. **nubs** Scddr. are both darkend melanotic female forms. *weetamoo*, *nubs*.

chusca (p. 932, line 4 from above) and *draco* (ibid. line 8) are likewise to be placed to *Polites*, the former as a form of *Pol. sabuleti* Bsd. (p. 932, t. 181 d).

siris Edw. (p. 932, line 11 from above, t. 181 b) is to be placed as a synonym to *sonora* Scddr. (p. 934, line 1 from above, as *sylvanoides*) and comes to the

Genus **Polites** (p. 932).

tecumseh. *chispa* Wr. (p. 932, line 8 from below, t. 181 d) is to be replaced by the older name **tecumseh** Grinnel; it comes as a form to *sabuleti*, whilst the name *chispa* Wr. becomes synonymous.

Genus **Catia**.

C. druryi Latr. (p. 933, line 13 from above) has to be replaced by the older name *otho* with ABBOTT and SMITH as authors.

Genus **Ochlodes**.

Line 4 from below:

To *nemorum* comes *verus* Edw. of p. 934, line 23 from below, as a synonym and *pratincta* Bsd. of p. 934, line 26 from below, as a form, whereas *yreka* Edw. is to be transferred to *agricola* Bsd. line 6 from above.

P. 934, line 1 from above, instead of the synonym *sonora* place the two following *agricola* Bsd. (= *francisca* Plötz) as synonyma.

Line 9 from above: *snoëi* Edw. is to be placed to *Augiades* (p. 939).

Lines 19 and 23: *leonardus* Harr. and *méskei* Edw. are to be ranged in the genus *Hesperia* after *horus* Edw.

Genus **Limochares**.

L. bimacula Grt. & Rob. p. 934, line 14 from below, is to be placed to the genus *Euphyes* (p. 935).

Line 10 from below: *pontiac* Edw. becomes synonymous to *conspicua* Edw. which name has the priority.

rhena. Line 7 from below: place *manataaquia* to the genus *Polites* (p. 932). Add as a form of it: **rhena** Edw. (= *alcina* Skinn.) being a lighter, western race from Colorado.

Line 2 from below: *yehl* Skinn. belongs into the genus *Paratrytone* p. 936.

Line 3 from above: *dion* belongs into the genus *Euphyes* (p. 935), as well as *arpa* (line 6) and *palatka* (line 8).

alabamiae. To *L. dion* (p. 935, line 3 from above) add as a form: **alabamiae** Linds. The reddish-yellow colour of the upper surface is reduced to a single subapical spot, a small stripe in the lower cell-end and a small spot behind it, which is followed by some more along the distal edge of the scent-spot; on the hindwing the reddish-yellow colour is also reduced. Beneath darker than *dion*; instead of the macular band there are only 3 small spots behind the stigma; the 2 light rays contrast less with the ground-colour. Alabama. Insert after it:

dukesi. **L. dukesi** Linds. like *dion* shows on the hindwing beneath 2 light rays; it is much darker beneath, and the spots of the forewing are absent altogether. Above the reddish-yellow is much darker, also on the disc of the hindwing, on the forewing it is only present as a small spot behind the stigma. Alabama.

L. byssus Edw. (p. 935) with a doubtful synonym (? = *bulenta* Bsd. & *Lec.*) belongs to the genus *Atrytone* Scddr. (p. 937).

Insert after it:

kumskaka. **kumskaka** Scddr. is a questionable species from Iowa, which was hitherto regarded as *conspicua* Edw. It seems to be very closely allied to *byssus* (181 k), if it is not to be regarded merely as a local form of this species only known from Florida.

L. cernes Bsd. & *Lec.* (p. 937, line 18 from above) is to be ranged with the genus *Polites* (p. 932), but it becomes synonymous to *thauwas* F., with the other synonym *phocion* F.

Genus **Euphyes**.

E. metacomet Harr. (p. 935) becomes synonymous to *vestris* Bsd. which name has the priority, to which also *osyka* Edw. (p. 935, t. 182 a) is to be added.

E. verna Edw. (p. 935, t. 182 a) belongs into the genus *Atrytonopsis* (p. 940).

Genus **Oligoria**.

To *O. maculata* Edw. (p. 935, t. 181 a) add as another synonym: *norus* Plötz.

Genus **Atrytone**.

delaware Edw. (p. 937, line 12 from above, t. 182 c) becomes synonymous to *logan* Edw. which name has the priority. Add to it: f. **lagus** Edw. as the western race with a very light under surface.

zabulon and *hobomok* (p. 937, lines 17 and 22) belong into the genus *Poanes* (p. 936), also *melane* Edw. (p. 938, line 17 from above) and *taxiles* Edw. (p. 939, line 20 from below).

A. arogos Bsd. & Sec. (p. 939, t. 182 g). Add yet as synonym: *vitellius* Abb. & Sm.

A. streckeri Skinn. is to be placed as a synonym to *Choranthus radians* Luc. (p. 941) which species has of late been placed to *Euphyes* (p. 935) beside *dukesi* and *dion*.

A. ruricola Bsd. belongs to the genus *Hesperia* (formerly *Erynnis*) between *juba* and *attalus* (p. 930).

Genus **Atrytonopsis.**

Into this genus, between *hianna* (p. 940) and *judas* (p. 941) belong yet *A. loammi* Whitney (= *regulus* Edw.) of p. 968, line 7 from below and *lunus* Edw. (p. 969, line 1 from above).

vierecki Skinn. resembles *deva* (182 h), but it is smaller, lighter and greyer, with 2 occasionally connected spots in the cell-end of the forewing and a more distinct stigma. New Mexico, in June.

cestus Edw. is very closely allied to *python* Edw. (182 i), but larger, the spot between the median veins of the forewing very large and triangular. Hindwing beneath watered with purple blackish, the spots semi-diaphanous. Only the type from Arizona seems to be known.

edwardsi B. & McD. Above deep blackish-brown, base of forewing and costal margin scaled yellow, hindwing in the basal half haired yellow. Forewing with a large, quadrangular hyaline spot in the cell, 3 minute subapical spots and 3 postdiscal ones, the lowest being small and triangular, the middle one very large and quadrangular. Hindwing with a small white cellular spot and 3 behind it, the uppermost being the largest. Beneath the apex of the forewing and the hindwing are dusted with a bluish grey, the hindwing beside the spots of the upper surface with 3 whitish basal spots. Expanse of wings: 30 to 35 mm. Arizona.

To *python* Edw. (182 i) belongs f. *margarita* Skinn. being the race from New Mexico, which is beneath on the hindwing less contrasting, the spots distally not shaded with brown. Above the spots are not so yellowish as in *python*.

Genus **Lerodea.**

Before *eufala* p. 941, line 18 from above, insert: *arabus* Edw. of p. 943, line 28 from below.

Genus **Amblyscirtes.**

Line 19 from below: *eos* (p. 942) becomes a synonym to *alternata* Grt. & Rob. which name is to be cancelled with *samoset* (p. 943, line 5 from above), and add as another synonym: *meridionalis* Dyar.

Genus **Stomyles.**

St. cassus Edw. (p. 903), *comus* Edw. to which species the name *quinquemacula* Skinn. (of *Pamphila* p. 927, line 1 from above) belongs yet as synonym, as well as *hegon* Scddr. (*samoset* Scddr. becomes synonymous) are of late ranged with *Amblyscirtes* (p. 942); so are *nereus* Edw. (183 b, c), *tolteca* Scddr. (183 b), *florus* G. & S., probably also *gallio* Mab. and *pupillatus* Mab. (183 c). The genus *Stomyles* is to be cancelled again. Of the remaining species *fusca* Grt. & Rob. is to be placed to the genus *Megistias* (p. 973) and *ostari* Skinn. to *Mastor* (p. 972).

Genus **Calpodes.**

Place to the end of this genus (p. 944) after *C. ethlius* Cr.:

C. coscinia H.-Schäff. (p. 949, line 25 from above). Specimens from Brownsville (Texas), according to BARNES and MC DUNNOUGH, as well as the Mexican specimens, are better placed to the genus *Calpodes* owing to the spined middle tibiae. It is not impossible that FELDER in the description of his *ares* has had another species before him with unspined tibiae, for which reason the insect will for the present be better ranged by HERRICH-SCHÄFFER's name.

Genus **Mastor.**

bellus and *phylace* (p. 972, t. 187 g) are nevertheless 2 separate species; the former is found in North America in the mountains of South Arizona and has two breeds (in May, June, and the second in July) being entirely alike, whereas *phylace* occurs in South Colorado and New Mexico and probably yields but one breed in June. The scent-spot is in both species different: in *bellus* long and narrow, in *phylace* shorter and more compact.

To *anubis* (line 24 from below) add as another synonym: *bicolor* Mab.

List

of the new species and varieties described in vol. 5.

- abdonides* (Cyclosma) *Draudt* 978.
aberrans (Hydraenomia) *Draudt* 1019.
aberrans (Phyc. actæina) *Röb.* 448.
abrupta (Phyc. claphiaea) *Röb.* 439.
abulonia (Prep. omphale) *Fruhst.* 562.
abylina (Adelpha abyta) *Fruhst.* 524.
acaudata (Anaea) *Röb.* 586.
actinotina (Phyciodes) *Röb.* 449.
acuta (Taygetis) *Weym.* 188.
adana (Helic. hydara) *Seitz* 392.
adstricta (Adelpha erymanthis) *Fruhst.* 518.
adunea (Thecla) *Draudt* 759.
advena (Rinthon) *Draudt* 957.
aegina (Ager. amphinome) *Fruhst.* 544.
aenea (Peris. priene) *Röb.* 497.
aepeona (Thecla) *Draudt* 793.
aequatorialis (Catast. chelidonis) *Röb.* 71.
aequatorialis (Phyciodes) *Röb.* 442.
affineola (Lymanop. albomaculata) *Weym.* 249.
affinis (Catasticta) *Röb.* 105.
agamedes (Morpho patroclus) *Fruhst.* 343.
agathina (Euptych. chloris) *Weym.* 219.
agathus (Prep. laertes) *Fruhst.* 560.
agele (Eun. sophonisba) *Seitz* 487.
agnes (Dynamine) *Röb.* 506.
agraulis (Pseudosteroma) *Weym.* 242.
aguaca (Thecla) *Draudt* 799.
ahasverus (Agrias pericles) *Fassl* 1040.
alaskensis (Argynn. pales) *Lehm.* 424.
alba (Colias flaveola) *Röb.* 94.
alba (Colias philodice) *Röb.* 91.
alba (Dism. melite) *Röb.* 99.
albescens (Catasticta hegemon) *Röb.* 1017.
albescens (Dalla saleca) *Draudt* 923.
albescens (Phyciodes) *Röb.* 444.
albida (Emesis lucinda) *Seitz* 695.
albifasciata (Catagr. arirhambae) *Röb.* 1032.
albifasciata (Epiph. orea) *Röb.* 478.
albimacula (Dismorphia) *Röb.* 1024.
albimaculata (Charon. eurytela) *Röb.* 68.
albimedia (Systasea emorsa) *Draudt* 904.
albina (Adelpha erotia) *Fruhst.* 519.
albiplaga (Mesene epaphus) *Seitz* 676.
albipuncta (Phyciodes) *Röb.* 444.
albofascia (Phyc. drusilla) *Röb.* 441.
alcyoneus (Barbic. basilis) *Seitz* 664.
alina (Pteron. lincera) *Hsch.* 153.
alpheios (Ager. arete) *Fruhst.* 545.
amalda (Euptychia) *Weym.* 213.
amaldina (Leucoth. amalda) *Hsch.* 149.
amanda (Mesosemia telegone) *Seitz* 640.
amanga (Athyr. mechanitis) *Hsch.* 121.
amazonica (Dynamine) *Röb.* 505.
ambra (Eupt. ashna) *Weym.* 198.
amithrata (Methon. cecilia) *Seitz* 633.
amoena (Actin. callianthe) *Jord.* 364.
amphiktion (Prep. meander) *Fruhst.* 556.
amphilecta (Actinote) *Jord.* 366.
analogia (Mesos. phelina) *Seitz* 640.
anastomosis (Thecla mecrida) *Draudt* 766.
anceps (Anaea) *Röb.* 1042.
androdaixa (Helic. phyllis) *Seitz* 393.
angusta (Argyroph. lamna) *Weym.* 233.
angustifasciata (Peris. oppelii) *Röb.* 1035.
anina (Melin. mediatrice) *Hsch.* 123.
antaeus (Hamear. erostratus) *Seitz* 701.
anthaxis (Leucoth. astraea) *Hsch.* 147.
antoniae (Adelph. plesauze) *Fruhst.* 521.
apollonidas (Cal. idomeneus) *Fruhst.* 324.
apicalis (Phyc. pardalina) *Röb.* 447.
appiades (Anaea appias) *Röb.* 585.
appiceata (Anaea troglodyta) *Röb.* 582.
aquillia (Adelpha scriphia) *Fruhst.* 531.
araguaya (Lymnas) *Seitz* 660.
arcana (Mechan. lycidice) *Hsch.* 126.
areas (Megistias) *Draudt* 975.
archelaus (Eusel. teleclus) *Seitz* 632.
archidona (Adelpha lerna) *Fruhst.* 525.
arene (Ager. arinome) *Fruhst.* 544.
argentiferus (Morpho menelaus) *Fruhst.* 355.
argentina (Thespheus) *Draudt* 952.
argolis (Catasticta) *Röber* 1017.
argus (Megistias) *Draudt* 975.
argus (Padraona) *Draudt* 946.
argyria (Prep. eugenes) *Fruhst.* 560.
aristophanes (Caligo menoetius) *Fruhst.* 326.
arius (Euptychia) *Weym.* 198.
arproxida (Thecla) *Draudt* 775.
artaxata (Pieris phaloë) *Röb.* 1016.
artemis (Callicore) *Röb.* 502.
aspermatus (Thespheus) *Draudt* 952.
asphorus (Opsiph. batea) *Fruhst.* 294.
assula (Thecla) *Draudt* 748.
asterie (Tayg. andromeda) *Weym.* 189.
astiana (Symmach. probetor) *Seitz* 682.
astynomides (Dism. amphione) *Röb.* 102.
aternia (Ager. iphithime) *Fruhst.* 543.
aterrima (Barbic. melanops) *Seitz* 663.
atinia (Ager. februa) *Fruhst.* 540.
atra (Phyc. ianthe) *Röb.* 443.
attalis (Prep. pheridamas) *Fruhst.* 564.
attalus (Mesos. eumene) *Seitz* 638.

attrita (Euselasia arbas) *Seitz* 627.
atymnides (Thecla loxurina) *Draudt* 758.
aufidia (Adelpha) *Fruhst.* 525.
aurantia (Actinote demonica) *Jord.* 368.
aureilimbata (Peris. guerini) *Röb.* 1035.
aureola (Morpho aurora) *Fruhst.* 319.
aurigera (Euptychia) *Weym.* 194.
auristriga (Vorates) *Draudt* 976.
aurora (Phyciodes) *Röb.* 449.
aurorina (Callitaera aurora) *Weym.* 175.
aurorina (Thecla) *Draudt* 755.

bacche (Mesos. maenades) *Seitz* 639.
banghaasi (Colaciticus johnstoni) *Seitz* 672.
banghaasi (Taygetis) *Weym.* 190.
bartolme (Adelpha phliassa) *Fruhst.* 521.
batesi (Dismorphia) *Röb.* 104.
batzebina (Leodonta) *Röb.* 1017.
beata (Ithomia ellara) *Hsch.* 141.
bella (Catag. mena) *Röb.* 1031.
bellus (Choranthus) *Draudt* 941.
belsazar (Agrias godmani) *Fassl* 1038.
biedermanni (Adelpha) *Fruhst.* 530.
biedermanni (Agrias claudia) *Fassl* 1037.
bilix (Thecla) *Draudt* 759.
bipupillata (Dynam. mylitta) *Röb.* 507.
bithyna (Catasticta) *Röb.* 1018.
bogotana (Hemiargus hanno) *Draudt* 819.
bogotana (Thespieus) *Draudt* 952.
boliviana (Callic. phlogea) *Röb.* 501.
boliviana (Carystoides cathaea) *Draudt* 988.
boliviana (Epiph. dinora) *Röb.* 478.
boliviana (Hesperocharis nera) *Röb.* 78.
boliviana (Peris. priene) *Röb.* 497.
boliviana (Phyc. teletusa) *Röb.* 438.
boliviensis (Dism. lewyi) *Röb.* 101.
boliviensis (Terias arbela) *Röb.* 81.
borilis (Leucothyris) *Hsch.* 147.
brasiliensis (Eumaeus minyas) *Draudt* 745.
brisotis (Leucothyris dolabella) *Hsch.* 116.
brunhilda (Phyc. olivencia) *Röb.* 447.
brunnea (Pteron. veia) *Hsch.* 153.
bryson (Catast. nimbice) *Röb.* 70.
bueya (Pteron. tucuna) *Hsch.* 153.

caelia (Adelpha basiloides) *Fruhst.* 524.
calliphane (Adelpha) *Fruhst.* 526.
calypso (Gonepteryx menippe) *Röb.* 88.
campeda (Adelpha nea) *Fruhst.* 532.
campicola (Anatole glaphyra) *Seitz* 716.
caninia (Adelpha cocala) *Fruhst.* 516.
canuleia (Adelpha aufidia) *Fruhst.* 526.
capnodes (Actin. abana) *Jord.* 360.
carens (Monethe albertus) *Seitz* 671.
carmela (Adelpha attica) *Fruhst.* 529.
carnosa (Dism. mercenaria) *Röb.* 1025.
carycina (Actinote) *Jord.* 373.
catablymata (Ager. feronia) *Fruhst.* 542.
catapoecila (Eusel. eucritus) *Seitz* 624.
catasticta (Hesperocharis) *Röb.* 78.
catharina (Thecla) *Draudt* 788.
cauca (Actin. equatoria) *Jord.* 371.

cauca (Dism. mirandola) *Röb.* 100.
cauca (Pereute charops) *Röb.* 66.
caucaënsis (Mechan. polymnia) *Hsch.* 124.
caucana (Catast. prioneris) *Röb.* 71.
caucana (Lymanop. panacea) *Weym.* 250.
caudata (Anaea rutilans) *Röb.* 580.
cearaica (Bacotis johannae) *Seitz* 685.
cecropterus (Xeniades) *Draudt* 951.
celemina (Phyciodes) *Röb.* 448.
centralamericana (Meganost. eurydice) *Röb.* 94.
centralis (Anaea glauca) *Röb.* 586.
centuncula (Thecla) *Draudt* 805.
cerachates (Adelpha plesaura) *Fruhst.* 521.
cesilas (Adelpha thessalia) *Fruhst.* 523.
cethosia (Helic. xanthocles) *Seitz* 389.
cetra (Thecla) *Draudt* 776.
chalcis (Prep. chalciope) *Fruhst.* 557.
charybdis (Dalla) *Draudt* 921.
cheiremon (Eryph. polyxena) *Fruhst.* 311.
chelidonides (Catasticta) *Röb.* 1021.
chiliarches (Prep. chromus) *Fruhst.* 558.
chiricana (Catast. hegemon) *Röb.* 1017.
chiricanus (Protog. hippona) *Röb.* 580.
chiriquensis (Dirc. klugi) *Hsch.* 138.
chloris (Hesperoch. nereina) *Röb.* 79.
chlorocephala (Eantis) *Draudt* 903.
chlorophila (Anaea) *Röb.* 591.
chlorotaenia (Chlor. lavinia) *Röb.* 546.
chrysides (Morpho helena) *Fruhst.* 355.
cibyra (Adelpha arete) *Fruhst.* 529.
cillenula (Eueides alipha) *Seitz* 399.
cillutinaea (Lymanopoda) *Weym.* 250.
cillutinaea (Thecla loxurina) *Draudt* 758.
cisandina (Hammaris) *Seitz* 701.
citrina (Boeotis felix) *Seitz* 684.
clara (Actin. pellene) *Jord.* 372.
clara (Catasticta) *Röb.* 74.
clara (Perisama) *Röb.* 1034.
clarissa (Thecla) *Draudt* 797.
elio (Euptychia) *Weym.* 197.
cocalina (Adelpha trinita) *Fruhst.* 516.
coccineta (Amarnthis meneria) *Seitz* 691.
colombica (Mesene phareus) *Seitz* 675.
concolor (Anaea arginussa) *Röb.* 584.
conflua (Phyc. flavimacula) *Röb.* 442.
confluens (Actin. diceus) *Jord.* 365.
confluens (Helic. phyllis) *Seitz* 394.
confusa (Potamanax) *Draudt* 899.
connexa (Dalla) *Draudt* 921.
connexa (Helic. narcaea) *Seitz* 378.
eora (Episcada) *Hsch.* 151.
core (Dynamine agacles) *Röb.* 504.
cortone (Morpho peleides) *Fruhst.* 345.
costaricensis (Eumaeus minyas) *Draudt* 745.
costipunctata (Pedal. paeonides) *Weym.* 256.
crameri (Tayg. mermeria) *Weym.* 185.
eratippa (Lymnas) *Seitz* 661.
cretacea (Helic. telesiphe) *Neustett.* 597.
crispisulcans (Thecla) *Draudt* 799.
cteatus (Paraphthonia) *Seitz* 672.
eucullina (Euptychia calixta) *Weym.* 209.
euneifera (Barbicornis melanops) *Seitz* 663.
euyaba (Adelpha thoasa) *Fruhst.* 522.
euzeona (Hesperia) *Draudt* 919.
cyanea (Actinote alcione) *Jord.* 361.
cyanites (Morpho rhetenor) *Fruhst.* 351.

cyanomelas (*Myscelia*) *Röb.* 482.
cyanus (*Thecla*) *Draudt* 796.

daceleia (*Adelpha iphiclea*) *Fruhst.* 523.
daguana (*Adelpha cytherea*) *Fruhst.* 521.
damon (*Adelpha serpa*) *Fruhst.* 531.
daphnicia (*Ager. chloë*) *Fruhst.* 541.
dealbata (*Perisama*) *Röb.* 1035.
dealbata (*Thecla phydela*) *Draudt* 752.
decaerulea (*Bia actorion*) *Weym.* 276.
decolorata (*Ituna lamirus*) *Hsch.* 116.
decorata (*Phyc. levina*) *Röb.* 450.
deflorata (*Pythonides paterculus*) *Draudt* 887.
deleta (*Adelpha erotica*) *Fruhst.* 518.
delinita (*Adelpha erotica*) *Fruhst.* 519.
demaculata (*Anaea xenocrates*) *Röb.* 1042.
demeter (*Dism. proserpina*) *Röb.* 100.
derondina (*Leucoth. deronda*) *Hsch.* 148.
deserta (*Thecla syncellus*) *Draudt* 779.
despoliata (*Adelpha cytherea*) *Fruhst.* 521.
detrita (*Catast. toca*) *Röb.* 73.
devergens (*Trioedusa*) *Draudt* 948.
diademata (*Adelpha celerio*) *Fruhst.* 530.
diadochus (*Adelpha celerio*) *Fruhst.* 531.
diasia (*Ager. ferox*) *Fruhst.* 541.
diatrete (*Adelpha naxia*) *Fruhst.* 525.
dicina (*Thecla*) *Draudt* 803.
didia (*Adelpha cocala*) *Fruhst.* 516.
didyma (*Phyc. velica*) *Röb.* 438.
difficilis (*Xeniades*) *Draudt* 951.
dignota (*Thecla*) *Draudt* 754.
dilecta (*Epiphile*) *Röb.* 478.
dimidiata (*Brassolis astyra*) *Fruhst.* 287.
dionysos (*Caligo atreus*) *Fruhst.* 326.
discophora (*Anaea*) *Röb.* 1042.
discreta (*Lycorea halia*) *Hsch.* 116.
discreta (*Melin. zaneka*) *Hsch.* 122.
disjuncta (*Dism. acutipennis*) *Röb.* 99.
dismorphina (*Charon. eurytela*) *Röb.* 68.
dissentanea (*Thecla*) *Draudt* 758.
dissultus (*Thespieus*) *Draudt* 954.
disyllus (*Narope sarastro*) *Fruhst.* 329.
ditaeniata (*Callicore*) *Röb.* 1036.
divergens (*Helicopsis cupido*) *Seitz* 633.
diversa (*Actin. ozomene*) *Jord.* 363.
dividens (*Perisama*) *Röb.* 1034.
divina (*Anaea dia*) *Röb.* 591.
divina (*Euptychia*) *Weym.* 217.
domina (*Corades pannonia*) *Weym.* 274.
domna (*Prep. chalciope*) *Fruhst.* 557.
donata (*Pteronymia*) *Hsch.* 152.
donia (*Dism. astynome*) *Röb.* 1025.
doris (*Terias*) *Röb.* 82.
doubledayi (*Leptoph. eleone*) *Röb.* 62.
draudti (*Microt. elva*) *Röb.* 453.
dromica (*Hymenitis*) *Hsch.* 163.
drusilla (*Phyciodes*) *Röb.* 441.
duilliae (*Adelpha celerio*) *Fruhst.* 531.
dyrrhachius (*Eusel. eutyclus*) *Seitz* 624.
dysmenia (*Theorema*) *Draudt* 745.

echidna (*Lymnas epijarbas*) *Seitz* 661.
echiolus (*Thecla echion*) *Draudt* 786.
eclipsis (*Panara thisbe*) *Seitz* 657.
effusa (*Potamanax*) *Draudt* 899.

efigurata (*Morpho catenarius*) *Fruhst.* 340.
elaphina (*Phyc. elaphiaea*) *Röb.* 439.
elegans (*Anaea magdalena*) *Röb.* 591.
elegia (*Tayg. andromeda*) *Weym.* 189.
ella (*Euselasia*) *Seitz* 625.
ella (*Terias elathea*) *Röb.* 84.
ella (*Thecla*) *Draudt* 750.
elodina (*Pieris aripa*) *Röb.* 60.
eminens (*Callith. optima*) *Röb.* 492.
enama (*Leucothyris*) *Hsch.* 147.
enimanga (*Nymphidium*) *Seitz* 711.
enyo (*Necyria bellona*) *Seitz* 669.
epiphaea (*Activ. equatoria*) *Jord.* 371.
epizygis (*Adelpha*) *Fruhst.* 527.
epona (*Adelpha*) *Fruhst.* 527.
erebia (*Phyciodes*) *Röb.* 449.
eremita (*Euptychia*) *Weym.* 210.
eresia (*Gnathotr. exclamationis*) *Röb.* 454.
ergines (*Tharops hebrus*) *Seitz* 716.
ernestina (*Adelpha jordani*) *Fruhst.* 518.
ernestina (*Euptychia*) *Weym.* 206.
eros (*Morpho sulkowskyi*) *Fruhst.* 349.
erotica (*Helicopsis cupido*) *Seitz* 633.
erratica (*Riodina lysippus*) *Seitz* 658.
eudia (*Callithea depuiseti*) *Röb.* 492.
eupatra (*Eusel. eusepus*) *Seitz* 630.
eupolema (*Ager. quatemalena*) *Fruhst.* 542.
euptychia (*Thecla*) *Draudt* 811.
eutropius (*Morpho laertes*) *Fruhst.* 339.
evanescens (*Phyc. orthia*) *Röb.* 438.
evanides (*Hyposc. adelphina*) *Hsch.* 144.
exanima (*Adelpha iphiclea*) *Fruhst.* 523.
excisa (*Lymanopoda*) *Weym.* 247.
eximia (*Catasticta*) *Röb.* 74.
extensa (*Actin. alcione*) *Jord.* 361.
extincta (*Phyc. catula*) *Röb.* 445.
extincta (*Pierella dracontis*) *Weym.* 177.
extrema (*Thecla ion*) *Draudt* 754.
exul (*Stalactis phaedusa*) *Seitz* 719.

fabricia (*Adelpha cuboca*) *Fruhst.* 518.
faenius (*Dynastor darius*) *Fruhst.* 289.
falcipennis (*Adelpha*) *Fruhst.* 526.
farinosa (*Artines*) *Draudt* 987.
farinulenta (*Ager. feronia*) *Fruhst.* 542.
fascia (*Metron*) *Draudt* 969.
fasciata (*Lycorea ceres*) *Hsch.* 115.
fasciata (*Peris. humboldti*) *Röb.* 1035.
fasciata (*Phyciodes*) *Röb.* 452.
fasciatella (*Phyc. fasciata*) *Röb.* 438.
fascinatrix (*Helic. melpomene*) *Seitz* 386.
fassli (*Adelpha nea*) *Fruhst.* 532.
fassli (*Anaea pasibula*) *Röb.* 591.
fassli (*Aricoris*) *Seitz* 721.
fassli (*Callithea*) *Röb.* 493.
fassli (*Catagr. texa*) *Röb.* 495.
fassli (*Epiphile*) *Röb.* 479.
fassli (*Eurybia dardus*) *Seitz* 636.
fassli (*Hylephila*) *Draudt* 929.
fassli (*Mesos. metuana*) *Seitz* 642.
fassli (*Pedal. chrysotaenia*) *Weym.* 259.
fassli (*Peris. calamis*) *Röb.* 499.
fassli (*Phyc. ildica*) *Röb.* 447.
fassli (*Phyc. mediatrice*) *Röb.* 451.
fassli (*Potamanax*) *Draudt* 899.

- fassli* (Protop. hippona) *Röb.* 580.
felderi (Anaea glauca) *Röb.* 586.
felderi (Phyc. mediatris) *Röb.* 451.
feminalis (Thecla pholeus) *Draudt* 785.
fenestrata (Ituna lamirus) *Hsch.* 116.
fenestrata (Phyciodes) *Röb.* 450.
ferra (Leucothyris) *Hsch.* 150.
ferrugata (Actin. pellenca) *Jord.* 372.
fictitia (Ager. ferox) *Fruhst.* 541.
fida (Euptychia) *Weym.* 196.
fidicula (Adelpha boeotia) *Fruhst.* 517.
flammula (Perhybris pyrrha) *Röb.* 65.
flava (Catast. sisamius) *Röb.* 71.
flava (Eteona eupolis) *Weym.* 244.
flava (Eusel. authe) *Seitz* 631.
flavescens (Hesperoch. nera) *Röb.* 79.
flavifascia (Actin. equatoria) *Jord.* 371.
flavimacula (Phyciodes) *Röb.* 442.
flavina (Phyc. liriopoe) *Röb.* 435.
flavomaculata (Helic. alithea) *Seitz* 574.
flexibilis (Leucothyris) *Hsch.* 147.
florens (Cerat. lurida) *Hsch.* 133.
florentia (Ager. epinome) *Fruhst.* 543.
floridensis (Catops. argante) *Röb.* 87.
fraterna (Cerat. dionaea) *Hsch.* 132.
freyia (Callithea) *Röb.* 493.
frigga (Callith. adamsi) *Röb.* 491.
fruhstorferi (Perhybris pyrrha) *Röb.* 65.
fruhstorferi (Phyc. mediatris) *Röb.* 451.
frusina (Adelpha aethalia) *Fruhst.* 517.
fufia (Adelpha trimina) *Fruhst.* 516.
fufina (Adelpha cocala) *Fruhst.* 516.
fugela (Adelpha erotica) *Fruhst.* 519.
fulica (Adelpha boeotia) *Fruhst.* 517.
fulva (Caton. numilia) *Röb.* 480.
fumantis (Epithomia agrippina) *Hsch.* 140.
fumida (Potamanax violaceus) *Draudt.* 900.
fumosa (Ager. amphinome) *Fruhst.* 544.
funalis (Adelpha iphiclea) *Fruhst.* 523.
fundania (Ager. februa) *Fruhst.* 540.
fundania (Adelpha ixia) *Fruhst.* 525.
fusus (Barbic. melanops) *Seitz* 663.

gavina (Adelpha) *Fruhst.* 529.
gellia (Adelpha iphiclea) *Fruhst.* 523.
geminata (Thecla) *Draudt* 796.
gemma (Tharops hebrus) *Seitz* 713.
georgias (Adelpha phylaea) *Fruhst.* 520.
gerosa (Pieris phaloë) *Röb.* 1016.
gervasia (Ager. iphithime) *Fruhst.* 543.
gisela (Phyc. aequatorialis) *Röb.* 442.
glauca (Eupt. glaucina) *Weym.* 216.
glaucolena (Pierella lena) *Weym.* 177.
glaukias (Opsiph. batea) *Fruhst.* 294.
godmani (Adelpha celerio) *Fruhst.* 530.
godmani (Tayg. xenana) *Weym.* 190.
godmani (Vorates) *Draudt* 976.
gortyna (Adelpha iphiclea) *Fruhst.* 523.
gortynoides (Lymanop. obsoleta) *Weym.* 218.
gracilis (Eupt. libye) *Weym.* 212.
grammica (Actin. equatoria) *Jord.* 371.
gration (Eusel. euriteus) *Seitz* 624.
griseldis (Euptychia) *Weym.* 211.
griseobasalis (Phyc. myia) *Röb.* 441.
griseola (Euptychia) *Weym.* 211.
griseola (Pedal. pheretias) *Weym.* 258.

guatemalena (Colias philodice) *Röb.* 91.
gudruna (Phyc. olivencia) *Röb.* 447.
gudula (Ager. februa) *Fruhst.* 539.
guenéei (Callicore) *Röb.* 502.

habanae (Eunica monima) *Seitz* 485.
haemera (Actin. neleus) *Jord.* 361.
haenschi (Tayg. celea) *Weym.* 188.
hahneli (Actin. equatoria) *Jord.* 370.
heliconina (Phyc. murena) *Röb.* 447.
helios (Euptychia) *Weym.* 218.
helle (Catast. hegemon) *Röb.* 1017.
heracles (Morpho hecuba) *Fruhst.* 338.
heredia (Adelpha plesaura) *Fruhst.* 521.
herennia (Adelpha cytherea) *Fruhst.* 522.
hieroglyphica (Thespieus) *Draudt* 953.
hierone (Ager. februa) *Fruhst.* 540.
hieronica (Adelpha naxia) *Fruhst.* 525.
hilaria (Adelpha euboea) *Fruhst.* 518.
hilarina (Phyc. aeraeina) *Röb.* 448.
hippolochus (Caligo idomeneus) *Fruhst.* 324.
hollandi (Appias drusilla) *Röb.* 68.
holochroa (Actin. antea) *Jord.* 369.
honorina (Ager. glauconome) *Fruhst.* 546.
hopfferi (Catasticta) *Röb.* 71.
hopfferi (Phyciodes) *Röb.* 449.
huamba (Pteronymia) *Hsch.* 153.
hübneri (Chlor. laura) *Röb.* 547.
hyagnis (Lyman. ferruginosa) *Weym.* 247.
hyperborea (Vanessa antiopa) *Seitz* 457.
hyperion (Siseme pseudopallas) *Seitz* 698.
hypochlora (Metrocles) *Draudt* 969.
hypoxantha (Dapton. lycimnia) *Röb.* 76.

icilia (Ager. februa) *Fruhst.* 540.
idiographa (Actin. thalia) *Jord.* 369.
ilia (Peris. alicia) *Röb.* 499.
ilmatar (Prep. antimache) *Fruhst.* 555.
imitans (Eueides imitans) *Seitz* 398.
immaculata (Tatoch. stigmadice) *Röb.* 57.
implicata (Adelpha phliassa) *Fruhst.* 521.
inachia (Adelpha olynthia) *Fruhst.* 514.
inea (Dalla) *Draudt* 952.
incarnum (Thisbe lycorias) *Seitz* 715.
incertina (Catasticta) *Röb.* 1021.
inconspicua (Itylos) *Draudt* 822.
indefecta (Adelpha iphiclea) *Fruhst.* 523.
ineptus (Pythonides) *Draudt* 888.
ines (Dismorphia) *Röb.* 101.
infuseata (Callithom. schulzi) *Hsch.* 128.
ingens (Eun. margarita) *Seitz* 486.
innuba (Catast. pieris) *Röb.* 70.
insularis (Adelpha cytherea) *Fruhst.* 521.
insularis (Ager. feronia) *Fruhst.* 542.
insularis (Morpho peleides) *Fruhst.* 345.
insulsus (Pythonides) *Draudt* 887.
intermedia (Actin. demonica) *Jord.* 368.
intermedia (Leodonta dysoni) *Röb.* 69.
intermedia (Phyc. polina) *Röb.* 446.
interrupta (Eupt. lineata) *Weym.* 211.
iphimedes (Anaea vicinia) *Röb.* 586.
iphimedia (Adelpha iphiclea) *Fruhst.* 523.
irion (Stalactis phlegia) *Seitz* 718.
irisa (Adelpha sichaeus) *Fruhst.* 517.
ithomiella (Dism. fortunata) *Röb.* 104.

- jacinthia* (Phyc. *lansdorfi*) *Röb.* 448.
jarias (Adelpha *felderi*) *Fruhst.* 527.
joergenseni (Tatochila) *Röb.* 1015.
johanna (Faunula) *Weym.* 235.
jordani (Adelpha) *Fruhst.* 518.
jordani (Colaciticus *johnstoni*) *Seitz* 672.
josephina (Pyrrhopyge) *Draudt* 839.
julia (Euptychia) *Weym.* 215.
julitta (Ager. *glauconome*) *Fruhst.* 510.
jurua (Dismorphia) *Röb.* 1026.
juruana (Eryphanis *aeacus*) *Fruhst.* 313.

laeta (Phyc. *gaudialis*) *Röb.* 452.
lamprobenis (Catagr. *mena*) *Röb.* 1031.
lanilla (Adelpha *cytherea*) *Fruhst.* 521.
latellava (Hirsut. *pseudonyma*) *Hsch.* 121.
latifasciata (Epiph. *epicaste*) *Röb.* 418.
laticior (Actin. *guatemalena*) *Jord.* 370.
latiplaga (Catasticta) *Röb.* 1021.
latmiceus (Helicopsis *endymion*) *Seitz* 634.
laureatus (Xeniades) *Draudt* 951.
lauta (Dismeritis) *Hsch.* 163.
lauta (Thecla *ortygus*) *Draudt* 768.
leonina (Adelpha *lerna*) *Fruhst.* 525.
lerda (Leucothyris *ida*) *Hsch.* 145.
leucacantha (Adelpha *zina*) *Fruhst.* 514.
leucas (Adelpha *ixia*) *Fruhst.* 525.
leucates (Adelpha *iphicla*) *Fruhst.* 523.
leucidiodes (Nymphid. *menalcus*) *Seitz* 714.
leucocoma (Adelpha *melona*) *Fruhst.* 529.
leucodesma (Siseme *aristoteles*) *Seitz* 698.
leucopetra (Adelpha *leucopetra*) *Fruhst.* 517.
leucophlegmoides (Lymnas *aegates*) *Seitz* 661.
leutha (Adelpha *saundersi*) *Fruhst.* 513.
levana (Phyciodes) *Röb.* 440.
levicula (Adelpha *olynthia*) *Fruhst.* 514.
limbalis (Pseudopieris) *Röb.* 1024.
limbata (Actin. *equatoria*) *Jord.* 371.
limbata (Phyc. *actinote*) *Röb.* 448.
lina (Anaea *oenomais*) *Röb.* 586.
lincoides (Thecla *torguata*) *Draudt* 757.
lirina (Phyc. *liriope*) *Röb.* 435.
lisa (Lymanopoda) *Weym.* 249.
lobusa (Episc. *praestigiosa*) *Hsch.* 152.
lodis (Actin. *equatoria*) *Jord.* 372.
loki (Agrias *croesus*) *Fassl* 1038.
lorzina (Adelpha *cocala*) *Fruhst.* 516.
lucipara (Pedaliodes *pausia*) *Weym.* 258.
lugubris (Phyc. *perilla*) *Röb.* 450.
lugubris (Tithor. *tamasea*) *Hsch.* 119.
lyde (Prep. *antimache*) *Fruhst.* 555.
lynceus (Anaea *lyceus*) *Röb.* 589.

macrophthalmus (Morpho *patroclus*) *Fruhst.* 355.
madeira (Melinaea) *Hsch.* 123.
madeira (Myse. *capenas*) *Röb.* 483.
maenas (Ceratinia) *Hsch.* 130.
magdalena (Anaea) *Röb.* 590.
magna (Pereute *telthusa*) *Röb.* 67.
magnarea (Methon. *cecilia*) *Seitz* 633.
magos (Prep. *meander*) *Fruhst.* 557.
mainas (Adelpha *lara*) *Fruhst.* 512.
maira (Adelpha *justina*) *Fruhst.* 514.
mamaea (Adelpha *euboea*) *Fruhst.* 518.
manga (Melinaea) *Hsch.* 123.

manilia (Adelpha *thoasa*) *Fruhst.* 522.
maravalica (Nymphidium) *Seitz* 711.
marcapita (Catasticta) *Röb.* 74.
marcia (Adelpha *cytherea*) *Fruhst.* 521.
mardonius (Dynastor *darius*) *Fruhst.* 289.
margarita (Thecla) *Draudt* 793.
margaritacea (Thecla) *Draudt* 755.
marginata (Barbicornis) *Seitz* 664.
marianna (Perisama) *Röb.* 1034.
marianna (Phyc. *hyperia*) *Röb.* 452.
marica (Euptychia) *Weym.* 219.
marmarice (Ager. *guatemalena*) *Fruhst.* 512.
masinissa (Pieris *phaloë*) *Röb.* 1016.
massilides (Adelph. *iphicla*) *Fruhst.* 523.
mechanitina (Dismorphia) *Röb.* 1026.
megabates (Prep. *meander*) *Fruhst.* 556.
megacles (Prep. *meander*) *Fruhst.* 556.
megala (Ager. *glauconome*) *Fruhst.* 510.
megala (Siseme *alectryo*) *Seitz* 698.
mejicana (Phyc. *erantes*) *Röb.* 446.
melania (Eupt. *lineata*) *Weym.* 212.
melanoides (Dism. *leuconoë*) *Röb.* 104.
melas (Prep. *meander*) *Fruhst.* 557.
melia (Lyman. *nivea*) *Weym.* 245.
melitaea (Artines) *Draudt* 987.
menalcidas (Nymphid. *agle*) *Seitz* 712.
meridionalis (Dism. *amphione*) *Röb.* 102.
meridionalis (Thecla *pholeus*) *Draudt* 785.
meridionalis (Adelpha *melona*) *Fruhst.* 529.
meridionalis (Dynamine) *Röb.* 508.
meta (Euptychia) *Weym.* 195.
metabus (Prep. *camilla*) *Fruhst.* 556.
metana (Adelpha *aethalia*) *Fruhst.* 517.
mexicana (Rhabdoides *cellus*) *Draudt* 871.
miera (Helic. *clysonimus*) *Seitz* 395.
microdryope (Phyc. *neria*) *Röb.* 448.
mimula (Thecla) *Draudt* 793.
minima (Mesosemia *phelina*) *Seitz* 640.
minima (Phyciodes) *Röb.* 445.
moderata (Eupt. *nortia*) *Weym.* 214.
monachella (Pseudosteroma) *Weym.* 214.
moneta (Euptychia) *Weym.* 200.
montana (Anaea *memphis*) *Röb.* 589.
morena (Phyciodes) *Röb.* 443.
moronina (Perisama) *Röb.* 498.
morsina (Ager. *amphinome*) *Fruhst.* 544.
motacilla (Dynamine) *Röb.* 1036.
mucia (Adelpha *naxia*) *Fruhst.* 525.
mülleri (Thanaos) *Draudt* 917.
mutator (Eusel. *crotopus*) *Seitz* 628.
myrlea (Adelpha *serpa*) *Fruhst.* 532.
mysotis (Ceratinia) *Hsch.* 133.
mythra (Euptychia) *Weym.* 205.

nais (Ager. *chloë*) *Fruhst.* 541.
naryce (Adelpha *seriphia*) *Fruhst.* 531.
nava (Adelpha *delphicola*) *Fruhst.* 519.
nebulosa (Hydraenomia) *Draudt* 1048.
negrina (Adelpha *alala*) *Fruhst.* 515.
negrina (Peris. *lebasii*) *Röb.* 498.
negrina (Riodina *lysippus*) *Seitz* 658.
nephele (Helic. *euphone*) *Seitz* 594.
netesca (Thecla) *Draudt* 795.
nicandrus (Opsiphanes *sallei*) *Fruhst.* 301.
nigrapex (Lymnas *aegates*) *Seitz* 660.
nigreseens (Morpho *catenarius*) *Fruhst.* 340.

- nigretta* (*Lymnas cephise*) *Seitz* 660.
nigrippus (*Danaïs archippus*) *Hsch.* 113.
nikita (*Epithomia* *alpo*) *Hsch.* 110.
ninus (*Agrias claudia*) *Fussl* 1037.
niobe (*Catasticta*) *Röb.* 72.
nobilis (*Euptychia nortia*) *Weym.* 211.
nobilita (*Ager. feronia*) *Fruhst.* 512.
noeticocelum (*Stalactis phlegia*) *Seitz* 719.
nomia (*Ager. chloë*) *Fruhst.* 511.
nymphagoga (*Phulia*) *Röb.* 97.
nysiella (*Phulia*) *Röb.* 98.

obidona (*Ager. chloë*) *Fruhst.* 511.
obnubila (*Ager. arinome*) *Fruhst.* 511.
obscurata (*Hirsutis tarricina*) *Hsch.* 120.
obscurior (*Catasticta hopfferi*) *Röb.* 71.
obumbrata (*Ager. feronia*) *Fruhst.* 512.
ocellata (*Phyc. letitia*) *Röb.* 448.
ochracea (*Leptophobia elone*) *Röb.* 62.
ochrolimbata (*Dalla*) *Draudt* 921.
ochrotaenia (*Siseme aristoteles*) *Seitz* 698.
ochrotaenia (*Actin. antea*) *Jord.* 369.
oenotria (*Daedalus dinias*) *Weym.* 286.
olga (*Eueides isabella*) *Neustett.* 597.
olga (*Helic. isabella*) *Neustett.* 597.
olivencia (*Ancylur. aulestes*) *Seitz* 667.
olynthina (*Adelpha olynthia*) *Fruhst.* 514.
onoma (*Callol. hopfferi*) *Hsch.* 143.
ophellas (*Adelpha delphicola*) *Fruhst.* 519.
opheltes (*Adelpha boreas*) *Fruhst.* 513.
opima (*Eupt. ocnus*) *Weym.* 203.
ordinata (*Euptychia*) *Weym.* 197.
oresbios (*Opsiph. quiteria*) *Fruhst.* 300.
ornamenta (*Adelpha serpa*) *Fruhst.* 531.
ornata (*Anaea glycerium*) *Röb.* 583.
ornata (*Morpho menelaus*) *Fruhst.* 354.
orthotaenia (*Baeotis prima*) *Seitz* 681.
ortygia (*Ager. arete*) *Fruhst.* 515.
ossuna (*Ithomia*) *Hsch.* 142.
ovifera (*Panara thisbe*) *Seitz* 657.
ozora (*Agrias amydon*) *Fruhst.* 574.

pacis (*Itylus*) *Draudt* 821.
pacis (*Teriocolias atinas*) *Röb.* 90.
pacta (*Eupt. yphthima*) *Weym.* 209.
pallantias (*Prep. laertes*) *Fruhst.* 560.
pallens (*Catasticta*) *Röb.* 1021.
pallescens (*Actin. parapheles*) *Jord.* 373.
pallida (*Dism. avonia*) *Röb.* 101.
pallida (*Mathania aureomaculata*) *Röb.* 78.
pallida (*Pieris mandela*) *Röb.* 61.
palliolata (*Ager. arethusa*) *Fruhst.* 515.
pamenes (*Prep. demophon*) *Fruhst.* 551.
panamensis (*Thecla*) *Draudt* 801.
pandora (*Perhybris pyrrha*) *Röb.* 61.
paradoxa (*Catasticta*) *Röb.* 73.
pardalina (*Phyciodes*) *Röb.* 447.
parthenie (*Euptychia*) *Weym.* 216.
parva (*Chlor. cherubina*) *Röb.* 546.
paula (*Dapton. lycimnia*) *Röb.* 75.
paula (*Pereute autodyca*) *Röb.* 66.
paula (*Terias phiale*) *Röb.* 85.
pavo (*Artines*) *Draudt* 987.

pavonides (*Caligo memnon*) *Fruhst.* 322.
pelias (*Morpho anaxibia*) *Fruhst.* 352.
pellenea (*Phyciodes*) *Röb.* 450.
pellucida (*Dismorphia*) *Röb.* 1026.
peonida (*Thecla*) *Draudt* 751.
peregrina (*Appias*) *Röb.* 105.
perfulva (*Actin. equatoria*) *Jord.* 370.
perga (*Adelpha falcipennis*) *Fruhst.* 527.
periphetes (*Opsiph. cassina*) *Fruhst.* 303.
permagna (*Adelpha erotica*) *Fruhst.* 519.
peruana (*Dism. lysis*) *Röb.* 101.
peruana (*Hylephila*) *Draudt* 929.
peruana (*Phyc. teletusa*) *Röb.* 438.
peruviana (*Dynamine gisella*) *Röb.* 508.
peruvianus (*Pereute charops*) *Röb.* 66.
phacana (*Thecla*) *Draudt* 790.
pharaë (*Adelpha iphiclea*) *Fruhst.* 523.
pharnaces (*Eupt. phares*) *Weym.* 208.
phedriades (*Caligo illioneus*) *Fruhst.* 319.
phera (*Adelpha iphiclea*) *Fruhst.* 523.
pherenice (*Agrias bewitsonius*) *Fruhst.* 577.
phila (*Catasticta*) *Röb.* 1021.
philomene (*Catast. chelidonis*) *Röb.* 71.
philotina (*Catasticta*) *Röb.* 1021.
phintias (*Adelpha celerio*) *Fruhst.* 530.
phokilides (*Caligo oberthuri*) *Fruhst.* 327.
phorkys (*Caligo teucer*) *Fruhst.* 317.
phylacides (*Adelpha phylaca*) *Fruhst.* 520.
physcoa (*Heliconius narcaea*) *Seitz* 378.
picus (*Eunogyra satyrus*) *Seitz* 650.
pieris (*Carystus*) *Draudt* 979.
placentia (*Opsiphanes cassiope*) *Fruhst.* 310.
placidus (*Euselasia*) *Seitz* 626.
plagiata (*Phyc. nauplia*) *Röb.* 446.
plana (*Cosmosatyrus quies*) *Weym.* 234.
plausibilis (*Agrias claudia*) *Fruhst.* 569.
plessemi (*Catasticta colla*) *Röb.* 71.
plessemi (*Teriocolias atinas*) *Röb.* 90.
plumbilimbata (*Callic. gabaza*) *Röb.* 1036.
poecila (*Cobalus*) *Draudt* 960.
pollina (*Adelpha aethalia*) *Fruhst.* 518.
polyidos (*Morpho hecuba*) *Fruhst.* 339.
polymnia (*Phyc. olivencia*) *Röb.* 447.
polyplaga (*Barbic. basilis*) *Seitz* 664.
polyxena (*Anaea polyxo*) *Röb.* 1042.
postpuncta (*Lerema*) *Draudt* 968.
praecaria (*Adelpha alala*) *Fruhst.* 515.
praemona (*Leucoth. sexmaculata*) *Hsch.* 146.
praenestina (*Prep. praeneste*) *Fruhst.* 565.
praenestina (*Morpho deidamia*) *Fruhst.* 355.
praetura (*Adelpha delphicola*) *Fruhst.* 519.
praevalida (*Adelpha justina*) *Fruhst.* 514.
pravitas (*Adelpha syma*) *Fruhst.* 522.
praxiodus (*Caligo illioneus*) *Fruhst.* 318.
privata (*Adelpha sichaeus*) *Fruhst.* 517.
privata (*Caligo eurilochus*) *Fruhst.* 323.
privata (*Dalla*) *Draudt* 923.
privata (*Prep. praeneste*) *Fruhst.* 565.
privigna (*Adelpha alala*) *Fruhst.* 515.
proavia (*Eusel. arbas*) *Seitz* 627.
proba (*Eupt. erigone*) *Weym.* 203.
probata (*Eupt. erigone*) *Weym.* 203.
procax (*Phemiades*) *Draudt* 956.
proxima (*Dism. pinthaeus*) *Röb.* 1026.
psacon (*Prep. dexamenus*) *Fruhst.* 563.
psammathe (*Eusel. crotopus*) *Seitz* 628.

- pseudarete* (*Adelpha arete*) *Fruhst.* 529.
pseudomessana (*Adelpha*) *Fruhst.* 526.
punctata (*Euptychia*) *Weym.* 205.
pupilla (*Thecla*) *Draudt* 801.
pura (*Thecla*) *Draudt* 764.
purissima (*Thecla*) *Draudt* 788.
putli (*Mesosemia*) *Seitz* 638.
pyrrhoma (*Tatochila*) *Röb.* 56.
- quadrona* (*Hypoleria oncidia*) *Hsch.* 160.
quassa (*Thecla*) *Draudt* 784.
quindiensis (*Thecla loxurina*) *Draudt* 758.
- radiata* (*Adelpha serpa*) *Fruhst.* 531.
radina (*Leucoth. cyrene*) *Hsch.* 148.
ramona (*Leucoth. amazona*) *Hsch.* 147.
rana (*Lymanop. ferruginosa*) *Weym.* 247.
randolis (*Aprotopos melantho*) *Hsch.* 127.
reducta (*Actin. ozomene*) *Jord.* 362.
reducta (*Chlor. cyane*) *Röb.* 516.
reducta (*Pereute leucodrosime*) *Röb.* 66.
referrens (*Lycorea halia*) *Hsch.* 116.
reinoldsi (*Amphidecta*) *Weym.* 192.
remissa (*Eupt. renata*) *Weym.* 204.
renidens (*Thecla*) *Draudt* 793.
restricta (*Adelph. zina*) *Fruhst.* 514.
rhenea (*Prep. omphale*) *Fruhst.* 562.
rhomboidea (*Daedalma dinias*) *Weym.* 266.
riola (*Adelpha cocala*) *Fruhst.* 516.
rosa (*Pereute autodyca*) *Röb.* 66.
rosandra (*Ageronia*) *Fruhst.* 543.
rosea (*Meganostoma eurydice*) *Röb.* 94.
rothschildi (*Adelpha*) *Fruhst.* 528.
rothschildi (*Mimocastnia*) *Seitz* 652.
rubrigutta (*Phyc. fasciata*) *Röb.* 452.
rufilia (*Adelpha*) *Fruhst.* 527.
rufocincta (*Eupt. picea*) *Weym.* 196.
- sabatia* (*Ager. februa*) *Fruhst.* 540.
sagittata (*Tatochila demodice*) *Röb.* 57.
sajama (*Cosmosatyrus chiliensis*) *Weym.* 233.
salacides (*Thecla*) *Draudt* 754.
samius (*Emesis*) *Seitz* 727.
sapho (*Hymenitis*) *Hsch.* 164.
sarana (*Adelpha phylaea*) *Fruhst.* 520.
sarilis (*Leucothyris*) *Hsch.* 150.
satura (*Lymanop. leaena*) *Weym.* 249.
saturata (*Colias flaveola*) *Röb.* 94.
saturata (*Phyc. sestia*) *Röb.* 446.
saurites (*Ager. arethusa*) *Fruhst.* 544.
seaeva (*Catasticta*) *Röb.* 73.
seurra (*Catasticta*) *Röb.* 1021.
seyrus (*Prep. licomedes*) *Fruhst.* 558.
sedusa (*Hypoleria orolina*) *Hsch.* 160.
segesta (*Euptychia*) *Weym.* 214.
seirocastnia (*Dalla*) *Draudt* 923.
seitzi (*Carystus*) *Draudt* 980.
seitzi (*Helic. rubellius*) *Neustett.* 594.
seitzi (*Phyciodes*) *Röb.* 453.
selene (*Phyciodes*) *Röb.* 445.
sellasia (*Ager. februa*) *Fruhst.* 510.
semibrunnea (*Tayg. ypthima*) *Weym.* 186.
semilutea (*Actin. equatoria*) *Jord.* 370.
- semipartita* (*Lasiophila orbifera*) *Weym.* 266.
semivitrea (*Mesos. marsena*) *Seitz* 640.
semonis (*Pteron. starkei*) *Hsch.* 155.
senta (*Thecla*) *Draudt* 783.
serdolis (*Leucothyris*) *Hsch.* 148.
serenita (*Adelpha aricia*) *Fruhst.* 516.
serita (*Adelpha attica*) *Fruhst.* 529.
seropina (*Callicore*) *Röb.* 1035.
serpentina (*Adelpha zea*) *Fruhst.* 532.
servius (*Tayg. rectifascia*) *Weym.* 187.
sexpunctata (*Lymanas pixe*) *Seitz* 659.
signata (*Dirc. epidero*) *Hsch.* 139.
sikyon (*Opsiph. tamarindi*) *Fruhst.* 297.
silia (*Adelpha thoasa*) *Fruhst.* 522.
simasea (*Thecla*) *Draudt* 794.
simplicia (*Amphidecta pignerator*) *Weym.* 192.
sirona (*Adelpha plesaure*) *Fruhst.* 521.
sisemina (*Theope eurygonina*) *Seitz* 726.
sodalina (*Ager. februa*) *Fruhst.* 540.
sonon (*Prep. meander*) *Fruhst.* 556.
sospes (*Thecla*) *Draudt* 778.
speciosa (*Catagr. excelsior*) *Röb.* 495.
speculum (*Mesene epaphus*) *Seitz* 676.
sphaacteria (*Prep. garleppiana*) *Fruhst.* 565.
spina (*Pedal. pactyes*) *Weym.* 259.
standfussi (*Colias pelidne*) *Röb.* 91.
stantis (*Pteron. thabena*) *Hsch.* 154.
statia (*Cosmosatyrus*) *Weym.* 234.
staudingeri (*Callith. buckeyi*) *Röb.* 491.
stenotaenia (*Callic. gabaza*) *Röb.* 1035.
stenotaenia (*Phyc. cithona*) *Röb.* 440.
sterope (*Ager. arinome*) *Fruhst.* 544.
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<i>epitus</i> Aides 951		<i>eridamas</i> Reak. Pap. 36		<i>erythroicum</i> = <i>erythraicum</i>	
<i>epitus</i> Cr. Aric. 720	111 h	<i>erigone</i> Bllr. Eupt. 203	17 d	<i>erythromelas</i> Sepp Metach. 703	137 d
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<i>epona</i> Fruhst. Ad. 527		<i>erinnys</i> Stich. Mes. 638	121 e	<i>erythrostickia</i> G. & S. Pyrrh. 839	162 e
<i>epona</i> Hew. Ithom. 111	37 d	<i>Erinnys</i> Schrk. 1051		<i>erythrostickia</i> Plötz Meg. 974	187 k
<i>epone</i> Godt. Anatole 716		<i>erinome</i> Fldr. Actin. 360	81 a	<i>erythrus</i> Mén. Lymn. 660	131 e
<i>eponina</i> Stgr. Ad. 512		<i>erionis</i> Hew. Bung. 872		<i>erythrus</i> R. & J. Pap. 16	3 d
<i>epopea</i> Hew. Thecla 790	157 b	<i>erionis</i> Hew. Epiph. 479	98 a	<i>erythrus</i> Cr. Bung. 872	169 d
<i>epopeoides</i> Schs. Thecla 790		<i>eriphyle</i> Edw. Col. 93	27 e	<i>eryx</i> Cr. Theclops. 811	145 g
Eprius G. & S. 985		<i>eriphyle</i> Colias 1023		<i>eryxo</i> Snds. Anc. 667	129 g
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<i>equatoria</i> Actin. 372		<i>erix</i> Cr. Thecla 776	155 b	<i>esra</i> F. Precis 461	
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List of Errata of Volume 5.

- P. 3 line 19 from above, after *Glaucopis* add: (older name for many Syntomidae).
- P. 4 line 26 from below, for *leucodrosyme* place: *leucodrosime*.
- P. 6 line 28 from below, for *Halesidota* read: *Halisidota*.
- P. 26 line 21 from below, after **turnus** place: *L*.
- P. 42 line 24 from above, after **P. orthosilaus** Weym., for (16 c) read: (16 a).
- P. 46 line 10 from below, after *Doubl.* insert: (17 c).
- P. 55 line 14 from below, for (18 a) place: (18 a, 194 a).
- P. 55 line 3 from below, after *theodice*, for *Bl.* place: *Blch.*
- P. 56 line 24 from above, for Tropeolum read: Tropaeolum.
- P. 57 line 16 from above, after **stigmadice** Stgr. insert: (194 a).
- P. 57 lines 7 and 6 from below, for *evonina* read: *evonima*.
- P. 58 line 23 from below, after **sublineata** Schaus cancel: (19 a).
- P. 62 line 28 from below, for *D.-H.* read: *Dbl. & Hew.*
- P. 65 line 11 from below, for **autodyca** read: **antodyca**.
- P. 66 line 11 from above, after **phalera** cancel: (21 b).
- P. 71 line 8 from above, after *philomene* Stgr. i. l. insert: (194 c).
- P. 71 line 17 from above, for **teutanis** read: **teutamis**.
- P. 71 line 11 from below, for **troezene** place: **affinis**.
- P. 74 line 21 from below, after *susiana* Hpffr. insert: (194 c).
- P. 82 line 14 from below, for *Ménétrie's* read: *Ménétries*.
- P. 84 line 17 from above and lines 15 and 18 from below, for **eleathea** read: **elathea**.
- P. 86 line 6 from above, for (25 c) place: (25 b).
- P. 86 line 17 from above, for (25 b) place: (25 c).
- P. 88 line 11 from below, for (26 g) place: (24 g).
- P. 92 line 11 from below, for (27 d) place: (27 e).
- P. 95 line 14 from below, cancel the reference (28 a).
- P. 104 line 13 from below, for *Heterosais* — read: *Heteroscada* —.
- P. 107 column a, line 9 from below, for **brevos** place: **brephos**.
- P. 119 line 15 from above, for **bomplandi** place: **bonplandi**.
- P. 121 line 26 from above, before *hippothous* insert: *Heliconius*.
- P. 126 line 19 from below, for forewing read: hindwing.
- P. 144 line 3 from below, after **anchiala** Hew. insert: (38 c).
- P. 192 line 17 from below, for **reinoldsi** place: **reynoldsi**.
- P. 201 line 30 from above, for (47 e) read: (47 c).
- P. 208 line 21 from below, for **spartaesus** read: **spartacus**.
- P. 219 line 24 from above, for **sericella** read: **sericeella**.
- P. 221 lines 1 and 2 from above, for **agaya** read: **ayaya**.
- P. 231 line 4 from above, for *Thlg.* read: *Thbg.*
- P. 234 line 6 from above, for **milesi** read: **nilesi**.
- P. 242 line 4 from above, for (51 f) read: (51 g).
- P. 242 line 8 from below, after **tritonina** Edw. insert: (52 b).
- P. 246 line 7 from below, for (51 f) read: (51 g).
- P. 249 lines 16 and 18 from above, for (52 c) read: (52 e).
- P. 253 line 16 from below, for (53 c) read: (53 e).
- P. 264 line 20 from below, for (56 c) read: (56 e).
- P. 264 line 10 from below, for (55 f) read: (56 f).
- P. 268 line 21 from below, for (47 d) read: (57 d).
- P. 268 line 18 from below, for (47 e) read: (57 c).

- P. 270 line 12 from below, after **cothon** *Salv.* insert: (58 c).
P. 293 line 20 from above, for 65 b read: 63 b.
P. 302 line 26 from above, for 61 a ♂; ♀ 61 a read: 61 c ♂; ♀ 61 c.
P. 312 line 21 from above, after *Westw.* insert: (64 b).
P. 328 line 22 from below, after *Fldr.* insert: (62 d).
P. 343 line 8 from below, after *peleides* insert: *Koll.*
P. 350 line 5 from above, after **mellinia** *Fruhst.* insert: (66 b).
P. 355 line 8 from below, for ADAM read: ADAMS.
P. 363 line 23 from above, after **stratonice** insert: *Latr.*
P. 363 line 1 from below, for (81 d, 82 b) read: (82 b).
P. 368 line 1 from below, for (83 c) read: (83 d).
P. 369 line 3 from below, for (82 g) read: (82 f, g).
P. 374 line 27 from below, after **surima** insert: *Schs.*
P. 375 line 1 from above, before Subfamily insert: „2.“
P. 375 line 11 from below, for *E. viculata* read: *H. viculata*.
P. 379 line 17 from below, after **diffusa** *Btlr.* insert: (= *divisius* *Kaye*).
P. 380 line 9 from below, after **schantzi** *Riff.* insert: (72 d).
P. 382 line 4 from above, after **pretiosus** *Weym.* cancel: (32 c).
P. 384 line 24 from below, for *flavifascia* read: **flavifascia**.
P. 384 line 8 from below, for (74 b as *fassli*) read: (74 f as *fassli*).
P. 385 line 19 from below, after **nepelti** *Riff.* insert: (110 A e).
P. 386 line 8 from above, for *hippolyta* read: *hippolyte*.
P. 386 line 27 from below, for *timareta* read: **timareta**.
P. 388 line 21 from above, after **cassandra** *Fldr.* cancel: (76 e).
P. 388 line 6 from below, after **aoede** *Hbn.* cancel: (76 f).
P. 389 line 8 from above, after **faleria** *Fruhst.* insert: (76 e as *aoede*).
P. 389 line 11 from above, for **vola** read: **vala**.
P. 392 line 10 from above, for (77 a) read: (78 a).
P. 397 line 25 from above, for **lybyoides** read: **lybioides**.
P. 398 line 8 from above, to **zorcaon** add: (80 g).
P. 400 line 6 from below, for **telesiphe** *Hew.* read: **tithraustes** *Salv.*
P. 400 line 4 from below, for **tithraustes** *Salv.* read: **telesiphe** *Hew.*
P. 402 line 4 from above, for (84 e) read: (84 f).
P. 402 line 15 from above, for 2. Subfamily read: 3. Subfamily.
P. 403 line 1 from above, for 3. Subfamily read: 4. Subfamily.
P. 404 line 19 from above, for **poaria** read: **poasina**.
P. 423 line 19 from below, after **alaskensis** *Holl.* cancel: (87 e).
P. 423 lines 13 and 4 from below, for **freya** read: **freiia**.
P. 424 line 19 from below, after **improba** *Btlr.* insert: (88 b).
P. 424 line 13 from below, for (87 c) read: (87 e).
P. 431 line 25 from above, for (88 b) read: (88 b, ♂ 103 b).
P. 431 line 15 from below, for (88 b) read: (88 b, ♀ 103 b).
P. 431 line 3 from below, for (88 b) read: (88 c).
P. 431 line 2 from below, for „oblique“ place: „are“.
P. 433 line 18 from above, after „desert-form“ add: According to COCKERELL an eastern form of *minuta*.
P. 433 line 21 from below, after **bollii** *Edw.* insert: (103 c).
P. 433 line 18 from below, after **definita** *Aar.* insert: (103 c).
P. 433 line 1 from below, after *Phyciodes* add: „— *fulvia* *Edw.*, according to COCKERELL, forms the transition to *wrightii*“.
P. 434 line 27 from above, after **brucei** *Edw.* insert: (103 c).
P. 434 line 28 from above, after **maria** *Skinn.* insert: (103 b).
P. 434 line 30 from above, for *gilettei* place: **gilettei**.
P. 434 line 30 from above, after *Barn.* insert: (103 c).
P. 434 line 22 from below, after **neumoegeni** *Skinn.* insert: (103 c).
P. 443 line 22 from below, for **archesillea** place: **archesilea**.
P. 447 line 5 from above, after **gudruna** *form. nov.* insert: (92 b).
P. 448 line 22 from above, for **philyra** read: **phillyra**.
P. 448 line 1 from below, to „very“ add: prominent.
P. 449 line 25 from above, for *bycia* read: *byzia*.
P. 456 lines 21 and 25 from above, for *agricola* read: *agnicula*.

- P. 457 line 18 from below, for **cyonomelas** read: **cyanomelas**.
P. 459 line 22 from above, for **fulva** read: **fulvia**.
P. 460 line 18 from below, after **lindigii** *Fldr.*, for (94 e) read: (103 d).
P. 466 line 4 from above, for (pl. 143) read: (143 d).
P. 466 line 8 from above, after **caecilia**, for *Cr.* read: *Fldr.*
P. 468 line 27 from below, after **merops**, for *Bsd.* read: *Blch.*
P. 468 line 17 from below, after **harmonia**, for *Dbl. & Hew.* read: *Klug.*
P. 469 line 21 from below, for (96 d) read: (96 e).
P. 472 last line from below was, by mistake, not filled out, but is otherwise correct.
P. 474 line 24 from above, after **ophni** *Btlr.* for (95 d) read: (95 d, e).
P. 476 line 6 from below, after **pseudoariadne** *Fruhst.* insert: (97 e).
P. 478 line 11 from below, for *Fassli* read: *Fassl.*
P. 479 lines 3 and 4 from above, for *apicaste* read: *epicaste*.
P. 484 lines 22 and 19 from below, for *coerulea* read: **coerula**.
P. 486 line 4 from above, for (100 A d) read: (100 A c).
P. 487 line 6 from above, after „similar“ insert: Northern parts of South America.
P. 494 line 24 from below, for **hystaptes** read: **hystaspes**.
P. 495 line 20 from above, for (101 B g) read: (101 B g, h).
P. 495 line 7 from below, for (103 A a) read: (103 a).
P. 496 line 3 from above, for *hydainis* read: *hydarnis*.
P. 496 line 3 from above, after **hydarnis** *Godt.* insert: (102 b a).
P. 499 line 14 from below, for **compaspe** *Hew.* (103 A a) read: **campaspe** *Hew.* (103 a).
P. 505 line 12 from above, after **amazonica** *spec. nov.* cancel: (101 A a).
P. 506 line 15 from below, for (100 A a) read: (100 A e).
P. 509 line 4 from above, for (103 A a) read: (103 a).
P. 512 line 18 from below, after *Godm. & Salv.* insert: (109 a).
P. 513 line 2 from above, for **fumida** read: **tumida**.
P. 513 line 24 from below, after **ximena** *Fldr.* insert: (109 a).
P. 514 line 26 from above, after **justina** *Fldr.* insert: (109 a).
P. 514 line 17 from below, for Villavicencia read: Villavicencio.
P. 516 line 19 from below, for (106 b as *riola*) read: (106 c as *riola*).
P. 523 line 18 from above, after **iphicla** *L.*, for (107 a) read: (107 e).
P. 523 line 26 from above, after **indefecta** *subsp. nov.*, for (107 c) read: (107 e).
P. 524 line 17 from above, for **lativitta** read: **lativittata**.
P. 531 line 18 from below, for **paraëna** *Btlr.* read: **paraëna** *Bat.*
P. 535 line 14 from below, for abdominal margin read: abdominal end.
P. 536 line 14 from above, for unnoticeable read: unmistakable.
P. 536 line 13 from below, for (103 c) read: (103 d).
P. 544 last line from below is to be cancelled.
P. 546 line 28 from above, for (110 b) read: (110 B b).
P. 546 line 22 from below, after **fluibunda** *Fruhst.* insert: (110 B c).
P. 549 line 5 from below, for (109 A a ♂, c ♀) read: (109 a ♂, c ♀).
P. 561 line 22 from above, add the marginal name: *laërtes*.
P. 562 line 27 from above, for **louisa** *Btlr.* read: **louisa** *Bsd.*
P. 576 line 7 from above, for forms of *Agrias* read: forms of *Agrias pericles*.
P. 578 line 16 from below, after **syene** *Hew.*, for (116 c) read: (116 b).
P. 579 line 6 from above, for **Hypna** *Hbr.* read: **Hypna** *Hbn.*
P. 585 line 21 from above, for Peru read: Pará.
P. 591 line 10 from below, for (120 D b) read: (120 D b, c).
P. 592 line 7 from below, for (116 b) read: (116 c).
P. 598 line 11 from above, for P. 451 read: P. 457.
P. 598 line 13 from above, for P. 451 read: P. 459.
P. 600 line 19 from above, for *ximene* read: *ximena*.
P. 624 line 3 from above, after **eucritus** insert: *Hew.* (121 a).
P. 624 line 1 from below, for Rio Jurna read: Rio Jurua.
P. 626 line 11 from above, after **eustachius** insert: *Hbst.* (121 c).
P. 626 line 19 from above, after **rhodon** *form. nov.* insert: (121 f).
P. 627 line 16 from above, after **tarinta** *Schaus*, for (110 A f) read: (122 a, b).
P. 628 line 21 from above, after **uria** *Hew.* insert: (121 h).
P. 628 line 27 from above, for (121 g) read: (121 f, g).
P. 628 line 28 from below, after **ater** *form. nov.* insert: (121 g).

- P. 628 line 27 from below, after **mutator** *form. nov.*, for Hindwing read: Forewing.
P. 629 line 1 from above, after behind this insert: often.
P. 631 line 5 from above, for (122 a) read: (122 e).
P. 638 line 5 from above, after **steli** insert: *Hew.*
P. 638 line 21 from above, after **attalus** *form. nov.* insert: (124 e).
P. 638 line 5 from below, after **atroculis** *Btlr.* insert: (124 f).
P. 639 line 3 from above, for **lapilla** read: **lapillus**.
P. 639 line 26 from below, for **magnesia** read: **magnessa**.
P. 640 line 18 from below, for *gaudiolus* read: *gaudiolum*.
P. 641 line 15 from above, for (121 f) read: (121 e).
P. 641 line 28 from below, for *menoetes* read: *menoetas*.
P. 642 line 5 from above, after **hypermegala** insert: *Stich.*
P. 643 line 19 from below, after **parishi** *Drc.* insert.: (126 a).
P. 646 line 24 from above, for (136 a) read: (126 a).
P. 647 line 24 from below, after **issia** insert: *Btlr.* (126 c).
P. 650 line 17 from above, for *bocchus* read: *bochus*.
P. 652 line 7 from above, for *tarinda* read: *tarrinta*.
P. 652 line 17 from above, for **helydrias** read: **thelydrias**.
P. 655 line 21 from below, for **jaeris** *Bsd.* read: **jaeris** *Bat.*
P. 656 line 18 from above, for **callixena** read: **calixena**.
P. 658 line 17 from below, after „cf. Additions“ insert: p. 727.
P. 662 line 14 from above, after „cf. Additions“ insert: p. 727.
P. 664 line 7 from below, for *zeonia* read: *Zeonia*.
P. 665 line 7 from below, for *oldros* read: *oluros*.
P. 666 line 2 from above, after **naevianus** *Stich.* insert: (130 e).
P. 669 line 18 from below, for **whyteliana** read: **whitelyana**.
P. 674 line 1 from above, for (142 g) read: (142 e).
P. 675 line 4 from below, after **hya** *Ww.*, and line 3 after *Bat.* insert: (110 A e).
P. 676 line 1 from above, for **paraene** read: **paraena**.
P. 676 line 8 from below, for t. 261 read: t. 26.
P. 677 line 16 from above and 2 from below, for *dukinfildia* read: **dukinfieldia**.
P. 677 line 20 from above, after **trucidata** *Btlr.* insert: (134 h).
P. 678 line 23 from above, after *satnius* insert: *Dalm.*
P. 679 line 14 from above, for (142 g) read: (135 d, 142 g).
P. 680 line 13 from above, for *Endule*-like read: *Eudule*-like.
P. 686 line 9 from below, for **micon** *Stich.* read: **micon** *Drc.*
P. 691 line 6 from above, for *quatrilotata* read: *quadrilotata*.
P. 694 line 15 from above, for **hegyas** read: **hegyas**.
P. 698 line 15 from below, for **pedias** *G.* read: **pedias** *Godm.*
P. 698 line 6 from below, after Additions insert: p. 728.
P. 700 lines 30 and 29 from below, for **druryi** read: **duryi**.
P. 702 line 14 from below, after **Metacharis** insert: *Btlr.*
P. 704 line 26 from above, for *Dolm.* read: *Dalm.*
P. 707 line 21 from above, for **glaucobithris** read: **glaucobrithis**.
P. 708 line 14 from below, for **micator** *Schs.* place: *alector*-♀.
P. 710 line 2 from above, for coiling read: angulation.
P. 712 line 2 from below, for **hesperium** read: **hesperinum**.
P. 712 line 2 from below, for **erythroicum** read: **erythraicum**.
P. 713 line 5 from above, for hindwing read: forewing.
P. 713 line 6 from below, after **menalcus** insert: *Stoll.*
P. 717 line 6 from below, for **glaucogonia** read: **glaucoconia**.
P. 718 line 4 from above, after **Pandemos** insert: *Hbn.*
P. 720 line 6 from above, for noticeable above read: hardly noticeable.
P. 722 lines 9 and 18 from above, for (142 h) read: (142 k).
P. 727 line 12 from above, for (110 D f) read: (110 A f).
P. 727 line 15 from below, for **Z. candace** read: **C. candace**.
P. 741 line 20 from above, for *latraillei* read: *latreillei*.
P. 745 line 7 from above, for (146 a, b) read: (146 a).
P. 754 line 18 from above, for (153 b) read: (153 d).
P. 773 line 3 from above, for *Habrodias* read: *Habrodais*.
P. 777 line 22 from below, for (154 d) read: (155 d).

- P. 778 line 22 from below, for **purpurea** read: **purpura**.
P. 784 line 20 from above, after **Schausi**-group add: (Genus **Ipidecla** Dyar).
P. 787 line 3 from above, for (160 d) read: (145 l).
P. 807 line 26 from below, for (160 d) read: (145 l).
P. 817 line 13 from above, for (144 f) read: (144 g).
P. 819 line 9 from below, after **bogotana** f. nov. insert: (144 k).
P. 835 line 24 from below, for *cerealis* read: *cerialis*.
P. 835 line 2 from below, for t. 72 read: t. 75 b.
P. 839 line 12 from above, after (araxes Holl.) insert: (171 g).
P. 839 line 4 from below, for hindwing read: forewing.
P. 841 line 1 from above, for **J. fleximargo** read: **P. fleximargo**.
P. 848 line 22 from above, (165 a) is to be placed after *phoronis*, not after *sothis* Mab.
P. 848 line 16 from below, cancel the reference: (166 c).
P. 853 line 8 from above, for rautenbergi read: rauterbergi.
P. 854 line 20 from above, for (160 e) read: (160 c).
P. 856 line 24 from below, after **undulatus** insert: *Hew.*
P. 857 line 14 from above, after **auginus** insert: *H.-Schäff.*
P. 858 line 15 from above, after **guatemalaina** insert: *Ehrm.*
P. 861 line 5 from above, for *egeus* read: *egens*.
P. 863 line 11 from above, for (172 h) read: (167 b).
P. 863 line 24 from above, cancel (167 d, e), and 16 from below, cancel (167 b).
P. 868 line 11 from above, for *zentus* read: *zeutus*.
P. 870 line 24 from above, after **zonilis** Mab. insert: (168 f).
P. 884 line 21 from above, for (172 f) read: (172 f, g).
P. 884 line 16 from below, after (olena Mab.) insert: (191 h).
P. 908 line 26 from below, for *Brachycorine* read: *Brachycoryne*.
P. 919 line 17 from above, for (178 b) read: (179 b).
P. 927 line 24 from below, for (180 b) read: (180 b, c).
P. 928 line 12 from above, for (180 d) read: (180 c, d).
P. 935 line 23 from below, for (182 k) read: (182 a).
P. 963 line 8 from above, for (186 g) read: (186 f).
P. 972 line 20 from below, for (187 g) read: (187 h).
P. 990 line 18 from below, cancel the reference: (190 f).
P. 1030 line 13 from above, for **Eucorma** read: **Eucora**.
P. 1030 line 17 from above, for „similar“ read: „male“.
P. 1035 line 22 from below, for *compospe* read: *campaspe*.
P. 1065—1088, above the columns read „Pl.“ instead of „Taf.“

Corrections of the Plates of Volume V.

Pl.	4. fig.	for	place	Pl.	4. fig.	for	place
3 b	4. fig.	<i>burchellanus</i>	<i>panthonus</i>	81 e	4. fig.	<i>ozomene</i>	<i>flavibasis</i>
6 c	3. "	<i>belus</i>	<i>amazonis</i>	81 e	5. "	<i>flavibasis</i>	<i>ozomene</i>
8 c	3. "	<i>leontia</i>	<i>leontis</i>	82 d	4. "	<i>compta</i>	<i>comda</i>
10 a	3. "	<i>androgæus</i> ♀	<i>piranthus</i> (?) ♀	83 a	2. "	<i>eupelia</i>	<i>eupelia</i>
15 a	3. "	<i>glaucozilavus</i>	<i>glaucozlaus</i>	84 d	2, 3. "	<i>tithraustes</i>	<i>telesiphe</i>
17 d	2. "	<i>behri</i>	<i>behri</i> ♂	84 d	5. "	<i>telesiphe</i>	<i>tithraustes</i>
22 e	6, 7. "	<i>manco</i>	<i>incerta</i>	84 f	1, 2. "	<i>moneta</i>	<i>glycera</i>
28 b	1. "	<i>caethura</i>	<i>cethura</i>	85 a	3. "	<i>claudia</i> ♂ U	<i>hortensia</i> U
31 d	3. "	<i>montagni</i>	<i>montagui</i>	86 c	2. "	<i>hippolita</i>	<i>hippolyta</i>
35 d	1. "	<i>anteas</i>	<i>antea</i>	86 f	7. "	<i>poaria</i> U	<i>poasina</i> U
38 e	6. "	<i>crispinella</i>	<i>crispinilla</i>	87 f	7, 8. "	<i>cythere</i>	<i>cytheris</i>
40 b	5. "	<i>simplex</i> ♂	<i>godmani</i>	89 h	4. "	<i>taenita</i>	<i>taenita</i>
40 f	2. "	<i>pennina</i>	<i>torquatilla</i>	89 i	7. "	<i>claphiaca</i>	<i>claphiaca</i>
47 b	9. "	<i>andina</i>	<i>undina</i>	89 k	6. "	<i>dictinna</i>	<i>dictynna</i>
49 c	3. "	<i>cyanitis</i>	<i>cyanites</i>	90 a	7. "	<i>nivconota</i>	<i>nivconotis</i>
49 f	1. "	<i>telumnia</i>	<i>tolumnia</i>	90 b	5. "	<i>platylaenia</i>	<i>phlegias</i> ♂
50 d	6. "	<i>sylvestris</i>	<i>sthenes</i>	90 b	6. "	<i>albifascia</i>	<i>hilarina</i>
51 c	6. "	<i>lemonias</i>	<i>limonias</i>	90 c	7. "	<i>drymoca</i>	<i>drymoca</i>
51 f	6. "	<i>humilis</i>	<i>moderata</i> U	92 c	2. "	<i>mimas</i>	<i>subfasciata</i>
51 g	2. "	<i>herophila</i>	<i>herophile</i> U	92 c	3, 4. "	<i>phillyra</i>	<i>phillyra</i>
53 a	4. "	<i>apiciculata</i>	<i>apiculata</i>	92 c	5. "	<i>eranides</i> U	<i>eranites</i> U
53 b	2. "	<i>phanarea</i>	<i>japhleta</i>	92 d	1, 2. "	<i>eranides</i>	<i>eranites</i>
53 b	3. "	<i>japhleta</i>	<i>pelinaea</i>	92 d	4. "	<i>areyrana</i>	<i>areyrana</i>
53 b	4. "	<i>pelinaea</i>	<i>phanaraca</i>	92 e	4. "	<i>acraeina</i>	<i>hilarina</i>
54 d	3. "	<i>phagania</i>	<i>phazania</i>	92 f	1. "	<i>amoenides</i>	<i>acraeina</i>
54 f	6. "	<i>pollusca</i>	<i>polusca</i>	92 f	3. "	<i>acraea</i>	<i>hopfferi</i>
55 b	2. "	<i>quinceidii</i>	<i>quinceidis</i>	92 f	4. "	<i>actinotina</i>	<i>lugubris</i>
55 d	5. "	<i>pharnaepes</i>	<i>phurnaspes</i>	92 g	5. "	<i>polina</i>	<i>intermedia</i>
56 e	4. "	<i>ceres</i>	<i>ciris</i>	94 c	6. "	<i>lindigii</i>	<i>kefersteini</i> ♀
58 b	2. "	<i>orsedice</i>	<i>violacea</i>	94 f	5, 6. "	<i>sulpicia</i>	<i>sulpitia</i>
59 d	4, 5. "	<i>chirone</i>	<i>ulema</i>	97 e	1, 2. "	<i>oreas</i>	<i>orca</i>
60 a	2. "	<i>ulema</i>	<i>chirone</i>	97 g	5. "	<i>chrisites</i> ♀	<i>chrysites</i> ♀
60 d	2. "	<i>marginalis</i>	<i>idina</i>	98 e	4, 5. "	<i>salambra</i>	<i>salambria</i>
61 a	2. "	<i>subsericea</i>	<i>beata</i>	99 e	2. "	<i>whiteleyi</i>	<i>whiteleyi</i>
61 b	2, 3. "	<i>tamarindi</i>	<i>sikyon</i>	99 e	3. "	<i>frejya</i>	<i>frejya</i>
61 c	3. "	<i>meridionalis</i>	<i>remoliatius</i>	99 e	6. "	<i>buckeeyi</i>	<i>buckleyi</i>
62 a	1. "	<i>astyro</i>	<i>philocala</i>	99 f	3. "	<i>degandei</i>	<i>degandii</i>
62 d	2, 3. "	<i>cyllastrus</i>	<i>cyllastros</i>	100 A a	4. "	<i>caerulea</i>	<i>cocula</i>
62 d	5. "	<i>obidonius</i>	<i>obidonius</i>	100 A d	6, 7. "	<i>sophonisbe</i>	<i>sophonisba</i>
63 b	1. "	<i>syme</i>	<i>fumosa</i>	100 A f	2. "	<i>gerveia</i>	<i>gerveia</i>
64 b	4. "	<i>automedon</i> ♂	<i>polyxena</i> ♂	101 B a	6. "	<i>decima</i>	<i>decimia</i>
64 c	1. "	<i>automedon</i> ♀	<i>polyxena</i> ♀	102 A c	4. "	<i>maimuna</i>	<i>aretas</i>
66 c	1. "	<i>aurora</i>	<i>aureola</i>	102 A c	5. "	<i>patelina</i> U	<i>aretas</i> U
67 a	1. "	<i>limpida</i>	<i>hydorina</i>	102 A c	7. "	<i>aretas</i> U	<i>patelina</i> U
67 b	1, 2. "	<i>hecuba</i>	<i>heracles</i>	102 A d	1, 2. "	<i>bonplandi</i>	<i>bonplandi</i>
69 b	3. "	<i>popilius</i>	<i>vitrea</i>	102 A d	7. "	<i>cabirina</i>	<i>cabirina</i>
70 a	2. "	<i>achillides</i>	<i>violaceus</i>	102 A e	1. "	<i>cabirina</i> U	<i>cabirina</i> U
72 a	2. "	<i>connexa</i>	<i>narcæus</i> ♀	102 B h	7, 8. "	<i>pandamus</i>	<i>pandama</i>
72 c	5. "	<i>silvana</i>	<i>ethra</i>	102 C a	1. "	<i>metharmecoides</i>	<i>metharmoides</i>
72 d	4. "	<i>schulzei</i>	<i>schultzi</i>	102 C f	5. "	<i>basalis</i>	<i>basilia</i>
72 f	1. "	<i>gradatus</i>	<i>aarotome</i>	101 b	1. "	<i>thearidas</i>	<i>thearida</i>
73 a	4. "	<i>hecale</i>	<i>urania</i>	104 e	4. "	<i>zampa</i>	<i>zamba</i>
74 f	3. "	<i>fassli</i>	<i>emilius</i>	105 b	5. "	<i>glauconome</i>	<i>megala</i>
74 f	4. "	<i>rubellia</i>	<i>seitzii</i>	106 a	1, 2. "	<i>olyntia</i>	<i>theaena</i>
75 c	4. "	<i>hippolyta</i>	<i>hippolyte</i>	106 c	1. "	<i>viola</i> ♂	<i>caninia</i> ♀
76 e	2. "	<i>cassandra</i>	<i>intermedia</i>	106 c	3. "	<i>saparua</i>	<i>suapura</i>
76 f	2. "	<i>aocde</i>	<i>faleria</i>	106 d	4. "	<i>aethatea</i>	<i>aethalia</i>
78 c	2. "	<i>calliste</i>	<i>callista</i>	106 d	5. "	<i>metaxa</i>	<i>metana</i>
78 c	4. "	<i>erythraea</i>	<i>erythrea</i>	107 a	2, 3. "	<i>plesauve</i>	<i>heredia</i>
79 a	2. "	<i>charithonia</i>	<i>charithonia</i>	108 a	1. "	<i>completa</i>	<i>præccaria</i>
79 a	4. "	<i>micra</i> U	<i>micrus</i> U	108 a	5. "	<i>arricia</i>	<i>serenita</i>
79 b	1. "	<i>micra</i> ♀	<i>micrus</i> ♀	108 a	6. "	<i>arricia</i>	<i>aricia</i>
80 b	1. "	<i>cylenella</i>	<i>cylenula</i>	108 b	1, 2. "	<i>cytherea</i>	<i>despoliata</i>
80 d	2. "	<i>dianasa</i>	<i>dianassa</i>	108 c	1, 2. "	<i>mythra</i>	<i>aea</i>
80 g	1. "	<i>arcuata</i>	<i>arguata</i>	108 e	3, 4. "	<i>epione</i>	<i>agilla</i>
81 d	1. "	<i>callianthe</i> ♀	<i>amoena</i> ♀	108 e	5, 6. "	<i>mesentina</i>	<i>chanucha</i>

Plate 63 and 165 at the foot of the plate: for Fauna indo-australica place americana.

*9	172	ss	ss	'g	ss	2s	??	ss	ss	africana	ss	2s
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